10.14751/SZIE.2015.048

Szent István University

Doctoral School of Management and Business Administration Sciences

Project Success and the *Feasibility Formula*™

Lisa Chillingworth

Gödöllő, Hungary

2015

10.14751/SZIE.2015.048

The PhD School

Name: Szent István University, Gödöllő
PhD School of Management and Business Administration Sciences

Discipline: Management and Business Administration

Head: József Lehota, DSc
Professor
Szent István University, Gödöllő

Supervisor: László Vasa, Prof. h.c. PhD, MBA
Associate Professor
University of Kaposvár, Kaposvár

....
Approval of the School Leader Approval of the Supervisor

10.14751/SZIE.2015.048

TABLE OF CONTENTS

10.14751/SZIE.2015.048

10.14751/SZIE.2015.048

ABSTRACT

The success and failure of projects is a topic of great interest for those seeking answers to maximize project results. Projects typically require a significant amount of investment of both monetary and human capital, so there is often much at stake with the outcome of a project.

The *perception* of a likely outcome of project success or failure is related to undertaking a pre-project determination of feasibility, or the extent to which decision makers are engaged to align project goals with an organization's strategy. There is a significant body of research on the subject of stakeholder engagement as it relates to project success (De Wit, 1988; Baker, Murphy, Fisher, 1983; Pinto and Slevin, 1988; Torp, Austeng and Mengesha, 2004). Understanding the importance of measuring *perceived* success is more relevant today to the project management community than ever before (Belassi, Tukel, 1996). Consultations and extensive communications are key to successful stakeholder engagement and management, and provide a strong contribution to project success (Torp, Austeng and Mengesha, 2004; Pinto and Slevin, 1988).

The aim of this research is to develop a pre-project feasibility tool and methodology that contributes to both the organization and the project management profession in its ability to engage stakeholders to assess the alignment of a project with an organization's strategy, to inform the likelihood of the project outcome, and to support effective decision making. This dissertation will establish a link between the utilization of the pre-project feasibility tool and methodology and the stakeholders' ability to determine a likely project outcome and make informed decisions.

A project feasibility methodology and tool has been developed to facilitate project decision making and is the foundation for this research. The *Feasibility Formula*™ is based on the premise that stakeholders have a better opportunity to determine the likelihood of a project's outcome if they are engaged in pre-project feasibility determination: looking at the strategic objectives of an organization and the project's ability to satisfy those objectives. This informs stakeholders of opportunities and risks to the organization, and ultimately suggests the likelihood of a successful or unsuccessful project outcome. The methodology and tool itself provides an effective mechanism by which to assess an organization's readiness and permits stakeholders to perceive alignment with strategic initiatives.

This research embodies four themes: the first theme is to define project success and its link to project alignment with the strategy of an organization. The second theme is testing and refinement of the *Feasibility Formula*™ methodology and tool to support effective decision making. The third theme is to determine the tool's effectiveness in pre-project feasibility determination. The fourth and final theme is to determine the capability and willingness of the project manager and/or project team to utilize the tool in support of favourable project outcomes.

This research primarily adopted a qualitative approach through data collection, an iterative methodology refinement and action research, as well as extensive case studies. Data was collected through document analysis, interviews, workshops, evaluations, case studies, and observation from the application of the *Feasibility Formula*™. Case studies of participant

projects, as the primary source of data, were used to solicit feedback from research participants and to enable refinement of the process and tool itself. The iterative methodology refinement sought to obtain participant satisfaction (i.e. no further adverse comments) through successive versions of the tool and methodology.

Findings from the research can be characterized as follows: The *Feasibility Formula*™ was evaluated as an effective tool and methodology in determining: i) the extent to which a project is aligned with the organization's objectives; ii) the likelihood of a successful project outcome; and iii) key factors affecting decision making. Further, the research provided a greater understanding of the project manager and/or project team's willingness and capability to use the *Feasibility Formula*™ to engage project stakeholders.

This research contributes to the project management body of knowledge through the provision of a tested and refined pre-project feasibility tool and methodology that assesses the alignment of a project with an organization's objectives, informs the likelihood of a successful project outcome and supports effective decision making among stakeholders.

It is anticipated that the *Feasibility Formula*™ will provide a number of practical benefits as an outcome to this research including: an increase in the number of successful projects, hence increased value to the project organization; an increase in the competency level of project managers; and benefit to the profession through the increased likelihood of project success.

10.14751/SZIE.2015.048

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

Projects are *temporary endeavours* that produce a unique result – a product, service, or other outcome. There is a need to conduct due diligence in advance of the project in order to establish viability and the project's ability to achieve the desired result.

Consider that most types of projects experience high rates of failure: 31.1% of projects are abandoned or cancelled before completion (i.e. total loss); 52.7% of projects average delivery of half of their planned functionality and cost two times their original estimates; and 16.2% of projects are completed successfully[1]. Which leads one to question: Why are projects cancelled or abandoned at such high rates? Why are so few projects completed successfully? These high rates of failure do not *have to* apply to the majority of projects. Project success or failure is strongly influenced by the level of pre-project feasibility determination undertaken by key stakeholders with an "organization perspective". Within this feasibility determination, it is the identification of an organization's strategy and clear business objectives, and the extent to which the project can satisfy these objectives, that supports the likelihood of a successful project outcome.

The *Feasibility Formula*™, a project due diligence methodology and decision making support tool, was developed to assist the project community – i.e. project manager and team, and key stakeholders – in this process. The *Feasibility Formula*™ is based on the premise that there is a greater likelihood of a successful project outcome if a robust project feasibility tool and methodology is in place to facilitate effective decision making prior to the project being launched. It offers an instrument and accompanying structured process to identify and assess the relative importance of an organization's goals, and the project's ability to satisfy these goals.

The benefit of the tool is derivative of the consultative and interactive nature of the process itself, and its resulting analysis. The use and methodology of the *Feasibility Formula*™ to engage stakeholders in the active determination of a project's probability for success is the focus of this research. The goal is to establish the connection between the use of the tool and methodology - based on its refinement and testing- and its ability to support effective decision making in a project environment.

The research is exploratory and descriptive in nature as it examines an organization's objectives as key decision making criteria, and its importance in various project types within medium to large sized Canadian organizations in both the public and private sector. The research proposition is that project management will be supported by the application of the *Feasibility Formula*™ tool and methodology and its ability to determine alignment of a project with an organization's strategy, and in supporting project stakeholders in the key aspect of decision making.

The dissertation explores the progression and cumulative results of action research and an iterative refinement of the prototype tool and methodology, and its effectiveness with participant

[1] The CHAOS Report (1994, 2004), The Standish Group, http://www.standishgroup.com/sample_research/chaos_1994_1.php

organizations. It is grounded in qualitative research with data gathered from the numerous and iterative refinements, and from participant evaluations. A series of case studies are presented that harness data from individual consultations, informal and formal meetings, observation, team workshops and review and analysis of project documentation. These case studies further examine the capability and willingness of the project manager and/or project team to use the *Feasibility Formula*™ tool and methodology for pre-project feasibility determination and decision making.

This research studies ways to aid project managers and stakeholders in identifying, examining and evaluating an organization's goals and criteria considered essential to project success. The outcome of the research is a dynamic and comprehensive methodology and tool that has been refined and tested in a number of project environments.

An overview of the dissertation and its scope is presented in this chapter. Section 1.1 presents a brief description of the researcher's background and the contribution permitted by this experience, as well as the inspiration and structure garnered through coursework in the Masters of Project Management program at the University of Quebec. Section 1.2 describes the research: the background, motivation, reasoning, the research problem and themes which guided the research objectives, questions, theoretical framework, and methodology.

1.1 Experiences of the researcher leading to the research

I have more than twenty years of experience in project management within many industries, both public and private sector, and for numerous project types including construction, retail, communications and IT. My work has included leading projects, providing strategic planning and consulting services, and project management training. In my current role as Director, Advisory Services, for Canada's largest project management firm, my focus is leading a national team in the upfront planning, due diligence and feasibility determination of complex capital projects, as well as providing Project Management Office (PMO) design and support.

As a senior management consultant in the project management discipline, I have seen projects succeed and projects fail. I understand the importance of proper due diligence and feasibility determination and its application before a project is undertaken, and the consequences of not doing so.

In project management, there is an extreme tendency to jump straight into execution. Project managers are most often handed solutions to implement rather than well-defined and validated projects that are aligned with organizational objectives. Further, project managers are commonly not involved in the pre-project planning and decision-making process which can lead to a lack of: clear vision, alignment of stakeholders, issues identification, defined expectations/results and informed decision-making. Pre-project feasibility, with the involvement of the project manager, can lead to the early identification, assessment and resolution of issues and permits a determination of project viability, and the likelihood of a successful project outcome.

These experiences and insights have led to the development of the *Feasibility Formula*™ prototype.

1.2 Development of prototype *Feasibility Formula*™

The *Feasibility Formula*™ methodology and tool was designed to be a mechanism for assessing organizational criteria and determining the extent to which a candidate project could satisfy the criteria. It represents the due diligence and analysis required to ensure informed decision making in support of organizational objectives and criteria.

The due diligence and decision making methodology is supported by a visual scoring matrix that identifies individual criteria, or elements, and permits stakeholders to weight the relative importance of each one. While these criteria have had several iterations, the final version of the tool presents eleven criteria that appear common to most organizations, as validated through the research. The stakeholder participants can then "drill down" on each criteria to define further objectives and elements against which to "negotiate" the merits to the organization, and the project's forecasted ability to satisfy.

The *Feasibility Formula*™ was inspired by my work as a management consultant in a project environment. Its foundational premise is that pre-project assessment and feasibility determination against an organization's objectives and criteria (i.e. "what's important") is necessary to determine the viability of a project and its likelihood for success. The tool permits stakeholders to: engage in necessary and robust discussion; rate the project against organizational criteria; and make an informed decision as to whether they should proceed with the project given the outcome of the exercise. The tool and methodology was created to enhance the likelihood of project success.

1.3 Background to the research

The idea for a robust methodology of engaging stakeholders in a pre-project feasibility determination process arose from my management consulting experiences: projects were often initiated without any prior assessment against an organization's strategy, nor meaningful stakeholder engagement, calling for mid-stream correction (if possible); projects experienced many issues throughout the lifecycle that may have been avoided if assessed up front; and projects frequently had their scope altered or were cancelled outright.

One of the most important aspects leading to this research, was the lack of engagement of stakeholders in a dynamic project feasibility assessment, and moreover, the project manager's absence from this process. Not only were organizational stakeholders "in the dark" about project objectives and outcomes, but the project manager knew less about what the overall project would accomplish.

As such, the *Feasibility Formula*™ was developed to foster the engagement of key stakeholders and ensure a common understanding of a project's ability (or inability) to address organizational strategy, and ultimately its likelihood of success.

Much research has been conducted on project success and failure. The Standish Group report (1994, 2004) cited in the Introduction presents staggering statistics of project failure. Other research defining project failure includes the recognition of poor alignment between the project

solution and the organization's strategy, business requirements or priorities (Canadian Management Accounting Society, 1998). The literature finds project success, on the other hand, influenced by the alignment of project outcomes to the strategy of an organization.

From this research, there is recognition of the importance of identifying organizational needs and priorities, and senior stakeholder engagement – in all sectors. However, this recognition is not well supported by current tools or methodologies. The development and refinement of the *Feasibility Formula*™ and a determination of its effectiveness in fulfilling this need is the subject of this research.

1.4 Research Proposition

The practice of project management will be advanced by the Feasibility Formula™, a pre-project feasibility determination tool and methodology which seeks to determine alignment of a project with an organization's objectives and support stakeholder decision making. A focused and effective pre-project feasibility tool and stakeholder engagement methodology is necessary to facilitate formulation of perceptions for a likely project outcome and enable informed decision making.

The four themes arising from this proposition are illustrated below:

Table 1.4 – Research Themes

Research Theme 1 *Project Success and Failure*	**Research Theme 2** *Refining the Feasibility Formula™*	**Research Theme 3** *Determining Feasibility Formula™ effectiveness*	**Research Theme 4** *Project Manager and/or Project Team capabilities*
Question 1 **Objectives 1, 2** Project success and alignment of project with organization's strategy AND **Question 2** **Objective 3** Existing feasibility determination and decision making practices in project management	Prototype *Feasibility Formula*™ Leading to **Question 3** **Objective 4** Refined and tested *Feasibility Formula*™ methodology and tool	Effectiveness of *Feasibility Formula*™ **Question 3** **Objective 5** For specified project types **Question 3** **Objective 6** Measures of effectiveness	**Question 4** **Objective 7** Capability and willingness of PM and/or project team to use the methodology and tool

1.5 Research Questions

The research questions developed are:

1. Does the alignment of project goals with the strategy of an organization influence project success?
2. What are the characteristics of effective decision making in a pre-project environment?
3. Does the use of a pre-project methodology supported by a tool such as the *Feasibility Formula*™ increase the effectiveness of decision making?
4. How capable and willing is the project manager and/or project team in using the *Feasibility Formula*™ methodology and tool to engage with decision makers?

1.6 Research Scope and Objectives

The resulting research objectives developed from the research questions are:

Objectives 1 and 2, from Question 1:

1. To define project success.
2. To describe the relationship between effective pre-project feasibility determination and project success.

Objective 3, from Question 2:

3. To identify current pre-project feasibility and related decision making practices.

Objective 4, 5 and 6, from Question 3:

4. To test and refine the *Feasibility Formula*™ methodology and tool.
5. To measure the effectiveness of the tool.
6. To evaluate its effectiveness in different project types.

Objective 7, from Questions 4:

7. To examine the capability and willingness of the project manager and/or project team to use the methodology and tool.

1.7 Hypothesis

The hypothesis, therefore, based upon the stated research problem, research questions and objectives is:

> *The Feasibility Formula™ tool and methodology contributes to both the organization and the project management profession in its ability to inform the likelihood of a successful project outcome and support effective decision making.*

1.8 Research Design

This research project is designed to address the research questions identified in Section 1.5, and is carried out in three phases:

> **Phase 1**: Literature Review on project success and pre-project feasibility determination
> **Phase 2**: Iterative Methodology Refinement and Action Research

Phase 3: Case Studies

The research design is shown below in Table 1.8.

Table 1.8 – Research Design

Phase 1 **Research Theme 1**	**Phase 2** **Research Themes 2 & 3**	**Phase 3** **Research Theme 4**
Literature Review	**Iterative Prototype Refinement and Action Research**	**Case Study**
Project success and alignment of project with organization's strategy Identify existing pre-project feasibility determination and decision making practices	4 iterations 6 workshops 18 exercises	Interviews Observation and reflection Document analysis Data from Phase 2
Outcomes Existing feasibility determination and decision making practices in project management to Phase 2 Data to formulate questions for Phase 3 interviews	***Outcomes*** Refined *Feasibility Formula*™ Effectiveness of *Feasibility Formula*™ Data for Phase 3	***Outcomes*** Assessment of organization and decision making in the project environment Project manager/project team capability and willingness

Objectives 1 and 2, and the first two research questions look to examine influences on project success in a variety of project types – for example, technology, business, and accommodation projects. The Phase 1 literature review obtained data from existing research on project success to identify that project success is linked to strategic project management and the alignment of strategic goals. Further, project managers must possess the skills necessary to facilitate this alignment. This represented Phase 1 of the research.

The characteristics and attributes acquired from Phase 1 then became a key input for the interview questions for Phase 3. These same characteristics assisted in the refinement of the *Feasibility Formula*™ methodology and tool prototype, and became the basis for Phase 2, addressing objectives 4, 5 and 6, and question 3 through a series of workshops.

Objective 7 and question 4 sought to understand the willingness and capability of the project manager and/or project teams participating in the study to engage with stakeholders in the use of the tool and methodology. This represented Phase 3 of the research.

1.8.1 Theoretical Framework

A number of research approaches were examined in the preparation of the research design. This included qualitative and quantitative research, and holistico-inductive and hypothetico-deductive methods offered by the research paradigms of interpretivism, positivism, and critical theory, and various data collection techniques.

Phase 1 provided a search of the literature to identify reasons for project success and the connection between pre-project feasibility determination and project success.

Phase 2 represented an iterative process to refine the *Feasibility Formula*™ methodology and tool through action research and a series of facilitated workshops with participant organizations, persevering until no further opportunities for refinement or improvement were identified or forthcoming. This iterative process provided data that was critical to the further refinement of the tool, and for the case study.

While the approach to Phase 3 considered a number of alternatives, it was the descriptive case study, further discussed in Chapter 4, that was selected as the most appropriate technique for Phase 3. Further, the data collected throughout Phase 2 in the form of questionnaires and observations necessitated the inclusion of Phase 2 data in Phase 3.

1.8.2 Limitations of the Research

Limitations of the research need to be recognized. The data collection was of a relatively small scale that yielded research of six projects from six participant organizations. While the participants represented a sampling of both public and private sector organizations, of mid but primarily large size, findings were based on interpretations of the qualitative data collected. Further research is required to ensure greater accuracy of interpretation through a larger sample size of organizations, projects and project types.

Similarly, in assessing the capability and willingness of the project manager and/or project team to utilize the *Feasibility Formula*™ methodology and tool, the results are limited by the number of project manager and project team member participants in the workshops and case studies. Extrapolation is made from this analysis and the data applied more generally, but a larger sample size of project managers and project team members, and their exposure to the *Feasibility Formula*™ would yield more conclusive results.

The role of the facilitator in the process cannot be underestimated. This is a key function in ensuring the engagement of participants and the effectiveness of the methodology. Future research must encompass trained facilitators in the use of the *Feasibility Formula*™ methodology and tool in order to necessitate reasonable comparison of its utilization and effectiveness.

Finally, a key limitation of the research is the lack of benchmarking among projects utilizing the tool following project completion. This research was undertaken using a cross-sectional time

frame, and within a limited period, therefore the focus was on *perceived* likelihood of project outcome. Hence, the final outcome of the selected projects – some of six months to perhaps years in duration – would be unknown. As such, future research should include revisiting the outcome of the participating projects, and their success or failure, in order to benchmark the *Feasibility Formula*™ scores and their interpretation, and further evaluate the tool's effectiveness.

1.9 Structure of the Dissertation

The structure of the dissertation is illustrated in Figure 1.9. It has ten chapters:

Chapter 1 provides an introduction, purpose and background to the research, the research problem, questions and objectives, as well as the research methodology, limitations and the structure of the dissertation.

Chapter 2 presents the literature review of the link between pre-project feasibility determination and project success. The review includes an examination of current theory of project alignment with strategic initiatives, as well as the importance of stakeholder engagement and perception, and a brief description of their role in decision making.

Chapter 3 describes the *Feasibility Formula*™ methodology and tool, its origins, use and value to the project manager, project team, and decision makers within the project organization. The value to the project management professional discipline and community is also considered.

Chapter 4 describes the research approach, research design, theoretical and philosophical considerations and presents the three distinct phases of the research.

Chapter 5 depicts the detailed process of the iterative refinement of the methodology and tool and action research. It further describes the organizations and projects that were part of the research and provides a detailed summary of the workshop process. Finally, the evaluations and feedback of the workshop participants is shared.

Chapter 6 describes the case studies in detail and presents the analysis of the data collected during the research process. Six projects in six organizations were assessed: one in IT, two in accommodation, and three business projects. The organizations included: three private sector firms: one financial services/wealth management firm, one project management company, and one defense contracting organization; two public sector organizations: one IT organization and one export development company; and one not-for-profit organization: a medical association. Each case study includes a description of the organization, the project being considered, and an evaluation of the case study. Chapter 6 also compares the case studies through an inter-case analysis and extrapolates to inform conclusions.

Chapter 7 presents a final summary of the research findings in response to the research questions posed, and the contribution of this research to the discipline of project management. Recommendations for future research are provided.

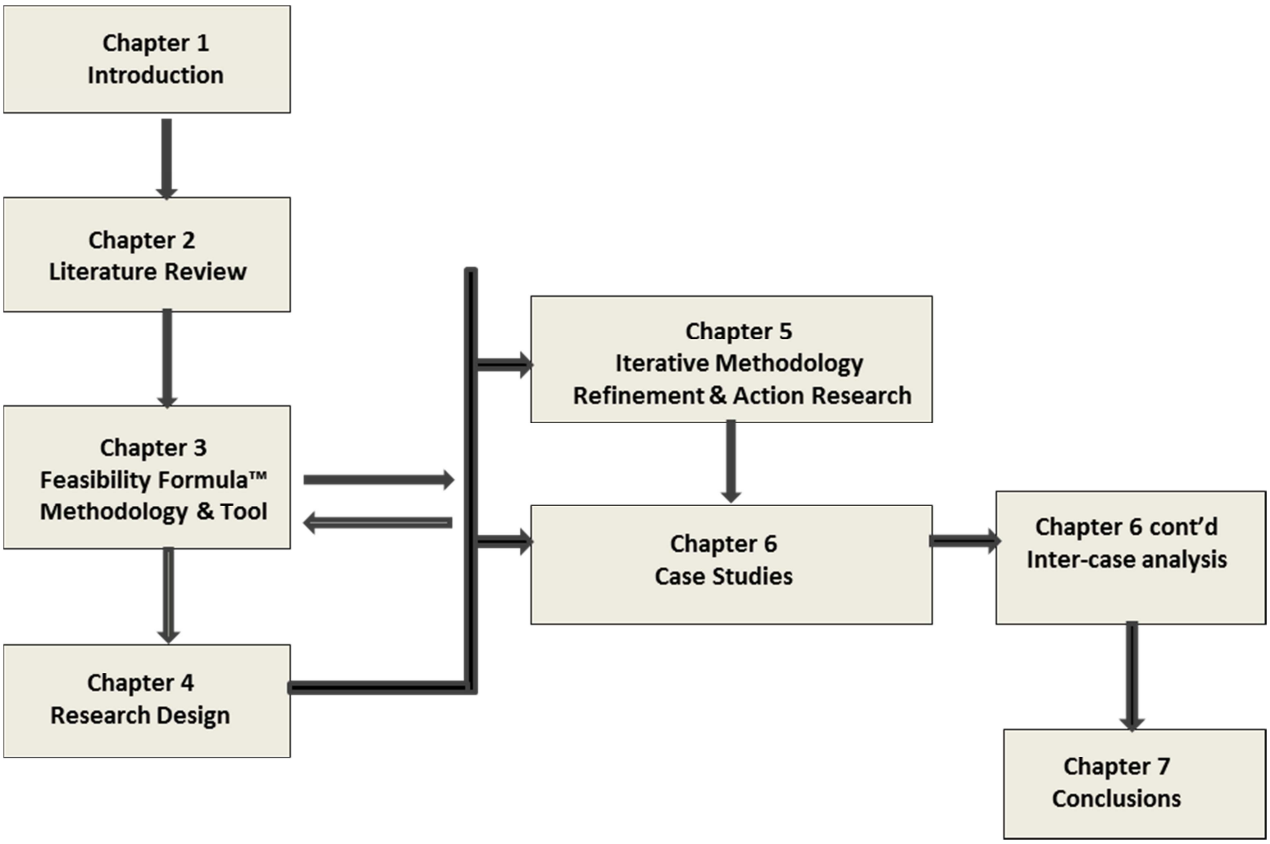


Figure 1.9 – Structure of the Dissertation

1.10 Summary of the Chapter

This chapter provides a detailed introduction to the dissertation and its foundational research. The researcher's position is that pre-project feasibility determination informs the likelihood of a project outcome and enables effective stakeholder decision making.

These concepts are explored further through the literature review in Chapter 2 which presents the fundamental theories and practical findings central to this dissertation.

2. LITERATURE REVIEW

This chapter will review previous literature and research on project success and its relationship to pre-project feasibility determination and decision making to address research question 1: *Does the alignment of project goals with the strategy of an organization influence project success?* It will also address relevant research in seeking an answer to question 2: *What are the characteristics of effective decision making in a pre-project environment?*

2.1 Project, Project Management and Project Feasibility defined

According to Shenar, Dvir, Levy and Maltz (2001), a project is initiated to create change—"to develop new products, establish new manufacturing processes, or create a new organization. Without projects, organizations would become obsolete and irrelevant, and unable to cope with today's competitive business environment."

A second and much broader definition is offered by Cleland and Kerzner (1985), in their work *A Project Management Dictionary of Terms*, and includes a description of a "combination of human and nonhuman resources pulled together in a temporary organization to achieve a specified purpose. A project, then, can be defined as possessing the following characteristics:

- Defined beginning and end (specified time to completion).
- Specific, preordained goal or set of goals.
- Series of complex or interrelated activities.
- A limited budget."

According to the Project Management Institute (PMI) (2013), the global association for the discipline, project management is "the application of knowledge, skills and techniques to execute projects effectively and efficiently." In recent years, the PMI has added: "It's a strategic competency for organizations, enabling them to tie project results to business goals — and thus, better compete in their markets." It is the importance of this connection between the project and business objectives that is of interest to this research.

The feasibility, or viability, of a project is often determined through an evaluation that focuses on the technical and financial elements of a project, and assumes objectivity in its determination of potential for success. For the purposes of this research, pre-project feasibility determination is defined as *the evaluation of the extent to which a project is aligned with the strategic objectives of the organization*.

The project organization, namely the project team, operates within the broader organization or entity. Therefore, the temporary project organization performs within the larger, more permanent one. The business strategy of the primary organization establishes the need for the project, its governance and its deliverables. According to the PMI (2013), these governance processes must ensure that project deliverables are relevant to the strategic direction of the organization.

2.2 Evolution of project success

A strong consistency in research results holds that a wide spectrum of variables can affect the success of a project (Dvir, Lipovetsky, Shenhar, Tishler, 1998). Project success is an area of research that is complex, ambiguous and multi-dimensional, and defies consensus on its definition and measurement (Lavagnon, 2009).

Researchers have been studying success factors in projects since 1967 and the concentration of these efforts have evolved from a purely technical focus to a combination of social, technical and strategic elements (Torp, Austeng and Mengesha, 2004). As project management has continued to progress as a professional discipline, there is mounting evidence of a distinct shift in focus from these quantitative, technical attributes of project management, to the more qualitative aspects, as significant contributors to project success (Cooke-Davies, 2002; Jugdev and Müller, 2005; Lavagnon, 2009; Shenhar, Levy, Dvir, 1997).

Figure 2.2 illustrates the evolution of project success dimensions along the lifecycle, from a focus on technical implementation, to critical success factors and frameworks, to the more recent consideration of strategic project management from project conception throughout the entire project lifecycle.

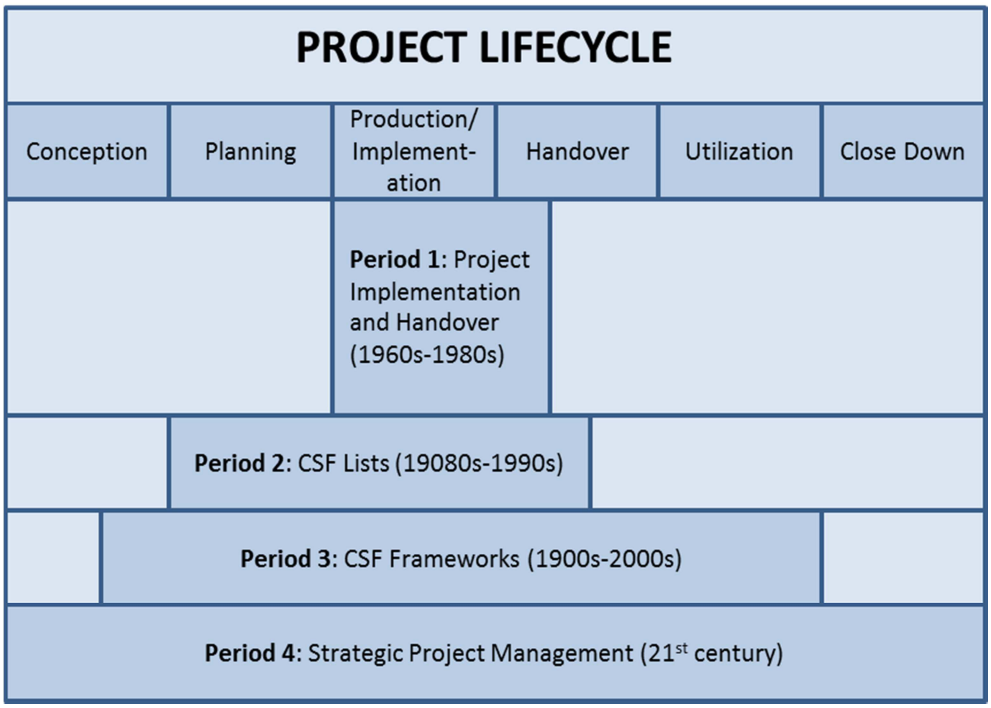


Figure 2.2 – Evolution of project success dimensions along the project lifecycle

Source: Jugdev and Müller, 2005.

In a recent literature review, Lavagnon (2009) studied *Project Success as a Topic in Project Management Journals* and found that a remarkable 25 out of 30 articles published between 1986 and 2004 had taken criteria other than the elements of time, cost and quality (i.e. the "triple constraint" or "iron triangle") into consideration in their definitions of project success.

The research on project success shows that there is no true universal concept of project success. The definition of project success depends upon the objectives considered - and therein lies the challenge: there is no universal set of objectives. The definition and interpretation of these objectives varies and is dependent upon who defines the objectives and interprets the extent to which they are being addressed, and who ultimately assesses the outcome of the project. Hence, stakeholders' understanding of the organization's objectives and the extent to which the project can achieve these objectives is a critical input to the likelihood of a successful project outcome.

According to Pinto and Slevin (1988) and their review of critical success factors in effective project implementation, one factor developed was related to the underlying *purpose* for the project and was classified *Project Mission.* Other authors have discussed the importance of clearly defining goals at the outset of the project. Morris (1983) classified the initial stage of project management as consisting of a feasibility decision: Are the goals clear and can they succeed? Bardach (1977) further identifies an implementation process that begins with instructions to first clearly state the plan and objectives.

Shenhar, Dvir, Levy and Maltz (2001) propose that project managers are the new strategic leaders, who must assume full responsibility for project business results. The researchers stipulate that "defining and assessing project success is therefore a strategic management concept, which should help align project efforts with the short- and long-term goals of the organization". They further reference the need to develop a framework for the assessment of project success that is tied to the strategic management of the organization and to "top-level decisions on project selection and project initiation". This framework would help project managers and business organizations see the different values of the organization. Most projects are conceived from a business perspective with established goals that pursue greater performance, better results, more profits, etc. The challenge lies in the project manager's ability to step outside of his/her tactical and operational focus at the activity level, to focusing on the business aspects.

2.3 Strategic alignment and project success

According to Project Management Institute (PMI) President Mark Langley, "organizations are beginning to realize that improving the alignment of strategic initiatives impacts project success." He adds that "…now is the time to refocus on aligning project and program management with organizational strategy to improve results."[2] Today's project managers must not only possess leadership and technical competencies, but *strategic and business skills* (the "talent triangle"), according to the Project Management Institute (2014), in order to accomplish this alignment.

Similarly, according to the Association of Project Management in the UK (2002), the "effective governance of project management ensures that an organization's project portfolio is aligned to the organization's objectives, is delivered efficiently and is sustainable".

[2] http://www.constructionweekonline.com/article-26694-face-to-face-mark-langley-ceo-pmi/3/, retrieved August 6, 2014

Researcher Cooke-Davies (2009) stipulates that it is important to "identify explicitly the strategy of the organization, and ensure that the goals or objectives of any project will further the sponsoring organization's chosen corporate strategy and contribute to its overall goals". This is the new reality of determining project feasibility and the likelihood of success.

Morris (2009) likewise gives consideration to the strategy of the organization, and the importance of aligning projects in pursuit of this strategy. He postulates that the emphasis should be placed on the value that the project produces for the organization, instead of the traditional focus on execution. In order to achieve this, the organization's strategy and requirements must be made explicit. Achieving the alignment between an organization's goals and the project itself is critical to the value that the project can bring to the organization.

The latter part of the 21st century has seen a stronger emphasis on the role that projects play in generating favourable, constructive change for an organization by addressing identified strategic objectives (Gareis, 1990; Turner, 1993; Dinsmore, 1999).

2.4 Methodologies and tools in support of strategic alignment

The utilization of methodologies and tools for stakeholder engagement has been associated with strategic project management (DeWit, 1988; Jugdev and Müller, 2005; Koplyay et al, 2012). Understanding stakeholder perceptions using consultation as the primary means, is of critical importance to project success (Torp, Austeng, Mengesha, 2004). The absence of this understanding can be referred to as a "perception gap" which is defined as the existence of multiple and conflicting interpretations by different stakeholders (Jiang et al, 2009).

There are examples, such as the SPICED approach (Roche, 1999), which provides a stakeholder engagement framework that invites input and involvement from project stakeholders. Such tools challenge traditional assumptions of facts and allow project managers to deal with *perceptions* of the facts (Esterella, 2000), but they are inadequate insofar as addressing strategic alignment – i.e. an organization's objectives and the project's ability to satisfy same.

Although there have been extensive studies on project management tools and techniques (PMTT) (Petanakul et al, 2010), very few have identified such tools or methodologies related to stakeholder engagement specific to strategic alignment and pre-project feasibility determination.

Researchers Dumont, Gibson and Fish (1997) sought to develop a project scope definition tool in the industrial sector in order to better achieve business objectives. In 1997 they completed a study of industrial construction projects using their Project Definition Rating Index (PDRI) to assist project managers in their scoping of projects. Within this tool, the researchers captured several business objectives including market strategy, affordability and feasibility, capacities and social issues as part of their checklist. The researchers concluded that the tool could be used as a pre-project assessment tool for determining a comfort level at which the organization is willing to authorize projects. Further, the PDRI facilitated communication and consensus building among stakeholders as an objective tool and common basis for project scope evaluation.

Several studies suggest that the proper use of project management tools and methodologies to satisfactorily gather success criteria impacts the success of a project (Petanakul et al, 2010; Pinto and Slevin, 1988) and moreover, that the process of stakeholder engagement and the capture of relevant organizational criteria is enhanced with the use of such tools and practices. The intrinsic value for these types of engagement methodologies is that they can be used to facilitate discussion between the project manager and stakeholders, and the exchange of information, knowledge, and gathering of objectives and criteria in a "live", face-to-face environment.

2.5 Stakeholder Theories

Stakeholder theories play a role in the discipline of project management and the decision making process around project selection.

A stakeholder is defined as "any group or individual who can affect or is affected by the achievement of an organization's objectives" (Freeman, 1984). Employees are identified as primary stakeholders of the firm (Mitchell et al, 1997; Bosse et al, 2009). Employees comprise the firm, and as they are "a resource of the corporation, they represent the corporation towards other stakeholders and they act in the name of the corporation (Crane et al, 2004). Employees are greatly affected by the success or failure of the firm (Greenwood, 2007) as they make an investment of experience, skills, and relationships, and they have a financial dependency on the firm. Hence their engagement in support of project selection - and in achieving project success - is often required.

Traditional stakeholder theory explores the relationship of the firm to its internal and external environment and its behavior within these environments (Freeman, 1984). According to this theory, if the firm makes a commitment to monitor stakeholder interests, it will perform better than other organizations. This approach of stakeholder engagement further supports effective decision making within the firm.

2.6 Characteristics of effective decision making

Vroom and Jago (1974) view decision making as a social process represented by events between people. When instances of decision making are required, there are a variety of social mechanisms for "determining what solution is chosen or decision reached." This social process used for decision making in organizations considers both descriptive (determinants of choices) and normative (consequences of choices) models. It is the stakeholders participating in the decision making process that determine the alternatives and ultimately, the effectiveness of the decision reached.

The notable expert on management studies, Peter Drucker (1968), identifies a number of characteristics of effective decision making. He believes that decision makers concentrate on that which is important at the "highest level of conceptual understanding". This refers to an executive's ability to think through the strategic aspects rather than solving problems through examination of detailed data. Ultimately, executives want to know the underlying realities that need to be satisfied by the decision, and therefore what would constitute an effective one.

Figure 2.6 illustrates a decision making framework that first captures the need to define objectives and appraise the organization's situation.

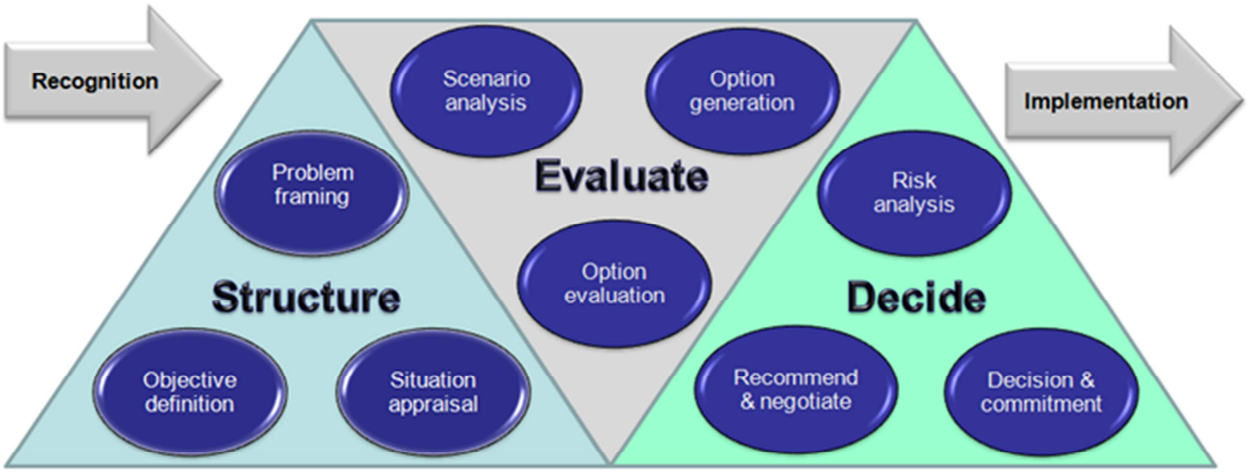


Figure 2.6 – The Genesis framework for decision making

Source: Genesis Management Consulting, http://www.genesismc.co.uk/blog/drucker-effective-decision/

Williams and Samset (2010) recognize that front-end decision making in projects is becoming increasingly important, including "the need for alignment between organizational strategy and the project concept". These researchers indicate that projects must begin with an organizational strategy and an understanding of how the strategy drives the definition of the project. Looking beyond traditional and simple success criteria is important as the project fundamentally sets out to bring about change. It is the identification and acknowledgement of the organization's objectives and criteria that facilitates effective decision making in the project environment.

2.7 Project Selection

Much has been written regarding the challenges faced by organizations in evaluating, prioritizing and selecting projects that will bring value to the firm. According to Henriksen and Traynor (1999):

> "Assessing the potential value to the organization of a proposed project is a challenge faced by every decision maker who must allocate limited resources to a plethora of candidate projects. This decision is complicated by the fact that at the outset, the probability a project will be successful in its technical objectives is usually difficult to know…and the ultimate impact of those results within the scientific and technological community is never totally apparent."

Approaches, methodologies and techniques for selecting projects, both quantitative and qualitative, have appeared in the literature for a number of decades and there are many published studies. However, there is a total lack of a framework for organizing these techniques logically in a flexible process which supports the project selection process (Archer, Ghasemzadeh, 1999).

Existing project selection methods can usually be placed into one or more of the following categories:

- Economic models, such as IRR, NPV, ROI, cost-benefit analysis
- Decision analysis, decision trees, risk analysis
- Mathematical programming
- Scoring
- Peer review
- Interactive methods
- Portfolio optimization

A most common approach is to rate potential projects against a set of criteria and apply an algorithm. Some approaches presented in the literature are so mathematically elaborate that they necessitate the assistance of an expert decision analyst in order to be useable by most real-world managers. As a consequence, very little use has been made by managers of many of these approaches (Higgins, Watts, 1986).

The following table represents a literature review of such project selection approaches.

Table 2.7 – Project Selection Literature Table Summary

Reference	Project Selection Approach
Averch, H. (1993)	Importance of portfolio considerations in project selection; advocates scoring against weighted criteria with peer review for basic research.
Bard, J.F. et al (1988)	Interactive decision support system (DSS) for screening existing projects and evaluating new ones; portfolio optimization using mixed nonlinear integer programming (NLIP) to maximize expected (economic) return.
Brenner, M.S. (1994)	Uses analytic hierarchy process (AHP) for selecting and weighting criteria; uses informal rating of projects by project champions against criteria.
Cardus, D., et al (1982)	Cost-benefit analysis combined with scoring; discussion of additive vs. multiplicative scoring algorithms.
Chun, Y. (1994)	Uses expected net present value (NPV) of a project, conditional upon its calculated projected success or failure, to derive optimal project ordering parameters.
Gaynor, G. (1990)	Provides checklist of important questions to ask and criteria to consider in selecting projects.
Golabi, K. (1987)	Uses multi-attribute utility theory (MAUT) to construct value functions; maximizes total value of portfolio of projects using linear integer programming (ILP).
Hall, D., Nauda, A. (1988)	Emphasizes formalized interactive process to integrate R&D selection with business strategy; no particular methodology stressed.
Krawlec, F. (1984)	Scoring combined with probabilistic risk assessment (PRA)
Venkatraman, R.(1995)	Ties project selection and scheduling to the project lifecycle; selections made using empirical approach.

Source: Adapted from Henrikson, Traynor, 1999.

2.8 Summary of the Chapter

From the literature review, there is established knowledge in the definitions of project success and project management, although no consensus on success criteria, caused by a universal inability to establish objectives that would be broadly applicable. The *Feasibility Formula*™ addresses this issue in supporting organizations to establish specific objectives in advance of proceeding with a project, thereby increasing its likelihood of success.

Project success has been linked to strategic management in the literature, but there remains a gap in the knowledge related to the tools and methodologies that would facilitate same. The *Feasibility Formula*™ is a tool and methodology that links the strategies of an organization with project outcome.

Research on decision making related to the feasibility of projects, as well as tools and methodologies in support of project decision making, is widely under-represented in the literature. However, research did point to decision making as an exercise that was best facilitated by the engagement and social interaction of stakeholders. The *Feasibility Formula*™ supports this premise.

The role of the project manager was identified as changing from one of technical competency to one that further demanded *strategic* and *business skills*, with responsibility for achieving an organization's goals and business results through project delivery. The *Feasibility Formula*™ supports the development of project managers in fostering stakeholder engagement and facilitation skills, as well as business skills brought about through the use of the tool and exposure to defining organization strategy and objectives.

This chapter reviewed previous literature and research on project success and its relationship to pre-project feasibility determination in addressing research question 1: *Does the alignment of project goals with the strategy of an organization influence project success?* The research would indicate that the answer is a resounding "yes", with much reference to improving project results through the alignment of project goals with an organization's strategy.

The review also addressed question 2: *What are the characteristics of effective decision making in a pre-project environment,* although the literature was lacking in definition of these characteristics in the project environment, and particularly at the early pre-project feasibility stage.

In summary, the literature review illustrates that there are elements of this research that are unique and which address gaps in current research. Further, the review proves that the research subject chosen is important and relevant.

3. THE *FEASIBILITY FORMULA*™

The *Feasibility Formula*™ is based on the principle that when key stakeholders of the organization come together to conduct pre-project feasibility, they are able to determine the likelihood of the project's success or failure. The *Feasibility Formula*™ methodology and tool provides a mechanism for stakeholders to define what is important to their organization, determine the necessary criteria, and gauge the project's ability to satisfy these criteria. The true benefit of the *Feasibility Formula*™ is the methodology itself: gathering the stakeholders and decision makers to discuss and assess the objectives of the organization that the project must satisfy.

This chapter deals with the second research theme of refining the *Feasibility Formula*™ methodology and tool. The sections within this chapter will define the methodology and tool, describe its origins, illustrate how the methodology is applied, and present the features of the tool. It will also address the value of the methodology and tool to the project manager and project stakeholders, to the organization and to the project management discipline.

3.1 Feasibility Formula™ defined

The *Feasibility Formula*™ methodology enables project stakeholders to come together in order to determine the feasibility of a project and its likely outcome. It assists in determining, through the discussion and analysis process, if the project is aligned to the organization's strategy and has the potential to meet stakeholder expectations. The *Feasibility Formula*™ captures the organization's goals and the weights assigned to their importance, and measures the project's ability to satisfy these goals. In doing so, it provides an indication of likelihood for project success or failure.

The *Feasibility Formula*™ tool is represented by a set of Excel spreadsheets that captures qualitative and quantitative information and processes numerical data. It is provided as a template with examples, yet the stakeholders must populate the spreadsheets with *what is important to them* and then *weight this importance* with a relative rating/score. There are eleven elements for which the organization's stakeholders are to identify and rate objectives:

1. Strategic Alignment
2. Risk
3. Financial
4. Stakeholder Satisfaction
5. Human Resources
6. Political
7. Brand
8. Organizational Maturity
9. Policy or Strategic Benefits
10. Compliance
11. Ethics

The eleven elements were developed by the researcher, validated and adjusted during the preliminary research and pilot phase to arrive at this final list.

The stakeholders enter the organizational objectives for each element, and rate the importance to the organization on a scale of 1 to 10. They are then asked to score the identified project's ability to satisfy these objectives. The *importance* is weighted as 65% and the *project's ability to satisfy* as 35%. The weighting is higher on *importance*, because it is the organizational objectives that drive the need for the project. If the formula was equally weighted and an element was not important to the organization, yet the project could meet the objective, it would not be relevant. This was arrived at through the consultation and pilot phases of the research. Further, the research showed that it was this combined assessment and weighting (65%-35% as a reasonable balance between importance and satisfaction) that, according to research participants, yielded the desired characteristics and therefore ranked projects consistent with the organization's intended strategy. The resulting ratio was found empirically to best represent the concept of overall value.

There is an individual worksheet for each element which rolls up to the master spreadsheet with an aggregate score and visual. The first prototype of the master spreadsheet is illustrated in Figure 3.1, while the final version is shown in Figure 3.2, for comparison purposes.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria	Description	Rating of Importance										Criteria	Satisfies Criteria									Aggregate Score
			1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10	
	"What Matters"		"What Matters Most"											"Extent that criteria satisfies what matters most"										
1	Strategic Alignment	Project meets organizational strategy and objectives.											Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).										
2	Risk	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.											Risk Assessment outcome considered satisfactory based on risk mitigation measures identified.										
3	Financial	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.											Satisfactory outcome of financial feasibility exercise(s) (e.g. ROI, IRR, NPV, Proforma calculations)										
4	Stakeholder Satisfaction	Project outcome to meet stakeholder objectives.											Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.										
5	Human Resources	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.											Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.										
6	Political	Project meets political needs and satisfies the decision maker.											Outcome of political scan demonstrates project's ability to meet political needs.										
7	Brand	Project meets organizational objectives related to brand awareness, development, corporate image.											Favourable review of project alignment to corporate image and branding strategy.										
8	Organizational maturity	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.											Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.										
9	Competitive Positioning	Project outcome positively influences organization's competitive positioning.											Satisfactory outcome of SWOT analysis including project impact consideration.										
10	Policy or Strategic Benefits	Project outcome influences organizational policy and/or strategy.											Satisfactory outcome of current policies review with favourable project impact on future policies.										
11	Regulatory Compliance	Project complies with regulatory and technical requirements.											Assessment of required regulatory measures and project's ability to satisfy.										
12	Legal Compliance	Project complies with legal and sanctioned requirements.											Assessment of legal requirements and project's ability to satisfy.										

Figure 3.1 The prototype Feasibility Formula™ - Version 1

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria	Description	Rating of Importance 1 2 3 4 5 6 7 8 9 10	Project Criteria	Satisfies Criteria 1 2 3 4 5 6 7 8 9 10	Aggregate Score
	"What Matters"		"What Matters Most"		"Extent that project satisfies what matters most"	
1	**Strategic Alignment**	Project meets organizational strategy and objectives.	10	Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).	10	**10**
2	**Risk**	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.	10	Risk Assessment outcome considered satisfactory based on risk mitigation measures.	10	**10**
3	**Financial**	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.	10	Satisfactory outcome of financial feasibility review.	10	**10**
4	**Stakeholder Satisfaction**	Project outcome to meet stakeholder objectives.	10	Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.	10	**10**
5	**Human Resources**	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.	10	Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.	10	**10**
6	**Political**	Project meets political needs and satisfies the decision maker.	10	Outcome of political scan demonstrates project's ability to meet political needs.	10	**10**
7	**Brand**	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.	10	Favourable review of project alignment to corporate image and branding strategy.	10	**10**
8	**Organizational Maturity**	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.	10	Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.	10	**10**
9	**Policy or Strategic Benefits**	Project outcome influences organizational policy and/or strategy.	10	Satisfactory review of project support of and alignment with new or current policies.	10	**10**
10	**Compliance**	Project complies with regulatory and legal requirements.	10	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.	10	**10**
11	**Ethical**	Project satisfies ethical considerations.	10	Favourable review of project alignment with ethical standards, practices and policies of the organization.	10	**10**
					TL Score	**10**

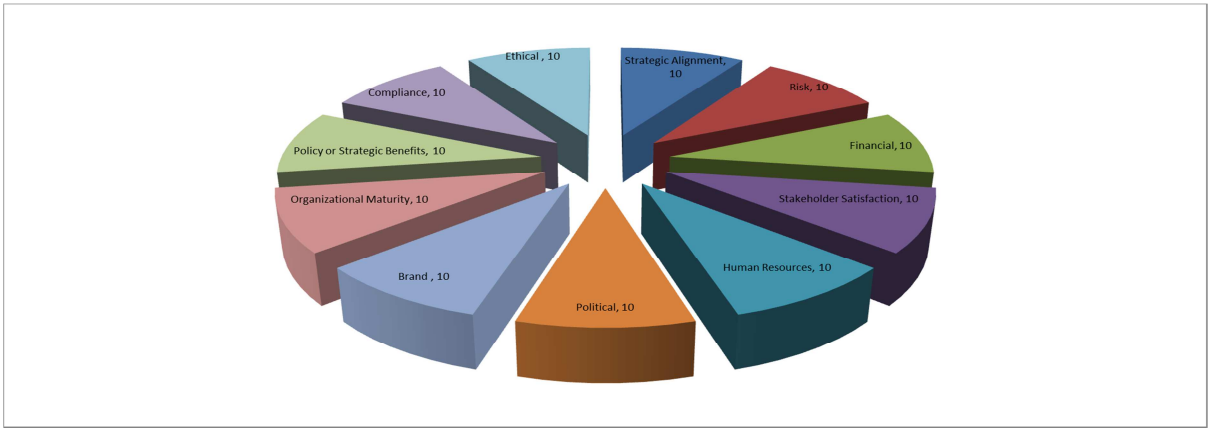


Figure 3.2 The Feasibility Formula™ - Version 4

As a group, and as facilitated by the researcher, the stakeholders are requested to identify organizational objectives related to the 11 elements, each on a separate worksheet. The researcher facilitates the discussion and captures the objectives and their rating on each spreadsheet, projected in the room for all to see. The Excel software is programmed with complex calculations for each element, that is then transposed to an aggregate score on the

master spreadsheet that will give stakeholders a “dashboard” overview. Each organization will have a customized, or unique *Feasibility Formula*™ output. Through stakeholder discussion and in assessing the product of their efforts – the master spreadsheet – the stakeholders are able to make a final recommendation or decision as to whether to proceed with the project.

3.2 Origins

Driven by my experience in management consulting for capital projects across a wide variety of sectors, I came to realize that the majority of projects were not assessed at the organizational level (i.e. against organizational objectives) before being undertaken. Projects were being initiated without prior assessment by stakeholders or with a project manager’s full understanding of what the project would deliver to the organization.

While I have been able to provide assistance to organizations on a discrete basis, looking at various elements in isolation, I sought to standardize an approach by developing a methodology and more comprehensive tool that could satisfy this dilemma, providing greater insight into likely project outcome.

3.2.1 Personal input

The idea for the *Feasibility Formula*™ surfaced when it became evident that the majority of my clients did not have a means to assess a contemplated project’s ability to meet organizational objectives. Without this pre-project feasibility assessment and determination, projects were often initiated without stakeholder support or understanding of the anticipated outcome; a number of project risks and challenges therefore arose that could have been addressed; and many projects could be characterized as achieving only partial success.

The initial methodology and tool was primarily a checklist that provided structure in response to this challenge, and required input from stakeholders that would be captured, and assimilated into a report that provided mostly qualitative information in the form of a narrative. Hence, the journey to provide a robust tool that could capture both qualitative and quantitative data was pursued. I was able to undertake this journey because of my familiarity with the nature of this work in leading a national team of consultants focused on upfront project due diligence.

3.3 Using the Methodology

The methodology was comprised of three exercises conducted over one or more workshops, as illustrated in Figure 3.3.

The first exercise allowed for the introduction of the tool and methodology to the stakeholders and facilitated the active population of organizational objectives based on participant knowledge of the organization. The participants further assessed the relative importance of each objective. The output was a concise list of rated objectives for each of the 11 elements.

The second exercise was a review of the project under consideration and forecasting the project's ability, across the 11 elements, to satisfy the identified organizational objectives, and to what extent, via numerical rating. The results were auto-calculated in the spreadsheet tool at both a detailed and summary level. This exercise further accommodated the assessment and analysis of the outcome/results with the stakeholder team.

The third and final exercise provided for an assessment of project manager and/or project team's willingness and capability to use the tool and methodology, and a review of the tool's effectiveness, the solicitation and application of feedback in refining the tool, and its formal evaluation by participants.

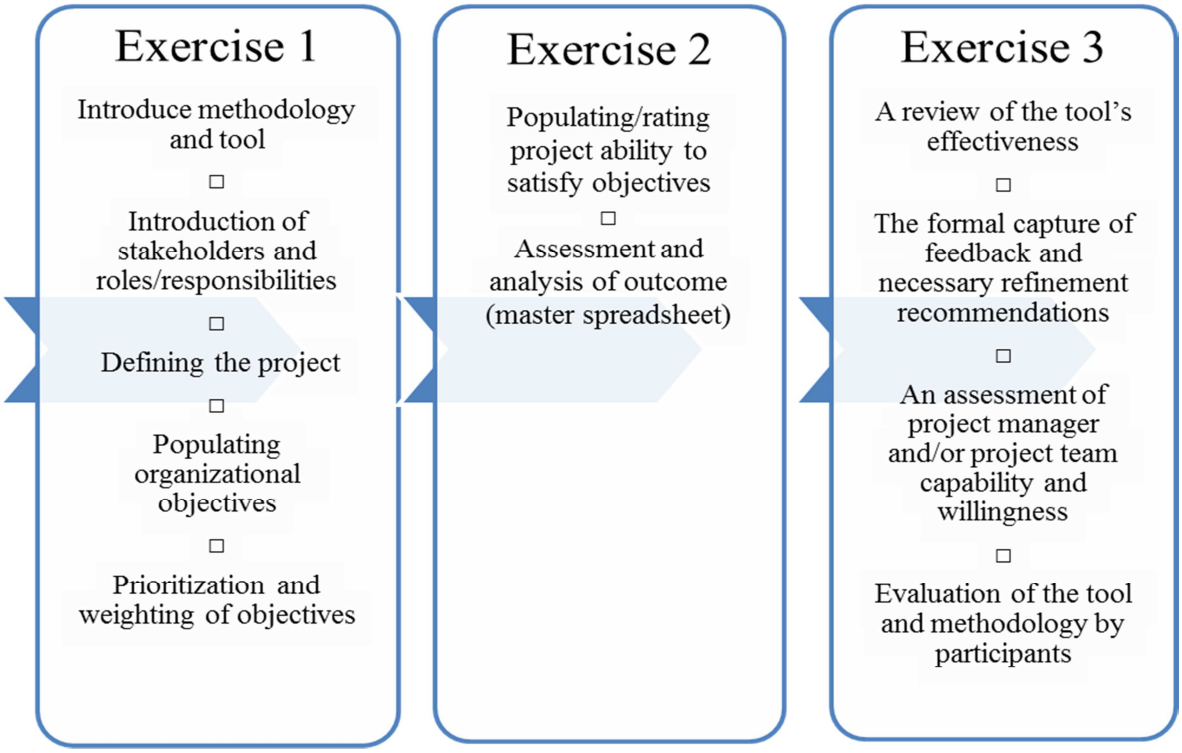


Figure 3.3 – The Feasibility Formula™ Methodology

3.3.1 Description of workshop exercises

The workshops involved three distinct exercises:

The first exercise entailed:

- An introduction to the methodology and tool
- Introduction of stakeholders and roles/responsibilities
- Defining the project
- Populating organizational objectives
- Prioritization and weighting of objectives

The second exercise consisted of:

- Populating/rating project ability to satisfy objectives
- Assessment and analysis of outcome (master spreadsheet)

The third exercise necessitated:

- A review of the tool's effectiveness
- The formal capture of feedback and necessary refinement recommendations
- An assessment of project manager and/or project team's capability and willingness to use the tool and methodology
- Evaluation of the tool by participants

3.3.2 Identification of workshop participants

In early communications and discussion with the organization's sponsor for the research contribution, stakeholder participants were selected based on two criteria: i) their knowledge of the organization (i.e. its goals and business objectives) and ii) their knowledge of the candidate project. The participants were therefore *stakeholders* of the projects.

In most workshops, there was representation from the organization's senior management, a sponsor for the project, functional area representation, and members of the project team, including the project manager. In two cases, formal Project Management Offices (PMOs) were in place and represented.

Details of the workshop participants are provided in Chapter 6 which presents the case studies.

3.3.3 Identification of candidate projects by participant organizations

Within the first exercise, and following the introduction of the methodology and tool, the participants took the opportunity to identify the project to which the *Feasibility Formula*™ methodology and tool would be applied.

An objective of the research was to test the applicability of the *Feasibility Formula*™ to many project types, to ensure its versatility and usefulness across the broader project management practice. Some organizations presented several candidate projects at the outset of the first exercise, from which the researcher/facilitator could choose. The only stipulated criteria was that the proposed project be under formal consideration by the organization and not yet initiated. This was important in order to ensure there was little or no pre-conceptions or biases about the project's viability, as would likely be the case if already committed.

As a result, a good cross-section of projects were encompassed in the research, including an IT project, two accommodation projects, and three business projects including real estate, marketing and business development initiatives.

3.3.4 Identification and weighting of organizational objectives

The main component of the first exercise is the identification of organizational objectives by the participant group. Examples of types of organizational objectives were provided by the researcher to help facilitate the exercise and get the individuals to think and collectively discuss these among the stakeholder group present. These examples were displayed on each worksheet within the tool itself. Several organizational objectives (up to seven per category/element as allocated in the tool) were captured for the 11 elements described earlier.

Once the objectives were identified within each worksheet, the participants were asked to identify the weighting of importance ("what matters most") to the organization for each objective on a scale of one to ten. These scores were summed at the bottom of each worksheet, and an aggregate score assigned to the master spreadsheet for the particular element.

3.3.5 Identification of project ability to satisfy objectives

After the organizational objectives were identified and weighted, the participants reviewed the project's ability to satisfy these objectives through an identical weighting exercise, thereby assigning a numeric score for each element on the same worksheet. This permitted a side by side view of the score for each element based on its organizational weighting, and its project weighting. For example: an organizational objective under the element "Strategic Alignment" included "Growth of $2.5M in 2014" with an importance weighting of 8; the project's assessed ability to support, contribute or meet that objective was assigned a weighting of 3. The aggregate score of 6 was transferred and automatically populated on the master worksheet.

It is important to note that the total score for each element included within its formula a 65% weighting for organizational criteria importance, and a 35% for the project's ability to satisfy this criteria. A greater weighting was attributed to the organizational criteria to underscore its importance (i.e. if an objective or criteria was not important to an organization, the project's ability to satisfy it would be less relevant).

3.3.6 Assessment and analysis of outcome

The assessment and analysis of the outcome of the exercises included interpreting the meaning of the total *Feasibility Formula*™ score and visual representation of the 11 elements, graphically represented in a "colour wheel" to the participants. The question asked was: "What is considered a reasonable score that would permit you, the stakeholder, to believe that the project was aligned with organizational objectives, that it was viable, and a likely candidate for success?"

The research indicated that the greatest value of the workshop was generated from the exercise discussions. It was the interaction, brainstorming, collaboration, consensus building and better understanding of expectations and outcomes through dialogue that provided the most meaningful insight into the project. The act of the foregoing was an exercise in due diligence itself.

While the weighting and overall rating of the elements, and the final aggregate score out of ten provided some indication of project feasibility, it was determined that the interpretation of the score varied, depending primarily on the organization's tolerance for risk. For example, high tech or IT project organizations are typically characterized as risk-takers, therefore a score of four out of ten may not elicit concern. Rather, they may indicate that they are prepared to initiate the project despite the "red flags" as IT development is risky, but worth the risk if successful. Alternatively, a mature, traditional organization may indicate that unless the score is an eight out of ten or greater, the project will not be approved to proceed, due to the organization's risk averse nature.

In summary, the assessment exercise was more a result of the discussion to arrive at a conclusion around project feasibility, rather than meaning from the score itself.

3.3.7 Project Manager assessment

The project manager and project team participants within each workshop were then called upon to assess the methodology and tool. The researcher wanted to explore whether the *Feasibility Formula*™ was considered useful to the project manager and/or project team member in their role, and whether they possessed the willingness and capability (including facilitation skills) to lead stakeholders through the methodology and discussion.

Aspects considered and discussed included:

- the ease of the methodology
- the tool's contribution to the project
- ways in which the *Feasibility Formula*™ could support the project manager and/or project team member role
- ability of the project manager/team member to use the tool
- ability of the project manager/team member to facilitate the process
- consideration for training in the use of the tool and methodology
- willingness of the project manager/team member to use the tool
- applicability to the project manager/project team member's projects

3.3.8 Evaluation of the tool and methodology

The final component of the third exercise was to have all participants complete a formal evaluation (Appendix 4). The questions were specifically chosen to elicit information that the researcher could use to better understand the stakeholder's role, their organization, and their perception of the tool's applicability and value.

Most importantly, the evaluation was an opportunity for the participant to identify, and for the researcher to understand, what worked well and what needed improving with respect to both the tool and methodology.

The results of the evaluations are provided in Chapter 5.

3.4 Features of the *Feasibility Formula*™ Tool

The *Feasibility Formula*™ methodology is accompanied by a visual tool that is used to engage stakeholders and capture information relevant to the exercise. Following is an explanation of the tool, the data that is collected, and the output provided by the tool.

The master worksheet represents a "snapshot" of the aggregate picture of the *Feasibility Formula*™ project assessment. As seen in Figure 3.4.1, the first side of the worksheet shown identifies and captures data specific to organizational goals. A description of the overarching assessment criteria is provided for each of the 11 elements identified. The rating of importance ("what matters most") is automatically populated through a series of formulas, once the individual worksheet for each element is completed.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria "What Matters"	Description	Rating of Importance 1 2 3 4 5 6 7 8 9 10 "What Matters Most"
1	**Strategic Alignment**	Project meets organizational strategy and objectives.	10
2	**Risk**	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.	10
3	**Financial**	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.	10
4	**Stakeholder Satisfaction**	Project outcome to meet stakeholder objectives.	10
5	**Human Resources**	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.	10
6	**Political**	Project meets political needs and satisfies the decision maker.	10
7	**Brand**	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.	10
8	**Organizational Maturity**	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.	10
9	**Policy or Strategic Benefits**	Project outcome influences organizational policy and/or strategy.	10
10	**Compliance**	Project complies with regulatory and legal requirements.	10
11	**Ethical**	Project satisfies ethical considerations.	10

Figure 3.4.1- Feasibility Formula™ Tool – Organization

The second half of the master worksheet provides a description of project criteria as a summary of considerations when assessing the project's ability to satisfy "what matters most". This section is also automatically populated through formulas when the individual worksheets are populated at the project level. Once again, the *importance* (i.e. "what matters most" at the organizational level) is weighted as 65% and the *project's ability to satisfy* as 35%. The weighting is higher on *importance*, because it is the organizational objectives that drive the need for the project.

	Objectives = Decision Criteria "What Matters"	Satisfies Criteria "Extent that project satisfies what matters most" 1	2	3	4	5	6	7	8	9	10	Aggregate Score
1	Strategic Alignment										10	10
2	Risk										10	10
3	Financial										10	10
4	Stakeholder Satisfaction										10	10
5	Human Resources										10	10
6	Political										10	10
7	Brand										10	10
8	Organizational Maturity										10	10
9	Policy or Strategic Benefits										10	10
10	Compliance										10	10
11	Ethical										10	10
											TL Score	10

Figure 3.4.2 - Feasibility Formula™ Tool – Project

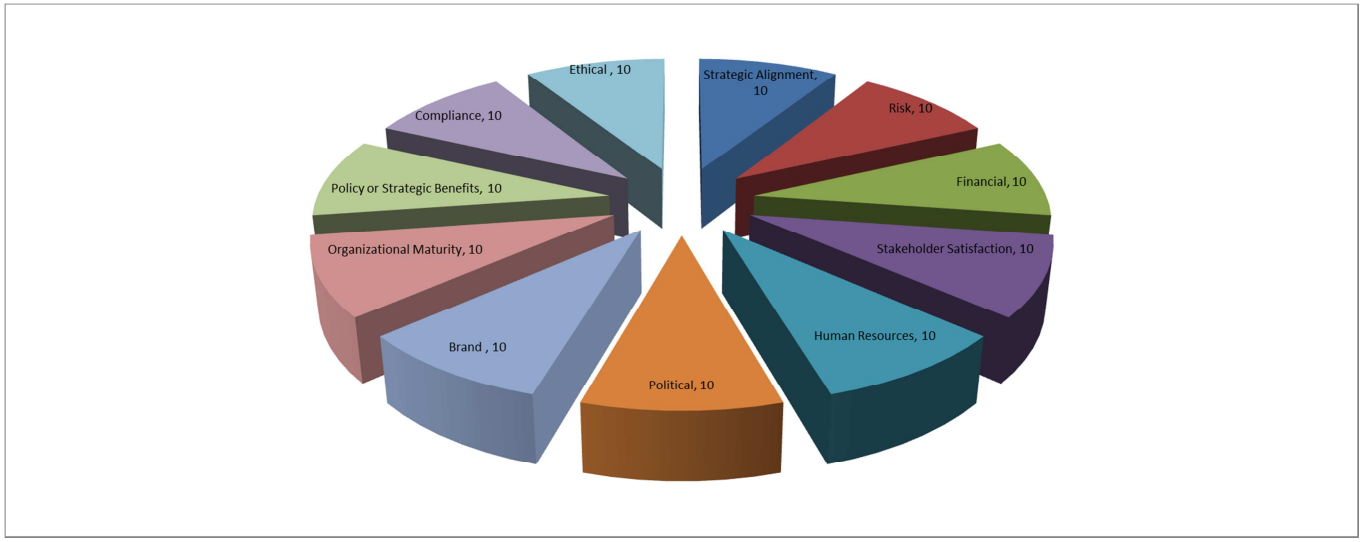


Figure 3.4.3 - Feasibility Formula™ Tool – Visual

The master spreadsheet also includes a visual representation of the findings. Each "wedge" represents one of the elements, provides the rating for that element (automatically populated from the aggregate score) and adjusts its size within the "pie" to accurately represent its total score. This permits the stakeholders to visually see which elements scored high, and which scored low, for further assessment and/or discussion as applicable.

3.4.1 Interpretation

The rating and subsequent scoring of the elements is intended to provide an *indication* of where the project is most closely aligned with the organization's objectives, based on the elements reviewed, and where it is not aligned. The results require interpretation by the stakeholders in order to determine their meaning and application - as organizations differ in their culture as to risk tolerance, and stakeholder perceptions also vary.

As indicated earlier in this chapter, the research indicates that the greatest value of the workshop is generated from stakeholder discussion and assessment. It is the lively interaction and dialogue that provided the most meaningful insight into the project, its alignment and "place" within the organization, and its likelihood of a successful outcome. Decisions are based on this assessment.

3.5 Value of the Methodology

As described above, the most significant benefit of the *Feasibility Formula*™ tool and methodology is a derivative of the workshop process and assessment itself. This is facilitated by the discussion among project stakeholders that enables all participants to "weigh in" on the definition of organizational objectives, and the various aspects of the project that may or may not satisfy these objectives. It was interesting for the researcher to observe what was often "negotiation" and resulting consensus building that took place among stakeholders.

This dialogue and necessary collaboration permitted the participants to *think deeply* about what is important to their organization, and to assess at a detailed level the true relevance and contribution of the project to the organization.

3.5.1 Value to the organization

The impetus for this research is the researcher's belief that pre-project feasibility determination contributes to project success, and that the absence of such due diligence is one of the major contributors to project failure.

The *Feasibility Formula*™ tool and methodology provides value to the organization as it:

- ensures that projects are fully assessed to ensure alignment with organizational strategy
- enables the prioritization of projects among others under consideration
- allows for adjustment to project scope and other criteria in order to support increased likelihood of project success
- shows likely areas of risk to the organization and consideration for mitigation if the project is undertaken
- permits early project termination if applicable (avoiding loss of resources, time and money)
- provides stakeholders with a view to those elements of a project which may need to be revisited along the lifecycle to ensure continued satisfaction of criteria
- fosters stakeholder collaboration, supports team and consensus building

3.5.2 Value to stakeholders/decision makers

Stakeholders benefit from the *Feasibility Formula*™ tool and methodology as it provides an opportunity for stakeholders to:

- express themselves and ensure their expectations are known
- learn about the organization and other stakeholders' perspectives through the process itself
- seek clarity related to the organization's strategy and objectives
- become part of an integrated project team
- enhance communication among team members
- understand the expectations of others
- contribute to the organization in a meaningful way
- assess the project both within and outside of their functional area

Decision makers within the organization benefit from having the necessary data and required stakeholder input to inform their decision. They can further have greater confidence in the accuracy of their decision as a result of the robust process and tool.

3.5.3 Value to the project manager

The *Feasibility Formula*™ provides value to the project manager as it presents a simple and effective methodology to assess project feasibility before the project planning process is undertaken. As a result, the project manager can have greater confidence in the project's ability to proceed with the support of the stakeholders.

The process itself also permits the project manager to engage the stakeholders and develop a relationship at the beginning of the project. The relationship with individual stakeholders will then be in a better position to be nurtured. Stakeholders and project managers can feel more comfortable in approaching each other in conversation regarding aspects of the project. It can also provide the project manager with a view as to which stakeholders he/she should spend more time with in order to understand and manage expectations. Further, he/she can also learn which stakeholder(s) can be a valuable resource or asset to the success of the project.

Through the methodology and tool, the project manager is also introduced to potential risk areas for the organization and can now manage and mitigate these risks at the project level.

Most importantly, the project manager now has the ability to manage the project with an understanding of the organization's goals, and what the project is meant to achieve as an outcome.

Beyond the project manager, the project team now has a better understanding of the stakeholder community, and its members' management styles, perspectives and expectations. They will, both individually and collectively, learn about these stakeholders and the relationships that exist or form among them. The project team members will be in an optimum position to influence and manage these relationships. Ultimately, the project team will have a comprehensive understanding of the organization's goals and the project's role in satisfying those goals.

It is the combined value that the *Feasibility Formula*™ brings to the project manager and project team that supports an increased likelihood of project success.

3.5.4 Value to the project management profession

The *Feasibility Formula*™ methodology and tool brings value to the project management profession in raising the awareness of the need for pre-project feasibility determination in an effort to increase the number of successful project outcomes. The *Feasibility Formula*™ provides knowledge leadership in consideration of the project lifecycle: project planning begins *before* the "initiation" phase, and actually commences with the feasibility determination and a measurement of the project's alignment to its sponsoring organization and likelihood of success.

The tool and methodology also contributes to the project management profession by further developing the role of the project manager. Through early involvement and stakeholder engagement, the project manager's reputation is enriched by their ability to contribute to the

strategic needs of the organization, thereby elevating the profession to a new level from the traditional tactical, technical level.

The contribution to the project management profession can be summarized as reducing the risk of project failure and resulting waste of financial and human resources. Through an improvement in the number of cases of project success the reputation of the project management profession will be enhanced.

3.6 Summary of the Chapter

The *Feasibility Formula*™ methodology and tool provides a practical and engaging means for project stakeholders to contemplate a project's viability. It provides a process and analytical technique for organizations to determine "what matters most" and to identify a project's ability to satisfy these objectives for the benefit of the organization.

This chapter has presented a detailed description of the methodology and tool, its origins, its application within the workshop and exercises undertaken, and the value it provides to the community that it is intended to support.

4. RESEARCH DESIGN

This chapter will present the research design considered and selected to address the research questions identified earlier in Chapter 1. Philosophical and theoretical considerations will be explored, as well as the purpose of research, appropriate approaches, techniques and data collection methods.

Several research approaches will be presented including those selected that best represent the research being undertaken for the *Feasibility Formula*™. The aspects reviewed are:

- Purpose and objectives of the research and its relevance
- Terminology
- Types of research
- Methodologies
- Time dimension
- Data collection
- Role of the researcher

The research techniques specified and selected for this research are:

1. Literature research – to identify the relationship between project success and pre-project feasibility;
2. Iterative Methodology Refinement and Action Research – for the methodology and tool maturation; and
3. Case Study research – to explore the willingness and capability of the project manager and/or project team member to use the *Feasibility Formula*™ methodology and tool.

4.1 Philosophical Foundations

Research is a logical and systematic search for new and useful information on a particular topic. It is an investigation of finding solutions to scientific and social problems through objective and systematic analysis. Research is done with the help of study, experiment, observation, analysis, comparison and reasoning (Rajasekar, Philominathan, Chinnathambi, 2006).

According to Majoros (1997), scientific research is a conscious and systematic practice of cognition, which provides us with tools to help us to cope with unusual problems and situations. Research is important both in scientific and non-scientific fields. In our lives, new problems, events, phenomena and processes occur every day. Practically implementable solutions and suggestions are required for tackling new problems that arise. Research needs to be undertaken in order to find causes, solutions, explanations and applications.

At the root of research are the core concepts of social science – ontology and epistemology (Grix, 2002). According to Blaikie (2000), ontology can be considered the starting point of all research, and can be described as claims and assumptions that are made about the nature of social reality whereas epistemology is related to the methods, validation and means of gaining

knowledge of social reality. Epistemology is concerned with the knowledge-gathering process and with developing new models or theories.

According to Grix (2002), methodology is the logic of the research method, and the method itself is guided by the research questions. It is this interrelationship between the building blocks of research that permits the researcher to determine: What's out there to know (ontology)? What and how can we know about it (epistemology)? How can we go about acquiring that knowledge (methodology)? Which precise procedures can we use to acquire it (methods) and which data can we collect (sources)?

Grix (2002) also portrays two approaches to studying social capital, as illustrated in Table 4.1 below:

Table 4.1 – Two approaches to studying social capital

Ontology	Epistemology	Methodology	Methods	Sources
Foundationalist (ordered universe; empirical)	**Positivist** (knowledge through experience; theory construction)	Choice of quantitative strategy, using multiple cases.	Survey	Survey data
Anti-foundationalist (social reality is the product of processes; interpretational)	**Interpretivist** (knowledge derived from everyday concepts + meanings)	Choice of both quantitative and qualitative strategy, usually using small number of in-depth cases.	Interviews, surveys	Interview transcripts and survey data

Critical theory is another approach that refers to a school of thought that stresses the reflective assessment and critique of society and culture by applying knowledge from the social sciences and the humanities. According to the Stanford Encyclopedia of Philosophy, its origins are with German philosophers and social theorists in the Western European Marxist tradition known as the Frankfurt School. According to these theorists, a"critical" theory may be distinguished from a "traditional" theory via its core concepts: i) critical social theory should be directed at the whole of society in its historical setting, and (ii) it should improve the understanding of society by integrating all the major social sciences.

4.2 Research Approaches

The following sections will review research purposes, methodological analysis, the time dimension, and methods of analysis.

4.2.1 Research purposes

When developing a research design, the researcher must determine whether the goal of the research is to be exploratory, descriptive or explanatory, as this will impact the type of study to be undertaken. According to Blanche, Durrheim and Painter (2006), exploratory studies may be

used to make preliminary investigations into new areas of research. They tend to be open and flexible and often employ an inductive approach (see Figure 4.2.2).

Descriptive studies describe phenomena in accurate detail. Typically, a set of categories or classification types are created to report the characteristics of the phenomena. Here, the research design is focused on validity (accuracy) and reliability (consistency).

Explanatory research provides causal explanations for the phenomena and may enrich a theory's explanation, and further test its predictions. It is also used to eliminate rival hypotheses – and determine which of several explanations is best.

4.2.2 Methodological strategy

There are two modes of inquiry in social research: inductive and deductive reasoning.

According to Babbie (2013), induction moves from the specific to the general, from a set of particular observations to the discovery of a pattern that represents some degree of order among events. It is the logical model in which general principles are developed from specific observations. Deductive reasoning, on the other hand, moves from the general to the specific. It moves from logically or theoretically expected pattern to observations that test whether the expected pattern actually occurs. It begins with "why" and moves to "whether," whereas induction moves in the opposite direction.

The following comparison illustrates the two approaches (Reynolds, 1971):

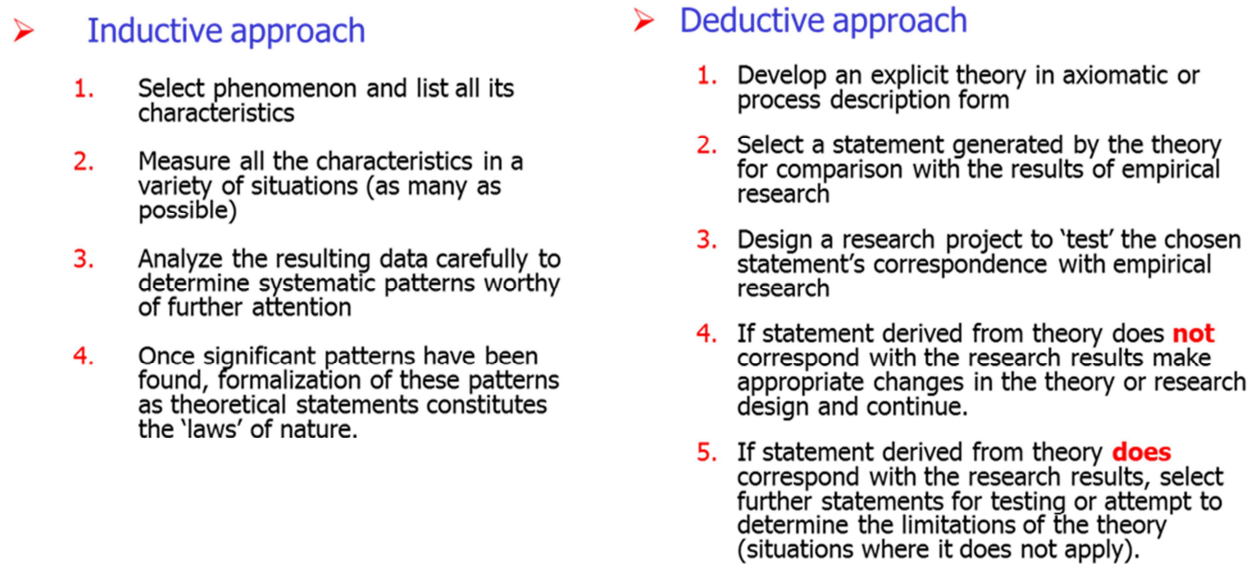


Figure 4.2.2 – Inductive vs Deductive Approach

Source: Paul D. Reynolds, A primer on Theory Construction, New-York: Bobbs-Merrill, 1971

4.2.3 Time dimension

There are two options for the time dimension of research: cross-sectional or longitudinal.

According to Saunders, Lewis and Thornhill (2009), cross-sectional studies typically use a survey strategy or interviews conducted over a short period of time. They are often exploratory and descriptive studies that represent a "snapshot" of one point in time. These researchers describe the longitudinal study approach as examining phenomena over an extended period of time. Longitudinal studies involve the collection of data at different points in time, and are often associated with explanatory studies.

4.2.4 Methods of analysis

The distinction between quantitative and qualitative data in social research is essentially the distinction between numerical and non-numerical data (Babbie, 2013).

Qualitative research can be exploratory and descriptive, and provided via case study or observation, and in-depth analysis. It is generally considered inductive research and is associated with the theory development process. Qualitative research is an iterative process where the researcher is constantly integrating learning gained from past observations into the next steps of the research. Therefore, qualitative research data collection is constantly evolving during field work. For example, interview 2 is informed by interview 1, and interview 10 by the preceding 9 interviews. Field work and ongoing data analysis and interpretation are the focus of qualitative research.

Quantitative research is generally predictive, explanatory research that supports the theory testing process and it is considered deductive research. The quantitative research process is a linear one. The existing body of knowledge leads to research propositions; theoretical concepts are operationalized and corresponding measurement tools are designed. Standardization of measurement is the rule in quantitative research: all subjects/objects are measured with the same instruments.

A comparison of qualitative and quantitative research is shown in Figure 4.2.4 below:

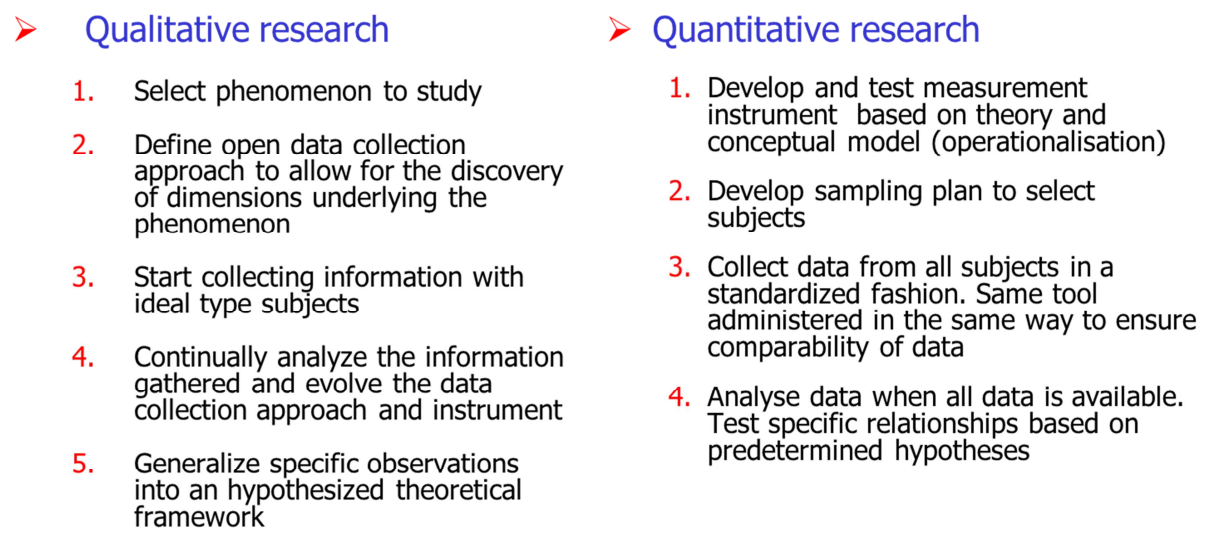


Figure 4.2.4 – Qualitative vs Quantitative Research

Source: Paul D. Reynolds, A primer on Theory Construction, New-York: Bobbs-Merrill, 1971

Berg's qualitative research design model (Berg, Lune, 2012) is somewhat a combination of the two approaches including *spiraling feedback*:

Ideas -> Literature review -> Design -> Data collection and organization -> Analysis and Findings -> Dissemination

There are other researchers that believe in the concurrent use of qualitative and quantitative methods (Blanche, Durrheim, Painter, 2006), and that they are invoked at interactive places and different points in time (Newman, Benz, 1998). When selecting the research approach (e.g. qualitative, quantitative or mixed), the researcher should decide which research approach is going to lead him/her easily, swiftly and most efficiently to the most reliable findings that adequately answer the research questions (Devetak, Glažar, and Vogrinc, 2010).

4.3 Research Techniques

This section will focus on a number of research techniques including experimental and survey research (quantitative design) and field, action and case study research (qualitative design).

4.3.1 Experimental research

Characteristics of experimental research includes that which is formal, causal/predictive, laboratory or simulation, observation or survey and statistical. Experimental research is carried out in a *controlled* environment which allows for ease of comparison of results. Benefits of experimental research include the ease of replication at a typically lower cost and in a shorter timeframe.

4.3.2 Survey research

Survey research is the most common research/data-gathering technique in social research. Surveys most often meld sampling, question design and data collection methodologies (Fowler, 2014).

Survey research is formal in most cases, constitutes ex-post facto research, and it is typically cross-sectional. It is descriptive but may be used to study complex relationships and derive predictive results. Survey research involves statistical analysis of the results including analysis of the correlations among the variables. It can be easily administered by the researcher, and provides for anonymity and avoids bias, which can be present with interview technique. Survey research can test several hypotheses, collecting data about the behaviour, characteristics, opinions, knowledge, etc. of its respondents to product numerical results.

4.3.3 Field research

Field research has been primarily conducted by social anthropologists and sociologists and is known as field work, ethnography, case study, qualitative research and interpretive procedures (Burgess, 2002).

It is also known as participant-observation research whereby researchers attempt to interpret and explain the meaning of social situations. The researcher looks to understand the meaning of events for people in particular social settings.

4.3.4 Hermeneutics

Hermeneutics is the study of interpretation. It is predominantly a methodology used to interpret text (Gallagher, 1992). Understanding text has complexities due to the nature of interpretation between text and reader, text and author and social circumstances. As *understanding* is a linguistic event, language plays a primary role. It is through language that meaning can be interpreted.

The researcher often interprets the text, develops meaning from it, and provides findings in narrative form. *Text* can be considered written or verbal.

4.3.5 Action research

Action research has a driving goal to create positive local social change. It is action oriented research rather than theory or knowledge production research. Participants are involved at all stages of the research process and oftentimes researcher-subject distinction is blurred. The researcher is an observer/facilitator serving participants and their organization and often the research problem is defined by or with the stakeholders.

Action research is collaborative, whereby all stakeholders are involved and the researcher is a participant to a collaborative process and social change effort. It is also reflective as participants reflect on their experiences, problems and issues while looking for solutions; their views of the situation are key to the solution. Finally, action research is experiential, as the research experience is part of the immediate solution but also a learning, growth experience for participants. Therefore, the process is fluid and includes planning, acting, reflecting, data collecting, then possibly more acting and reflecting, etc. throughout the research effort.

Action research can be used to uncover/produce information and knowledge directly useful to a group of people through research and education. It can also be used to enlighten and empower participants to take up and use the information gathered.

According to Schmuck (2009), action research has four characteristics – that also distinguish it from traditional research:

1. Provides intervention(s) for continuous improvement
2. Seeks to foster development and planned change
3. Aims to collect trustworthy data on the multiple perspectives of individuals and groups
4. Focuses on local change and improvement

Therefore the key elements of action research are: improvement, development, perspectives and local change.

4.3.6 Case study

Case studies can focus narrowly on very specific aspects of individual or organizational behaviours, or alternatively have a very broad scope. The case study approach allows the integration of many formal and informal elements through the data collection and analysis process. It is generally associated to a holistic approach to research providing in depth understanding of the phenomenon under study.

Case study is an approach used to examine simple or complex phenomenon through in depth study of units of analysis from individuals to large organizations using a variety of data gathering approaches that can make use or contribute to theory, although not obligatory (e.g. may just be descriptive).

Case studies can be intrinsic where they are focused on the understanding of the particular case studied with no theoretical intention. Instrumental case studies, on the other hand, are designed to provide insights into an issue or refine a theoretical explanation. The case study is not the purpose, rather answering a research question is. Cases are selected because they allow the advancement of a research interest. Collective case studies are characterized by multiple-cases that can be comparative and/or contrasting. Multiple instrumental case studies increase the validity and reliability of results.

Typically case studies are associated to theory development (grounded theory approach) rather than theory testing. Arguments for the use of theory *then* case study research suggest that it provides direction for selection of individual cases and case study design, and further allows specification of what is being explored (Yin, 2003).

Case study work makes extensive use of interviews, as characterized by Kvale and Steinar (1996), which include the following elements:

1. Thematizing:
   - Clarifying the purpose of the interviews and the concepts to be explored
2. Sampling:
   - Selecting subjects/interviewees – Roles, experience, knowledge, profile etc.
3. Designing :
   - Laying out the process including approach of interviewees and ethical dimensions
4. Interviewing:
   - Doing the actual interviews – Register, note taking, videotaping
5. Transcribing:
   - Creating a written text from the interviews (verbatim)
6. Analysing
   - Determining the meaning of material gathered
7. Verifying
   - **Checking the validity and reliability of material**
8. Reporting

Figure 4.3.6 – Interview Methodology

Adapted from Kvale, Steinar, Interviews: An Introduction to Qualitative Research Interviewing, Sage, 1996.

There are also several types of interviews to consider when designing this aspect of research, as illustrated in Table 4.3.7 below:

Table 4.3.7 – Designing: Type of Interviews

	Structured	½ Structured	Unstructured
Formal structure	High	Medium	Low
Question Order	Fixed	May be changed	No pre set order
Wording	Fixed	Flexible	No set wording
Language	Set	May be adjusted	May be adjusted
Answer to questions /Clarifications	Minimal/ Pre defined scripts	Allowed	Allowed
Additional questions	No	Probes may be added/deleted	Questions may be added/deleted

Multi-attribute small groups is an analytic interview model in which a facilitator leads a group through a structured process helping them identify their objectives or concerns and establish a hierarchy of considerations. The use of elicitation techniques developed by decision analysts also allows for the clear measurement of these identified objectives and the development of weights to distinguish more important from less important considerations. A greater detail of understanding is thus traded against the greater number of people involved in conventional surveys (Slovic, Gregory, 2000).

4.4 Data Collection

Data is the foundation of all research. Social science researchers look to data to achieve their research objectives and to answer their research questions. Data collecting methods affect the quality, quantity, adequacy and relevance of the research – therefore the overall quality of the research (Pawar, 2004).

Data collection methods are used in both quantitative and qualitative approaches to research. The methods selected are based on the chosen research approach and may include in-depth interviews, group interviews, observation, survey research and case studies, which often use interviews or questionnaires combined with documentary research. Data collection can also incorporate secondary data such as organizational documentation. To be successful in any data collection undertaken, the researcher must clearly understand the *objectives* of the data collection.

4.4.1 Criteria of Research Quality

Key criteria for the quality of data necessary for research design stem from the objectives of measurement, which are to:

- Allow empirical testing of research hypotheses
- Standardize research results, facilitating communication, integration and comparison of results
- Provide research data allowing the comparison, classification, analysis of large numbers of objects/subjects according to their attributes

Good measures should be equal to the true value of the attribute measured. Reliability and validity are central to all research. Reliability indicates exemption of random error; differences between individuals or groups are “real” and not due to variations caused by the measurement instrument. Validity refers to exemption of systematic error or bias; the actual “value” of the attribute is captured by the measurement instrument.

Triangulation can support the validity of research findings by deploying a number of research techniques and data collection methods. According to Sarantakos (1998), triangulation supports the researcher to:

- Obtain a variety of information on the same issue
- Use the strengths of each method to overcome the deficiencies of the other
- Achieve a higher degree of validity and reliability
- Overcome the deficiencies of single method studies

The objective of triangulation is to use the confluence of data to verify and substantiate evidence about phenomena.

4.5 Research Question and Objectives

As presented in Chapter 1, the four themes of this research proposition can be illustrated as follows:

Table 4.5 – Four themes of the research

Research Theme 1 *Project Success and Failure*	**Research Theme 2** *Refining the Feasibility Formula™*	**Research Theme 3** *Determining Feasibility Formula™ effectiveness*	**Research Theme 4** *Project Manager and/or Project Team capabilities*
Question 1 **Objectives 1, 2** Project success and alignment of project with organization's strategy AND **Question 2** **Objective 3** Existing feasibility determination and decision making practices in project management	Prototype *Feasibility Formula™* Leading to **Question 3** **Objective 4** Refined and tested *Feasibility Formula™* methodology and tool	Effectiveness of *Feasibility Formula™* **Question 3** **Objective 5** For specified project types **Question 3** **Objective 6** Measures of effectiveness	**Question 4** **Objective 7** Capability and willingness of PM and/or project team to use the methodology and tool

4.5.1 Research Questions

The research questions developed to address the themes above are:

1. Does the alignment of project goals with the strategy of an organization influence project success?
2. What are the characteristics of effective decision making in a pre-project environment?
3. Does the use of a pre-project methodology supported by a tool such as the *Feasibility Formula™* increase the effectiveness of decision making?
4. How capable and willing is the project manager and/or project team in using the *Feasibility Formula™* methodology and tool to engage with decision makers?

4.5.2 Research Objectives

The resulting research objectives developed from the research questions are:

Objectives 1 and 2, from Question 1:

1. To define project success.
2. To describe the relationship between effective pre-project feasibility determination and project success.

Objective 3, from Question 2:

3. To identify current pre-project feasibility and related decision making practices.

Objective 4, 5 and 6, from Question 3:

4. To test and refine the *Feasibility Formula*™ methodology and tool.
5. To measure the effectiveness of the tool.
6. To evaluate its effectiveness in different project types.

Objective 7, from Questions 4:

7. To examine the capability and willingness of the project manager and/or project team to use the methodology and tool.

4.5.3 Hypothesis

The hypothesis, therefore, based upon the stated research problem, research questions and objectives is:

> *The Feasibility Formula™ tool and methodology contributes to both the organization and the project management profession in its ability to inform the likelihood of a successful project outcome and support effective decision making.*

4.6 The Research Design

The design and the structure chosen for this research is a combination of exploratory and descriptive using inductive reasoning and using a cross-sectional time dimension. The principal method of analysis and recording is qualitative, employing data collection methods of questionnaire, formal and informal meetings, observation, interview, and document analysis.

As illustrated in Table 4.6, the research is conducted in three phases: Phase 1 is the literature review on project success and pre-project feasibility determination; Phase 2 is a process of iterative methodology refinement and action research; and Phase 3 utilizes the case study technique.

Table 4.6 – Overview of Research Design

Phase 1 **Research Theme 1**	**Phase 2** **Research Themes 2 & 3**	**Phase 3** **Research Theme 4**
Literature Review	**Iterative Prototype Refinement and Action Research**	**Case Study**
Project success and alignment of project with organization's strategy Identify existing pre-project feasibility determination and decision making practices	4 iterations 6 workshops 18 exercises	Interviews Observation and reflection Document analysis Data from Phase 2
Outcomes	***Outcomes***	***Outcomes***
Existing feasibility determination and decision making practices in project management to Phase 2 Data to formulate questions for Phase 3 interviews	Refined *Feasibility Formula*™ Effectiveness of *Feasibility Formula*™ Data for Phase 3	Assessment of organization and decision making in the project environment Project manager/project team capability and willingness

The first two research questions and first three objectives look to comprehend the influences for successful project outcomes in all project types. The descriptive and exploratory approach of Phase 1 was based on data derived from existing literature to identify that project success is influenced by the alignment of project outcomes to the strategy of an organization.

The literature review from Phase 1 and characteristics identified provided valuable input to the questions developed for the interviews, both structured and unstructured; this became the launch point of Phase 3 and further contributed to the refinement of the prototype *Feasibility Formula*™ and starting point for Phase 2 which addressed question 3 and objectives 4, 5 and 6. Question 4 and objective 7, representing Phase 3 of the research, investigated the capability and willingness of the project manager and/or project team to use the tool and methodology.

4.6.1 Research strategy

In looking at the options of the various research approaches, it become evident and well defined as to which research strategies were most suitable for each phase:

Phase 1 is addressed through the literature review that investigates the relationship between project success and pre-project feasibility determination (i.e. the extent to which a project's goals are aligned with an organization's strategy).

Phase 2 is addressed by action research and the iterative refinement of the prototype *Feasibility Formula*™ methodology and tool. Upon further exploration of the theory and characteristics of action research, it became clear that the methodology refinement activity fit all of the criteria. According to Schmuck (2009), there are four criteria of action research: i) it provides intervention(s) for continuous improvement; ii) it seeks to foster development and planned change, iii) it aims to collect trustworthy data on the multiple perspectives of individuals and groups; and iv) it focuses on local change and improvement. The key elements of action research - improvement, development, perspectives and local change – would therefore be addressed through the iterative methodology refinement process, based on facilitated workshops with participant organizations, and continuing until no further occasion for refinement could be recognized.

For Phase 3, the methodical approach chosen was case study, based on Yin (2003) and an assessment of the situational conditions:

Table 4.6.1 – Research strategies (Yin, 2003)

Strategy	Form of research question	Required control over behavioural events?	Focus on contemporary events?
Experiment	How, why	Yes	Yes
Survey	Who, what, where, how many/much	No	Yes
Archival Analysis	Who, what, where, how many/much	No	Yes/no
History	How, why	No	No
Case Study	How, why	No	Yes

Yin's *how* and *why* questions signalled the favourable use of descriptive case studies. This strategy was further supported by Phase 2 and the data collected for input into Phase 3.

4.6.2 Structure of the Research

The three phases of the research are described in the following sections. The literature research of Phase 1 serves as important input for the development of the questions for the interviews. The structure of the interviews was critical in facilitating the development of the workshops, which themselves supported the refinement of the methodology and tool.

4.7 Literature Search – Phase 1

The foundational literature search and review was the commencement of this research and established a link between project success and pre-project feasibility determination.
It further supported the development of the prototype methodology and tool through validation of the importance of strategic alignment and the absence of such tools. The outcome of the literature review in Chapter 2 represents key input for Phase 2 – Iterative Methodology Refinement and Action Research, and Phase 3 – Case Study.

4.8 Iterative Methodology Refinement and Action Research – Phase 2

The researcher's experience on the significance of observation and reflection as tools for practicing project managers, as well as the literature review and Bourne's thesis (2005), guided the researcher to consider the iterative approach in studying the effectiveness of the *Feasibility Formula*™ methodology and tool.

The iterative methodology refinement and action research was based on facilitated workshops that involved project team members using the tool and methodology in their own work environment. This afforded two key benefits: the first was the introduction of a structured process for assessing the viability of the identified project and the refinement of the tool for assessing the organization's future projects; the second benefit was to the research and was the receipt of significant feedback, input and evaluation for the tool and methodology and its effectiveness. The aggregate of this feedback yielded improvements in subsequent iterations of the tool.

4.8.1 Data collection

The *Feasibility Formula*™ prototype was first developed based on the researcher's experience with various organizations and project assignments. The prototype then became the foundation for the facilitated workshops with participant organizations, with the project selected by the sponsor. There were one or more workshops with each organization that encompassed three exercises in total: the first exercise allowed for the introduction of the tool and methodology to the project stakeholders and facilitated the active population and weighting of organizational objectives; the second exercise was a review of the project under consideration and forecasting the project's ability to satisfy the identified organizational objectives; and the third exercise provided for an assessment of the project manager and/or project team's willingness and capability to use the tool and methodology; a review of the tool's effectiveness; the solicitation and application of feedback in refining the tool, and its formal evaluation by participants.

4.8.2 Methodology Refinement Cycles

Contribution to the refinement of the methodology and tool was primarily received in two ways: the first was through dialogue and discussion during the sessions themselves, including the

receipt of both solicited and unsolicited feedback from participants; the second was through the formal evaluation at the conclusion of the exercises.

Improvements from one workshop were incorporated into the tool and methodology prior to the next workshop as part of the refinement process. The earliest iterations, including the "pilot", were expected to generate the most critical feedback and resulting improvements, however the researcher was prepared to continue until no further adverse comments were received. It was anticipated that this could be accomplished in just a few sessions, and that the comments would diminish as a result of the improved version of the tool and methodology being presented. The researcher's expectation was that the final iteration would substantiate the user-friendly methodology and tool, and its effectiveness.

4.9 Case Study – Phase 3

Following an analysis of research techniques to satisfy the needs of Question 4 - *How capable and willing is the project manager and/or project team in using the Feasibility Formula™ methodology and tool to engage with decision makers* using Yen's (2003) strategy:

4.9.1 Case Study data collection

The unit of analysis, or major entity that the researcher is analyzing, is the project, as embodied by the stakeholders including the project manager, project team and project sponsor. The case studies are projected to yield data to interpret the willingness and capability of the project manager and project team to use the *Feasibility Formula*™ methodology and tool.

Data was also collected through interviews conducted with the executive sponsor of each project and the project manager (see Appendix 5 for interview questionnaires). The approach to the interviews followed a semi-structured format, as illustrated within Table 4.3.7. The interview collected data regarding expectations, current practices of the organization and individual, and definitions of successful and unsuccessful projects. The researcher's personal experience and results of the literature search were the primary inputs to the development of the questions.

Finally, the action research and iterative methodology refinement permitted data gathering through observation and inquiry of the project stakeholders during the workshops. There were additional opportunities for the research to collect same through informal meetings with participants and project sponsors, as well as through the review and assessment of documentation provided by the organization in support of the research.

4.9.2 Case Study data analysis

The data analysis of the case studies was undertaken by examining the data gathered from each participant project and its sponsoring organization. This examination was conducted within each case and finally as an inter-case analysis, which permitted the comparison of the case studies across a number of dimensions. In analyzing the similarities and disparities both within, and between the projects, an interpretation of the data may guide the researcher to more extensive conclusions regarding the *Feasibility Formula*™ methodology and tool.

4.9.3 Validation

The data gathered, the results of its analysis, and conclusions reached were validated through the presentation of the research findings and report to the participants of the research, as well as to project management practitioners and industry professionals.

4.10 Other aspects of Research Design

While the research structure identifies three distinct phases of the research entailing different techniques, there was commonality of process among data management, selection of participants, gaining access and ethical considerations.

4.10.1 Data management strategy

A comprehensive data management strategy was a critical component of the research design and necessary to manage the abundance of data collected from many sources. It was paramount that data could be stored and retrieved with relative ease at any given time during the course of the research.

As such, the data management strategy encompassed notes from observations and feedback, formal documents such as completed evaluation forms, changes to an iteration of the tool and/or methodology, documents obtained from participant organizations, records of participants and interviews, presentation material and various summary documents. All soft copy documents were stored electronically, with files dated and organized into folders identified by subject name. Hard copy documents were categorized into folder by topic, e.g. Case Study – Private 1, evaluations, etc.

4.10.2 Selection of participants

Particular attention was given to the types of organizations and projects selected for the research. Organizations of medium to large size were pursued as being most suitable given the likely nature, scope and complexity of the projects undertaken, as well as their broader stakeholder representation and governance structure for decision making. To appropriately test the *Feasibility Formula*™ methodology and tool in a number of environments, both public and private sector organizations were selected. And it was deemed that a variety of project types would be solicited to further validate the widespread application and effectiveness of the *Feasibility Formula*™. Hence, project types targeted included: IT, accommodation and other business projects (e.g. marketing). If a Project Management Office (PMO) function existed, the target was considered to be even “richer” due to exposure to all projects within an organization and a bevy of project managers.

The final group of projects for the research consisted of: three private sector projects: one national accommodation project (PMO managed), two business projects (marketing campaign and business development initiative); two public sector projects: one IT project and one accommodation project; and one not-for profit project: a real estate strategy.

Details of the participant organizations, participant roles, cases and project details are described in Chapter 5.

4.10.3 Gaining access

The research projects to be identified by the sponsor of the organization needed to satisfy the following criteria in order to be relevant to the research:

- Project identified to be new and under consideration
- Project to be of significance to the organization (e.g. cost, risk, complexity, executive oversight/interest)
- Project manager and/or project team assigned is in place

Initiation

Critical to the success of the research was gaining access to projects that met the above criteria. An introductory letter to participants (Appendix 3) was issued to each senior management sponsor of the targeted organizations requesting their participation and outlining initial criteria for project identification. The sponsors were often referrals from other professional acquaintances that had contacts within the targeted organizations.

The letter was followed up with a phone call and/or email to further describe the nature of the research, format of the exercises, and to secure a date and time for the workshop(s). Fortunately, there was a strong interest in the research by the sponsors solicited and the acceptance rate was high.

Execution

During the research, there were a number of informal meetings that took place with sponsors that served two purposes: they helped to further understand the organizations, their challenges and politics, providing additional insight into the organization, its people and project environment. Secondly, it deepened the relationship between researcher and subject/participant, yielding additional, relevant data.

Closing

It was important to properly “close” the research with the participating organizations. Each participant therefore received a personal “thank you” for their contribution to the research. Every sponsor also received a copy of the presentation describing the research, and the completed tool itself (i.e. populated worksheets and master spreadsheet) for future use within the organization.

4.10.4 Ethical considerations

Ethics has become a foundation for conducting effective and meaningful research (Drew, 2007). Important aspects of ethics in research include the informed consent of participants, protection from harm – psychological, financial, social - and maintaining participant confidentiality, privacy and anonymity (Polonski, 2004).

Ethical behaviour must be present during all aspects and phases of the research including participant selection, data collection, analysis, reporting and publication. It is critical for the researcher to be cognizant of ethical considerations particularly in action research where it may require the researcher to respond to ethical considerations within unplanned events. It can be challenging for the researcher to anticipate such ethical issues.

Researcher integrity during the execution of the study is a fundamental principal for scientific investigation. The researcher offered and signed a non-disclosure agreement with two of the organizations due to the anticipated exposure to highly confidential information through the data collection and workshop process.

While informed consent of participants was sought and secured at the outset of the research activity, a second opportunity presented itself through the introductory presentation that laid out the purpose, methods, and participant requirements of the research, in which informed consent was again solicited and acknowledged.

Assurances of privacy, confidentiality and anonymity was provided to participants and their organizations at the beginning, during and conclusion of the research, both verbally and in written form.

4.11 Summary of the Chapter

In this chapter, the research design and structure of the research has been described in detail – from philosophical fundamentals and alternative approaches and techniques, to the final configuration of the research undertaken.

The researcher has presented the groundwork in this chapter to demonstrate in subsequent chapters that this research has: i) potential contribution to new knowledge production (this research area is largely unexplored), and ii) potential contribution to management practices (research implications for management may improve management practices leading to positive and significant impacts on organizations and society). In short, the research has meaningful practical application.

Chapter 5 following will describe the iterative methodology refinement and action research.

5. ITERATIVE METHODOLOGY REFINEMENT AND ACTION RESEARCH

The previous chapter has described and validated the selection of action research as the research technique to undertake the iterative methodology refinement that addresses research Question 3:

Does the use of a pre-project methodology supported by a tool such as the Feasibility Formula™ increase the effectiveness of decision making?

The research objectives related to Question 3 (objectives 4, 5 and 6) are:

4. To test and refine the *Feasibility Formula*™ methodology and tool.
5. To measure the effectiveness of the tool.
6. To evaluate its effectiveness in different project types.

This chapter presents Phase 2 of the research for this dissertation: action research and iterative methodology refinement to test the effectiveness of the *Feasibility Formula*™ methodology and tool. It will: provide a description of the organizations and projects that participated in the research and the workshop process; present and summarize the refinement process; and examine the effectiveness of the tool and methodology.

5.1 The Research Environment

A total of six organizations participated in the research, comprised of: 3 private sector organizations – Private 1, Private 2 and Private 3; 2 public sector organizations (federal/national level), Public 1 and Public 2; and 1 Not-for-Profit organization. In total, there were six projects: one IT, two accommodation, and three business projects (marketing, business development, real estate).

The organizations and projects are summarized in Table 5.1 below:

Table 5.1 – Research Organizations and Projects

	Organization	**Project**	**Project Type**
1	Private 1 – Project Management	National Marketing Campaign	Business (Marketing)
2	Private 2 – Wealth Management/Financial Services	National Rebranding Accommodation Project	Accommodation
3	Private 3 – Defense Contracting	International Capture Centre Initiative	Business (Business Development)
4	Public 1 –IT Service Provider	Enterprise Portfolio System	IT
5	Public 2 – Export Development	Regional Office Accommodation	Accommodation
6	Not-For-Profit (NFP) 1 – Medical Association	Real Estate Strategy	Business

5.1.1 The Cases

Private 1 – National Marketing Campaign

Private 1 is a privately held Canadian project management services company and is part of an international commercial real estate services organization. It specializes in project consulting for large capital construction and infrastructure projects through a national employee base of 300+ project managers.

The project was a marketing campaign targeting the acquisition of new national accounts for the firm. Characteristics of the campaign had previously been defined including its format (i.e. a video campaign), targeted audience, logistics of its distribution, and performance measurement. The organization was contemplating a series of marketing campaigns targeting a variety of industry sectors based on the outcome of this first project.

Private 2 – National Rebranding Accommodation Project

Private 2 is a national wealth management and financial services firm in Canada that manages roughly $30 billion in investment funds through Financial Advisors across 50 regional offices. The staff count is over 1000 employees.

The organization supports a dedicated Program Management Office (PMO) function that centrally manages strategically driven projects. Private 2's project was a National Rebranding Accommodation Project that would introduce a new brand and alternative workplace strategy through the renovation of its 50 offices.

Private 3 – International Capture Centre Initiative

Private 3 is a substantial defence and aerospace engineering firm that serves government and commercial clients in more than 40 countries via 95,000 employees, with over $30 billion in revenue. The company provides technology based systems and integration support to defence and public security organizations.

The project was an international capture centre initiative (i.e. business development) to increase sales "wins" in domestic and international markets. Up to $10M in discretionary funds was made available for the project in order to pursue other business from across the organization.

Public 1 – Enterprise Portfolio System

Public 1 is a federal government IT body with 6,000 employees that is mandated to deliver email, data centre and telecommunication services to 43 federal departments and agencies. Its current total annual budget is approximately $1.7 billion. The creation of this centralized IT organization brought together people, technology resources and assets from 43 federal departments and agencies to improve the efficiency, reliability and security of the government's IT infrastructure.

The project represents the implementation of an Enterprise Portfolio System (EPS) that is an organization-wide application intended for 300 Project Managers as primary users that will act as a PM tool and repository for the management of 218 projects (current) valued at 100s of millions of dollars.

Public 2 – Regional Office Accommodation

Public 2 is a crown corporation of the federal government that specializes in export development. It is a credit agency that supports and develops export trade by helping companies respond to international business opportunities. The organization provides financial services, insurance and business solutions to the country's exporters and investors and their international buyers.

The project represents accommodation for Public 2's regional office in central Canada. The $30M facilities budget is applied to its head office plus 17 domestic regional offices and another 17 international offices that are co-located with a foreign affairs organization. While this project has implications related to standards and method of approach for all offices, it further requires consideration for either a new office, or the renewal of an existing lease. In either case, the criteria indicate a necessary expansion to double the size of the space to accommodate new staff.

Not for Profit 1- Real Estate Strategy

Not-for-Profit 1 (NFP 1) is a national and mostly voluntary association of physicians that advocates on behalf of its 80,000 members and the public for access to high quality health care. It provides leadership and guidance to physicians through a variety of services that includes medical research, policy development, clinical resources, health programs, practice management and professional development.

The project is based on a real estate strategy for NFP 1's head office, a facility of 80,000 square feet. Options under consideration by the organization range from staying in their existing facility to adopting an alternative workplace solution and re-locating elsewhere in the city (and selling or leasing the current property), to co-locating and integrating with an affiliate located nearby. The latter is the preferred option and represents the project under formal consideration.

5.1.2 Organization, Stakeholder and Project Selection

Organization selection

The organizations selected for this research were required to individually or collectively meet several criteria in order to provide the needed inputs for the research:

- Organization regularly undertakes projects of significance
- Firm is of medium to large size (300 to 95,000 employees) given the likely access to projects of considerable scope and complexity (to test robustness of tool)
- A governance structure for decision making is in place
- The research would involve several companies to eliminate sources of bias

- Companies selected would represent both public and private sector organizations, and varying businesses, in order to support determination of applicability

Stakeholder selection

The stakeholders identified for this research were required to meet criteria in order to be chosen, based on their ability to contribute most meaningfully to the study. The criteria included:

- Senior management: those who can identify and discuss the organization's strategic objectives
- Persons with authority: to make decisions around the project (approval or rejection)
- Project Sponsor: who "owns" the success or failure of the project
- Project manager/project team members: to be assigned and in place
- Functional Specialist: to contribute subject matter expertise

Project selection

The projects chosen for this research within the participating organizations were selected based on the following:

- Project identified to be new and under consideration
- Project to be of significance to the organization (e.g. cost, risk, complexity, executive interest/oversight)
- Variety of project types to support determination of applicability

The selection process and criteria for the organization, stakeholder and project collectively ensured optimum contribution to the research.

5.2 The workshop process

As described in Chapter 3, the methodology consisted of one or more workshops (for each case) representing three exercises: The first exercise allowed for the introduction of the tool and methodology to the stakeholders and facilitated the active population of organizational objectives based on participant knowledge of the organization. The participants further assessed the relative importance of each objective and the output was a concise list of rated objectives for each of the 11 elements.

The second exercise was a review of the project under consideration and forecasting the project's ability, across the 11 elements, to satisfy the identified organizational objectives, and to what extent, via numerical rating. The results were auto-calculated in the spreadsheet tool at both a detailed and summary level. This exercise further accommodated the assessment and analysis of the outcome/results with the stakeholder team.

The third exercise provided for an assessment of project managers' willingness and capability to use the tool and methodology, and a review of the tool's effectiveness, the solicitation and application of feedback in refining the tool, and its formal evaluation by participants.

Participants of each workshop included executive members, project managers, subject matter experts and others, as identified by the project sponsor as being relevant contributors and/or stakeholders to the project and organization. Members were also sought based on their knowledge of the project and of the organization's goals and cultural disposition in order to ensure accurate representation and provide varying perspectives in order to foster robust discussion and further "test drive" the tool as it was intended.

As researcher, I facilitated all workshops, exercises and activities. Following this, the completed *Feasibility Formula*™ for the specific organization, as produced with each group, was presented to the project sponsor for review and validation. Details of the project participants is provided in Table 5.2 below:

Table 5.2 – Details of workshop participants

Participant Organization	**Project role of participants**	**Number of participants**
Private 1 – National Marketing Campaign	Vice President, Development Director, Marketing and Communications Marketing Coordinator Communications Manager/Project Manager	4
Private 2 – National Rebranding Accommodation Project	Assistant Vice President, Program Management Office Manager, Project Management Program Lead, National Re-branding Project Manager	4
Private 3 – International Capture Centre Initiative	Director, Business Development Director, Cyber Practice Director, Project Management Capture Centre Specialist Project Manager	5
Participant Organization	**Project role of participants**	**Number of participants**
Public 1 – Enterprise Portfolio System	Senior Director, Centre of Excellence (COE) Director, Business Management Solutions General Manager, Consulting Director of Project Management	4
Public 2 – Regional Office Accommodation	Director, Real Estate and Corporate Services Real Estate and Facilities Manager Facilities Coordinator Real Estate and Facilities Specialist	4
Not for Profit 1- Real Estate Strategy	Chief of Staff Director, HR and Organizational Development Project Lead, Real Estate Strategy (external)	3

5.3 Action Research - Iterative Methodology Refinement

The action research was based on its application for the achievement of four criteria (Schmuck, 2009): i) it provides intervention(s) for continuous improvement; ii) it seeks to foster development and planned change, iii) it aims to collect trustworthy data on the multiple perspectives of individuals and groups; and iv) it focuses on local change and improvement. The key elements of action research - improvement, development, perspectives and local change – would therefore be addressed through the iterative methodology refinement. Further, the process of iterative refinement would be supported by Deming's *plan, do, check, act* and the process of *plan, monitor, evaluate, reflect* (Lusthaus, Adrien, Perstinger, 1999). Systematic analysis of the methodology and tool would provide an understanding of causes for success or failure – and subsequent improvement - and also reduce the likelihood of moving too quickly to the next iteration without reaping the benefits of the current one (Slater, Narver, 1995).

The process consisted of defining the notion, determining the approach, designing the methodology, planning and implementing the activities, monitoring, evaluating and reflecting upon the results. The combined cycle of plan, do, monitor, evaluate and reflect was then repeated for each iteration.

For this research, data was collected through a series of document analyses, interviews, observation and both formal and informal discussions. The informal data served to augment the workshop process. Figure 5.3 represents a summary of the iterative process:

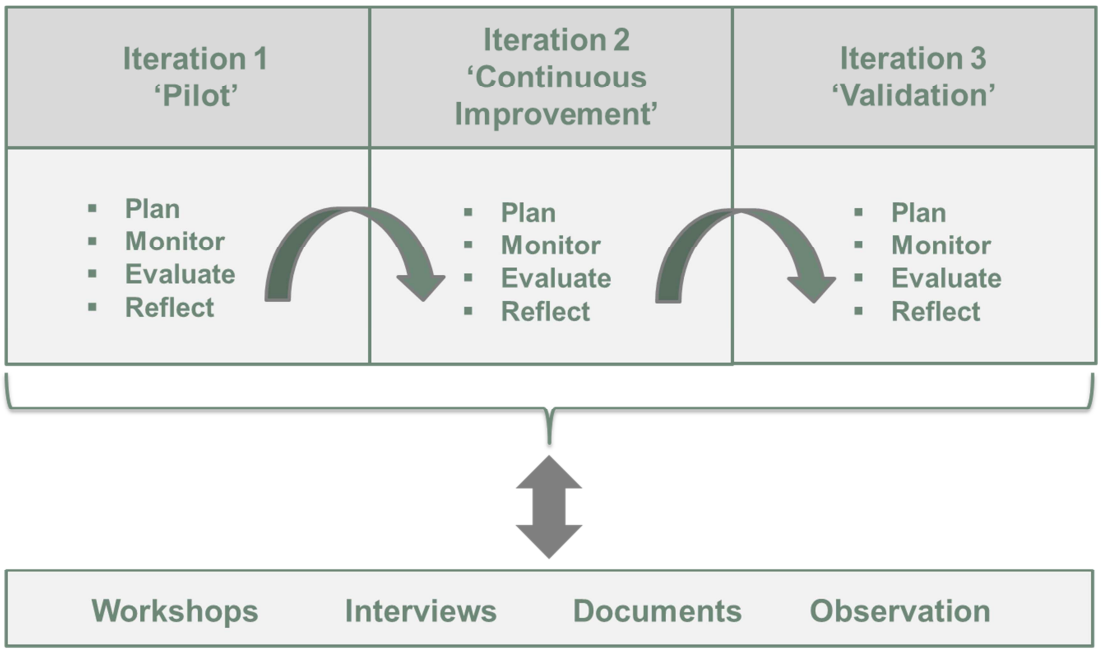


Figure 5.3 – Iterative process summary

5.3.1 Designing the refinement strategy

The refinement strategy was designed to test both the value and practical application of the methodology and tool for the participating organizations. It was germane to the research to compare its usefulness and application across a spectrum of project types and as a result, IT,

accommodation, and diverse business projects were selected for the research. Further, I wanted to determine the effectiveness of the *Feasibility Formula*™ tool and methodology in organizations of a significant size in both the public and private sector.

The *plan* and *do* aspects of the cycle were undertaken through the workshop and exercise processes, as described in detail in Chapter 4. The *monitor* and *evaluate* period was based on observation of participant actions during the workshop, feedback received, both formal and informal, and their evaluation of the *Feasibility Formula*™ tool and methodology.

Reflection at the conclusion of each workshop, and prior to the next, was critical for the researcher to enable "lessons learned" and continuous improvement for the subsequent iteration of the tool and methodology. Coupled with the participant evaluations, this permitted the researcher to query what worked, and what didn't work, and why – with a view to improvement. Further, it was important to capture learning during the process, of both participants and researcher.

Central to the research effort was the summation of notes of the thoughts and ideas from this reflection following the conclusion of each workshop, and to do so when this was "fresh in the mind". These observations were included in the refinements and became inputs for the Phase 3 case study research.

The researcher was open minded and flexible regarding the number of iterations that may be required for completing the cycle, whereby no further suggestions for improvement or adverse comments were forthcoming from the action research participants. This juncture was reached following the fourth cycle. A summary of the iterative methodology refinement is shown in Table 5.3.1 below:

Table 5.3.1 – Summary of iterative methodology refinement

Project	Changes	Output
Private 1 – National Marketing Campaign; **Private Consultations x 3**	**Pilot – Iteration 1** Prototype *Feasibility Formula*™ refined four times with improvements incorporated in tool and methodology. *February-March, 2014* -remove benefits realization (applies to all), remove timeline obligation and embraces organizational values as these are constraints not objectives -Combine awareness generation with brand -project aim/need deleted as a definition, not objective -regulatory compliance will include technical so it may be removed -add legal compliance -organizational efficiency to fall under financial -increase ratings available from 5 to 10	*Feasibility Formula*™ v1, v2 New data for Workshop 1

	-consider units of measure for each criteria -Objectives become "what matters" and ratings "what matters most" -add ethical compliance as the 11th criteria -alter examples provided on worksheets	
Private 2 – National Rebranding Accommodation Project **Private 3 – International Capture Centre Initiative** **Public 1 – Enterprise Portfolio System**	**Continuous Improvement – Iterations 2+3** *March-May, 2014* -introduce weighting of 65/35 -adjust formulas and aggregate to master worksheet -introduce pie chart -confirm visual representation -process to capture data adjusted to reduce workshop time -make corrections: several scores not recording in matrix -maintain description and criteria columns as prompts to user groups -pie chart – adjust to text within chart, no legend or numbers -change worksheet formula if fewer than 7 objectives chosen to ensure accuracy -adjust examples used to ensure "organizational" and not "project" based	*Feasibility Formula*™ v3, v4
Public 2 – Regional Office Accommodation **NFP 1 – Real Estate Strategy**	**Validation – Iteration 4** *May-June, 2014*	*Feasibility Formula*™ v5

5.4 Pilot – First Iteration

The pilot phase and first iteration of the *Feasibility Formula*™ followed the initial tool and methodology development in December 2013 and January 2014, and took place in February and March 2014. It consisted of three individual sessions with consultants (one Risk, one IT, one Defense) and a workshop with the participants from Private 1.

5.4.1 Planning and implementation

The planning for the pilot consisted of determining visual improvements for the tool, developing an accompanying introductory presentation (Appendix 6), practicing the methodology and facilitation of the workshop, and selecting the right organization and individuals to participate in the initial test and refinement of the *Feasibility Formula*™.

The implementation consisted of: two meetings each with the consultants to review and solicit feedback; and delivery of the first workshop. The consultations were planned at 90 minutes each and were successful in serving their purpose in the amount of time allotted. For the workshops, initially two were planned at 1.5 hours each, however, it became evident through discussions with Private 1 that this would pose an issue for stakeholder participation due to schedules and

time commitment, and therefore risk continuity of process. It was decided that the pilot workshop would be one event and would be set at a two hour timeframe, with a plan to accomplish the necessary exercises during this time.

It was found, however, that the time was insufficient to conduct the full workshop, so the researcher would need to review and amend the material to accomplish same in this timeframe, or solicit longer duration workshops from the remaining participant organizations: the former was chosen and the researcher subsequently condensed material and facilitation to accomplish a two-hour workshop that yielded the necessary outputs.

5.4.2 Monitoring the results and effects

Following the results of the consultations and workshop with Private 1, several adjustments were incorporated into the tool and methodology. Some of the key modifications included: an introduction of the classifications of "what matters" and "what matters most" to simplify the context for participants; fine tuning the elements to eliminate some (regulatory compliance, awareness generation) and introduce others (ethics, legal compliance); expand ratings scale from 5 to 10 for greater differentiation of importance; assign a weighting of 65:35 for scoring of organizational importance: project ability to satisfy; and make visual adjustments including the addition of an automated pie chart.

5.4.3 Reflection and evaluation

Participants in the pilot workshop (and all subsequent workshops) were asked to complete evaluations and provide formal feedback on the tool and methodology, and to further provide comment for suggested improvements. Responses are provided below in Figure 5.4.3.

Pilot Workshop Evaluation: Private 1
Worked well:
"Real value in the discussion and in agreeing upon priorities and their weighting:
"It provides the opportunity to very methodically and thoroughly examine the project from a strategic, business driver perspective"
"Facilitates making go-no go decisions on projects"
"Great to look at the project from an organizational viewpoint"
"Captures a different lens from each stakeholder"
Needed improvement:
"We identified a technical glitch with the formula to be rectified"
"Consider having a session just to discuss and set the organizational goals first"
"Anticipate level of facilitation required could be extensive for immature organizations"

Figure 5.4.3 – Summary of Workshop, Pilot – Private 1

The overall ratings from the completed evaluations were positive: ratings on i) participant confidence in the tool and methodology and ii) the likelihood of using it again scored high (out of 5): 4-5, 4-5, 4-4 and 4-5 respectively for these questions.

From the researcher's perspective, it was evident that Iteration 1 performed the necessary function of a pilot that permitted the early trial and testing of the tool in an environment that consisted of consultations and a full workshop. Private 1 was ideal as a highly cooperative, medium-sized organization in order to prepare for the large scale organizations that would be next.

5.4.4 Revision of the plan

Regarding the time required for the workshop, it was discovered that two hours was not enough to conduct the workshop as planned so modifications were made to condense material and streamline population of the tool to still yield the necessary outputs.

The suggested improvements and fixes from participants were incorporated into the plan revision and next iteration of the tool and methodology, including some recommendations on the facilitation of the workshop prior to repeating the cycle.

5.5 Continuous Improvement – Second and Third Iterations

The phase of continuous improvement covers the period of end of March through May, 2014 and included the participating organizations of Private 2, Private 3 and Public 1.

5.5.1 Planning and implementation

The planning and implementation phase of the continuous improvement cycle included a review of all feedback and resulting modifications from the pilot phase, collection of documentation from the participating organizations, discussions with participants sponsors, and further refinement of the facilitation to ensure a two-hour workshop timeframe. This included the addition of examples to the tool in order to speed up the discussion around organizational objectives. Further, the researcher conduced more 'dry runs' of the tool to ensure it was "second nature" and it could be manipulated quickly during population and discussions.

5.5.2 Monitoring the results and effects

For this continuous improvement phase, it was important to understand the possibilities for improvement from the pilot phase and with the three additional workshops. It was necessary to capture all possible modifications for the tool and methodology that would likely benefit others as a result of learning from new participants, and their feedback. The formal evaluations, as summarized in section 5.7 were also used to make adjustments.

5.5.3 Reflection and evaluation

Each of the three workshops, consisting of three exercises per workshop (total of 9), produced valuable feedback for the tool and methodology refinement. While there was some overlap or redundancy of comments and feedback (indicating consensus for improvement areas), each organization was able to yield, through its participants, a new "nugget" or two that would serve to further improve the *Feasibility Formula*™. There were a few suggestions not implemented as the researcher determined that it would benefit the few, or that organization specifically, rather than the many.

The evaluations from Private 2, Private 3 and Public 1 workshop participants follow in Figures 5.5.3 through 5.5.5.

Continuous Improvement Workshop Evaluation: Iteration 2 - Private 2
Worked well:
"Liked having all of the criteria laid out"
"Has the ability to be customized to meet our needs"
"An organized tool that linked thought to outcomes and considered organizational priorities"
"Tool looked easy to use"
"Can use the tool and methodology to compare and contrast at the portfolio level"
"Goals can be pre-determined with the executive for consistency and use with all projects"
Needed improvement:
"Required some manual manipulation of formulas if maximum of 7 objectives not identified"
"Could include an overview of each section on each worksheet for further context"
"Would be good to lay out the results in low, medium, high rather than a numerical value"
"Improve the risk definition(s)"
"Scoring is interpretive; better to go with colour legend and meaning rather than relative scores"

Figure 5.5.3 – Summary of Workshop, Iteration 2 – Private 2

The overall ratings from Private 2 on the value of the tool including i) participant confidence in the tool and methodology and ii) the likelihood of using it again scored medium-high (out of 5): 3-4, 4-4, 4-5 and 4-5 respectively for these questions.

Continuous Improvement Workshop Evaluation: Iteration 2 - Private 3
Worked well:
"Brings structure to decision making"
"Forces you to think deeply about what is important"
"Interaction of key personnel brings different perspectives and opinion"
"Determines alignment (or not) of key organizational and project focus areas"
"Encourages discussion – allows for understanding of others' roles and what's important"
"Great discussion on objectives, priorities, weighting and alignment"
"Provides formality and structured thinking to our current informal review"
Needed improvement:
"More guidance on how to populate – needs facilitation"
"Need to identify the right stakeholder group"

"Clearly define the goal of the project before the session begins ("elevator speech")"
"Need to use the tool more to determine opportunities for improvement"

Figure 5.5.4 – Summary of Workshop, Iteration 2 – Private 3

The overall ratings from Private 3 on the value of the tool including i) participant confidence in the tool and methodology and ii) the likelihood of using it again scored relatively high (out of 5): 4-3, 4-5, 4-5, 4-3 and 5-5 respectively for these questions.

Continuous Improvement Workshop Evaluation: Iteration 3 – Public 1
Worked well:
"Easy to use"
"Many of the elements capture what is required"
"The tool can help to "kill" a project early"
"The list of elements are 'bang on'".
"Can use for projects on hold or cancelled to determine the "why" behind it"
"Supports our communication efforts"
"Interactive session and walkthrough of very practical/applicable example"
Needed improvement:
"Bring more quantitative to qualitative portion"
"Needs to be tailored to the public sector – i.e. add Procurement, Security elements"
"PMs will need facilitation skills training"
"Be careful of political element with government/public sector users – should rename"
"Scoring interpretation may be skewed in risk averse environment"

Figure 5.5.5 – Summary of Workshop, Iteration 3 – Public 1

The overall ratings from Public 1 on the value of the tool including i) participant confidence in the tool and methodology and ii) the likelihood of using it again scored low-medium (out of 5): 3-2, 4-2, 4-2, 4-3 respectively for these questions. The lower scores for the likelihood of using the tool and methodology were qualified by participants since the organization had an existing tool that the participants were required to use, despite seeing the value in the *Feasibility Formula*™.

The organizations in Iteration 2 and 3 were not new to the world of project management. On the contrary, Private 2 and 3 both had dedicated Project Management Offices (PMOs) and Public 1 had a similar PM Centre of Excellence (COE). As a result, these organizations had some previous or current ability to assess projects, whether formal or informal. It was interesting to note, however, that only one of the participating organizations could claim a tool as robust as the *Feasibility Formula*™, but that it still missed the mark on determining alignment with organizational objectives. This finding underscored a significant pattern regarding lack of decision making tools and methodologies in organizations.

As the evaluations indicated, the methodology and tool brought the greatest value through essential discussion among the stakeholder group in order to arrive at a conclusion as to the project's viability and likelihood for success.

5.5.4 Revision of the plan

Workshops had now been held with the three organizations for continuous improvement – iterations 2 and 3. As the recommendations for improvement and subsequent modifications to the *Feasibility Formula*™ began to significantly diminish, it was time to conduct a final validation of the tool and methodology.

5.6 Validation – Fourth iteration

The validation phase, or fourth iteration, was conducted late May through June, 2014, with participants from Public 2 and NFP 1.

5.6.1 Planning and implementation

The planning and implementation phase of the validation included a regard for what would be necessary to interpret the tool and methodology as "approved" in a final state. The researcher was looking for an absence of suggested improvements and/or no further feedback on enhancements from the participants. This would be determined through the discussions as well as a lack of substantial comment in the formal evaluations following the workshops.

5.6.2 Monitoring the results and effects

For this validation phase, all suggested improvements from the continuous improvement phase were implemented within the *Feasibility Formula*™ prior to the workshops. Through the two remaining organizations, it was critical to understand that the tool and methodology was accepted "as is" and found to be useful in its current state.

5.6.3 Reflection and evaluation

Validation Workshop Evaluation: Iteration 4 – Public 2
Worked well:
"Opened my eyes to the corporate objectives. We usually only look at the small picture."
"Easy comparison between corporate objectives and projects."
"Looks, works really well."
"Keeps corporate initiatives and goals top of mind".
"Lets you know when the project focus doesn't connect on a corporate level."
"Liked the comparison between project and corporate objectives/alignment."
Needed improvement:
"Nothing noted."

Figure 5.6.3 – Summary of Workshop, Iteration 4 – Public 2

The overall ratings from Public 2 on the value of the tool including i) participant confidence in the tool and methodology and ii) the likelihood of using it again scored relatively high (out of 5): 5-3, 5-4, 4-4 and 4-4 respectively for these questions.

Validation Workshop Evaluation: Iteration 4 – NFP 1
Worked well:
"The tool allowed us to break down the different criteria into component parts to foster achievement of objectives"
"It forces dialogue and commitment of common, measureable goals."
"I really like the visual representation."
"I think it should be done at the front end of all projects – very effective."
Needed improvement:
"I think the tool is great as is."
"There is a significant time commitment required to properly develop and populate the tool that needs to be considered."

Figure 5.6.4 – Summary of Workshop, Iteration 4 – NFP 1

The overall ratings from NFP 1 on the value of the tool including i) participant confidence in the tool and methodology and ii) the likelihood of using it again scored very high (out of 5): 5-5, 5-5, 5-4 respectively for these questions.

5.6.4 Researcher Evaluation

At the conclusion of "Validation" - Iteration 4, it became evident that the tool and methodology had uniformly been well-received and valued by all participant organizations. There were no further suggestions for improvement to the final version of the tool.

As a result of the work with these six organizations, a refined, robust tool and methodology was developed that permitted project "communities" to effectively define and prioritize objectives and assess a project's ability to satisfy these objectives – and its likelihood for viability and a successful outcome.

5.7 The Effectiveness of the *Feasibility Formula*™

Chapter 5 has thus far addressed Research Objective 4: *to test and refine the Feasibility Formula™ methodology and tool.* This section will now focus on Objectives 5 and 6: *to measure the effectiveness of the tool* and *to evaluate its effectiveness in different project types.*

5.7.1 Effectiveness of the tool and methodology

The process of identifying and prioritizing organizational objectives in the first exercise, and the consideration of the project's ability to satisfy these objectives in the second exercise, required significant engagement of the participating stakeholders. The vast majority of participants had not been exposed to a feasibility tool previously, and the following benefits had been cited relative to its effectiveness:

- Fosters necessary consensus building among participants
- Expectations of stakeholders are better understood
- Knowledge gained re insight into other functional areas, challenges and opportunities within the organization

- Instils a high level of collaboration among participants
- Consideration of organizational objectives brings clarity and focus
- Nurtures a stronger familiarization of "what's most important" to the organization
- Affords multiple perspectives from the participant stakeholders
- Introduces consideration for a project's alignment with an organization's objectives
- Provides for substantial dissection of the project at a very detailed level
- Permits reflection on extended impact of project under consideration and other related projects
- Provides a learning experience through participation

The effectiveness of the methodology was further measured through evaluations completed by the participants of the six cases at the conclusion of each workshop, for a total of 24 formal evaluations. The two key questions that sought direct responses to the effectiveness of the *Feasibility Formula*™ were Question 5 – rating a participant's confidence in the methodology and tool and Question 6 – rating the likelihood of the participant using the *Feasibility Formula*™ again. The results of the responses, shown in Figure 5.7.0 and 5.7.1 below indicate that respondents were generally very confident in the tool and methodology, and that the majority would likely use it again.

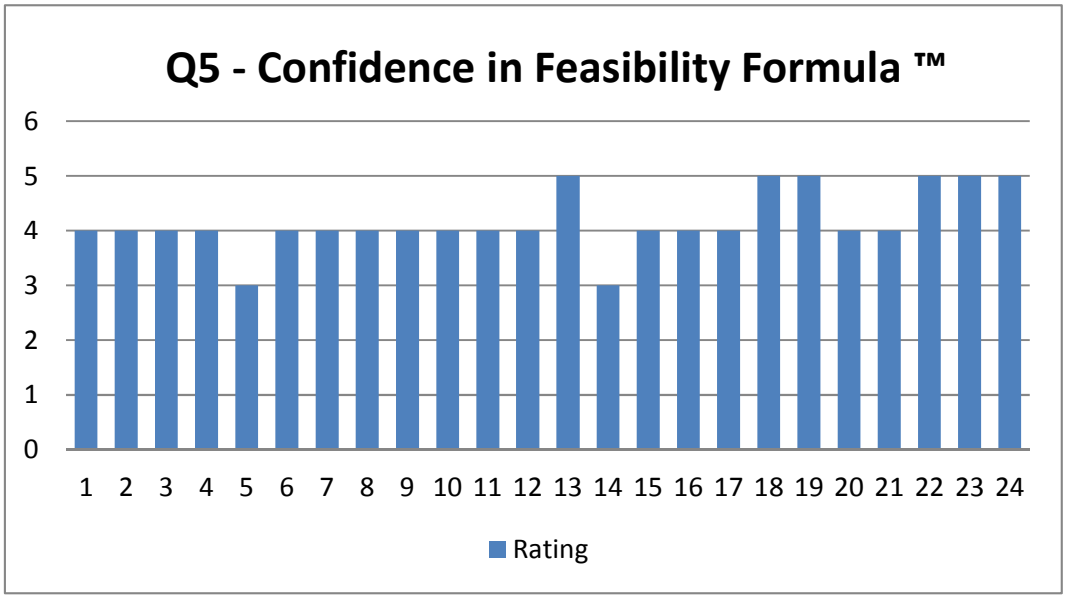


Figure 5.7.0 – Responses to Q5 – confidence in using the Feasibility Formula™

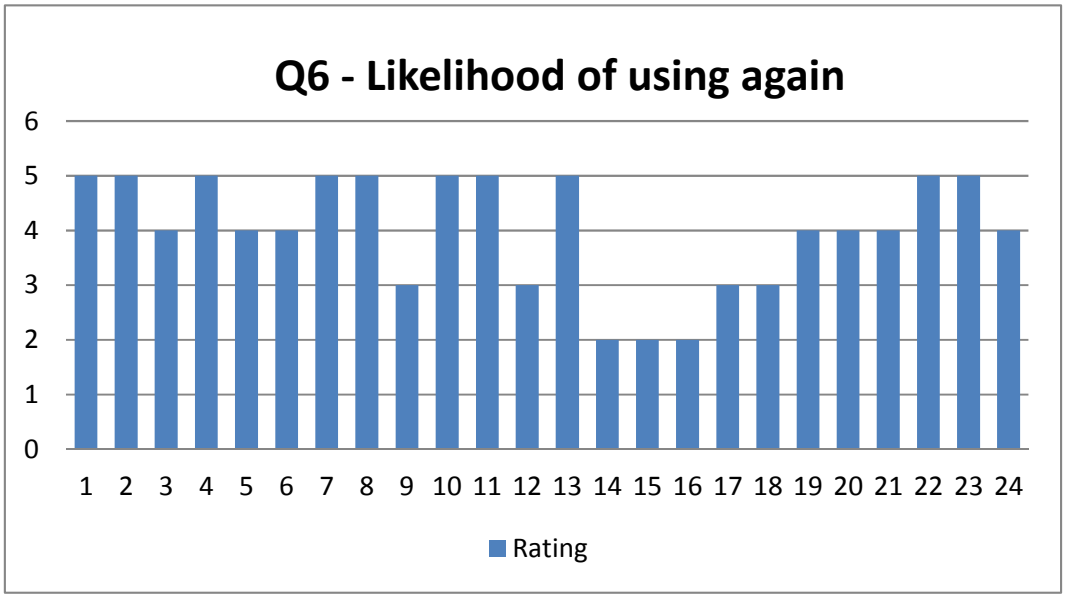


Figure 5.7.1 – Responses to Q6 – likelihood of using the Feasibility Formula™ again

The consistent lower scores (all a score of 3) from one organization (Public 1) for the likelihood of using the tool and methodology again were qualified by participants since the organization had an existing tool that the participants were required to use, despite seeing the value in the *Feasibility Formula*™.

It was clear for the researcher upon examination of the evaluations that the participant views of the *Feasibility Formula*™ specified the effectiveness of the tool and methodology in decision making in support of project success.

5.7.2 Effectiveness of the software

The *Feasibility Formula*™ tool was created in Microsoft Excel and consisted of 12 worksheets (11 worksheets and 1 master worksheet). There was one worksheet for each of the 11 elements to be assessed and scored, and one master worksheet on which the aggregate data appeared along with a visual representation of the outcome. Each of the worksheets, except the master one, allowed participants to enter text (objectives) and numerical data (ratings). The spreadsheet would perform all of the required calculations to produce the aggregate results. If stakeholders chose fewer objectives to populate, then the formula would need to be manipulated manually to capture only the number of line items selected and reflect an accurate score.

Feedback to the software was generally positive. Participants widely commented that the benefit was in the structure provided by the software to capture both qualitative elements through text and quantitative data through the numerical scoring. The software was uniformly regarded as necessary to support the methodology.

5.7.3 Effectiveness by project type

Of the six participating organizations, the projects identified were: one IT, two accommodation, and 3 business projects (marketing, business development and real estate strategy).

Five of the six organizations had not used a project feasibility assessment tool previously in support of decision making. Further, there was a definite absence of either identifying or considering organizational objectives as part of a project selection process, regardless of project type. Given the researcher's experience in project management environments, this was not a revelation, but rather the premise of the opportunity to assist organizations in this regard.

The eleven elements were selected intentionally so as to be applicable across all organizations, industry and project types. This was further established during the iterative refinement phase. Interestingly, it was only Public 1 that commented that public sector organizations may require adjustments to the language and/or renaming in order to deal with public sensitivities. One example was the suggested renaming of the element "political" given the nature of their environment.

Irrespective of project type, there were widespread similarities captured for the tool and methodology regarding: the enthusiasm displayed; feedback and suggestions for improvement; its applicability to the identified organization, selected project and its stakeholders; its usefulness and cited benefits; and resulting value. The summary of the evaluations in section 5.7.1 supports this finding.

5.8 Action Research Findings

Using Schmuck's (2009) action research criteria, Table 5.8 below shows the extent that each criteria was met by the research undertaken with the organizations and their specified projects:

Table 5.8 – Action Research Findings

Action Research Criteria*	**Private 1** Marketing	**Private 2** Accommodation	**Private 3** Business Development	**Public 1** IT	**Public 2** Accommodation	**NFP 1** Real Estate
Provides intervention(s) for continuous improvement	√ Re-examining approach to organization's overall marketing campaign identification & selection	√ New process adjustments to include PMO recommendation to stop, hold or "kill" future projects	√ Seeking inclusion of necessary & identified broader stakeholder audience for workshops in support of process & outcome improvement	√ Now conducting project assessments portfolio-wide	√ New consideration for application of tool to provide improvement in prioritization of projects	√ Recognize need to pay heightened attention to specific organizational objectives and secure advocacy from Board
Seeks to foster development and planned change	√ New, structured approach adopted to establish metrics and review likelihood of success	√ PMO reviewing content of existing business cases to include new material from the *Feasibility Formula*™	√ Tool and methodology to be applied to all future capture initiatives	√ Committed to give further specialized attention to organizational risk and financial outcomes	√ Implement methodology in the regions going forward to ensure corporate alignment and standards applied	√ Resulting thoughtful consideration of alternatives & impact if project undertaken

Aims to collect trustworthy data on the multiple perspectives of individuals and groups	√ Satisfied by participant workshop and exercises, and case study data collection	√ Satisfied by participant workshop and exercises, and case study data collection	√ Satisfied by participant workshop and exercises, and case study data collection	√ Satisfied by participant workshop and exercises, and case study data collection	√ Satisfied by participant workshop and exercises, and case study data collection	√ Satisfied by participant workshop and exercises, and case study data collection
Focuses on local change and improvement	√ Strengthening corporate resource function (talent, structure) to better support local regions	√ New governance structure introduced to expedite decision making in support of projects	√ Standardization of review team roles & responsibilities to ensure consistent approach to all initiatives	√ Ensuring technical & functional authorities present for all project reviews	√ Raises awareness for local management and expedites project decision making	√ Project alignment & resulting implementation fosters expected, desired cultural shift

**Schmuck (2009)*

Fundamentally, the majority of participants identified the strong likelihood of using the *Feasibility Formula*™ again, and the findings from the action research, as illustrated above, further supports this view. Based on outcomes of the action research, it became evident to the researcher that the criteria of improvement, development, perspectives and local change would be satisfied.

5.9 Establishing Credibility

Establishing credibility of the *Feasibility Formula*™ and validation of the outcomes of the workshops was an important consideration for the research. This was substantiated in a few ways:

i) Explicitly communicating the incorporation of suggested improvements to the tool and methodology to (benefitting) participants in subsequent workshops.

ii) Sharing examples of opportunities, challenges and feedback from and between the different organizations during workshops, ensuring confidentiality was maintained at all times.

iii) Maximizing its usefulness and applicability by performing a challenge function as facilitator, providing suggestions to the participants re choices for what they are populating in the tool and how it may be optimized.

iv) Providing a final presentation to the organizations' sponsors regarding the findings of the research.

v) Actively supporting organizations that expressed a desire to work further with the tool and methodology, and make recommendations for its application, adoption and incorporation into project initiation and planning processes.

vi) Presenting the methodology and tool, and research results, to colleagues and practitioners in the project management field to solicit feedback and obtain validation.

One of the veritable signs of the credibility of the tool occurred when I started to receive requests from organizations, both solicited and unsolicited, to conduct one or more workshops, resulting in the commercial use of the *Feasibility Formula*™ tool and methodology.

5.10 Summary of the Chapter

This chapter has provided a detailed description of the iterative methodology refinement process and action research. It has addressed the research objectives of testing and refining the tool and methodology, measuring its effectiveness and evaluating its effectiveness in different project types.

The research environment is described and the six case organizations and their projects depicted. The refinement strategy is presented including the phases of i) pilot, ii) continuous improvement, and iii) validation. It takes four iterations to successfully refine the tool to a point where no further suggestions for improvement are made or incorporated.

Finally, participant evaluations are assessed and presented, indicating a strong likelihood of future use of the tool. The action research findings are also described and indicate that the research meets the criteria as defined.

The content of this chapter conveys to the researcher that the greatest perceived value of the *Feasibility Formula*™ tool and methodology for participant organizations is its ability to generate meaningful discussion and a resulting prioritized list of objectives that would permit the determination of organization and project alignment – and resulting likelihood for project success.

6. CASE STUDIES

Chapter 6 will provide the case studies and a synopsis of the qualitative data amassed from the research within five Canadian organizations. The case study descriptions for the participant organizations and their identified projects will be presented in the same order as the iterative methodology refinement and action research:

Project of Iteration 1 – Pilot: Private 1 – National Marketing Campaign

Projects of Iteration 2 & 3 – Continuous Improvement: Private 2 – National Rebranding Accommodation Project; Private 3 – International Capture Centre Initiative; Public 1 – Enterprise Portfolio System

Projects of Iteration 4 – Validation: Public 2 – Regional Office Accommodation; NFP 1 – Real Estate Strategy

6.1 Introduction

The objective of this chapter, and the case study methodology, is to validate the research objectives and answer the research questions related to i) measuring the effectiveness of the tool and methodology and ii) the willingness and capability of the project manager and/or project team to use the *Feasibility Formula*™.

The cases are presented in a consistent manner:

- Description of the organization
  - Overview of the organization and project
  - Making contact and gaining access
  - Structure of the organization
  - Culture
- Description of the project
  - Project typology
  - Objectives and drivers
  - Lifecycle
  - Project organization
  - Roles of sponsor, project manager and project team
  - Decision making
  - Results of completed *Feasibility Formula*™
  - Effectiveness of the tool and methodology
  - Willingness and capability of the project manager and/or project team in using the *Feasibility Formula*™

6.1.1 Data Gathering

This research recognizes the project as the unit of analysis, however the primary focus of the study is on the organization's practice of pre-project feasibility determination, or its absence. The case studies focus narrowly on these specific aspects of organizational behavior (e.g. use of pre-

project feasibility determination and decision-making tools). There is an element of individual behavior when we examine project manager's willingness and capability to use the *Feasibility Formula*™ tool and methodology. Further, the case studies are instrumental in nature and are designed to provide insights into the issue of pre-project feasibility determination.

Well-known case study researchers such as Stake, Berg and Yin have written extensively about case study research and have suggested techniques for organizing and conducting research successfully. A key strength of the case study method involves using multiple sources and techniques in the data gathering process.

Data gathering for each of the case studies included, but was not limited to:

Project briefs
Project documentation
Personal communication documents (emails)
Agendas and minutes
Website review
News releases
Policy documents
Organization documents
Formal and informal interviews (facts, opinions, insights)
Interview participant surveys
Observation
Researcher journal notes

A further description of the data management techniques employed for this research including the storage, classification and retrieval of these items is described previously in Chapter 4.

6.2 Overview of Case Studies

An overview of the case studies is presented below in Table 6.2 and summarizes characteristics of each organization, project and team:

Table 6.2 – Summary of cases

Case	Type of Organization	Organization Maturity Level*	Project Organization	Background of PM/Team	Project Type
Private 1 - National Marketing Campaign	Private sector (national) – Project Management	Growth	Project Manager is also Functional Subject Matter Expert	PM has little project management experience	Simple; High novelty, moderate complexity

Case	Type of Organization	Organization Maturity Level*	Project Organization	Background of PM/Team	Project Type
Private 2 - National Rebranding Accommodation Project	Private sector (national) – Wealth Management/Financial Services	Mature	Sophisticated project organization with dedicated Program Management Office (PMO)	Assigned PM has significant experience yet implementation team does not	Typical to complex; High pace; moderate technology, novelty; high technology
Private 3 - International Capture Centre Initiative	Private sector (national) – Defense Contracting	Mature	Robust team of "independent" PMs siloed from the functional areas	PM has substantial experience but looking for considerable guidance from Project Lead	Complex; High complexity and pace; moderate technology, low novelty
Public 1 - Enterprise Portfolio System	Public sector (federal/national) – IT Service Provider	Incubation	Dedicated PM as part of PM Centre of Excellence (COE)	Highly experience PM working in strong PM environment	Complex; High complexity/ technology, moderate to high pace, low novelty
Public 2 – Regional Office Accommodation	Public sector (federal/national) – Export Development	Mature	Subject Matter Expert (SME) in Facilities is assigned as Project Manager	Assigned PM has significant experience in facilities projects implementation; uncredentialed in formal PM	Typical; Low pace & complexity, low-medium novelty & technology
NFP 1 - Real Estate Strategy	Not-For-Profit (national) – National Medical Association	Mature	No project organization exists	No internal PM capabilities; outsourced PM expertise	Complex; High complexity and novelty, moderate to high technology and pace

**based on organizational lifecycle of Incubation, Growth, Maturity, Decline (Dickel, Mason, Rowe, 1982)*

6.3 Case Study Description: Project of Iteration 1 – Pilot: Private 1 – National Marketing Campaign

Private 1 is a privately held Canadian project management services company and is part of an international commercial real estate services organization. It specializes in project consulting for large capital construction and infrastructure projects through a national employee base of 300+ project managers.

The project is a marketing campaign targeting the acquisition of new national accounts for the firm. Characteristics of the campaign had previously been defined including its format (i.e. a novel video campaign prototype), targeted audience (Corporate Office prospective clients), logistics of its distribution, and performance measurement. The organization was contemplating a series of marketing campaigns targeting a variety of industry sectors based on the outcome of this first project.

6.3.1 Making contact and gaining access

Looking to include a project management firm within the organizations selected for the research, it became evident to the researcher that this organization would likely be a strong pilot candidate given its familiarity with project management environments and existing knowledge of project management processes and methodologies.

I first approached the Director of Marketing in early March 2014 to request participation in the research, namely the workshop and case study, and while there was some initial apprehension (due to initial perceived inapplicability of a marketing project), she agreed to participate, along with members of her team. Further, the interest and participation of the Director's supervisor, the Vice President of Development, was secured as she expressed that the research could be beneficial to their decision making process and project selection. Within one week, we were fully engaged in the research process.

6.3.2 Structure of the organization

In Private 1, a matrix organization was in place that reflected a flat, rather than a traditional, hierarchical, organization. There were only four levels for the entire organization: Executive, Director/Principal, Project Manager, and Administration. This facilitated ease and nimbleness in decision making.

6.3.3 Culture

The culture of the organization reflects an entrepreneurial environment where autonomy and creatively is supported, however there is a dichotomy present with stringent internal systems and quality management processes, particularly in support of its ISO 9001 certification.

Further, Private 1 has established a learning environment where continuing education is a requirement of all staff. Credentials, both their achievement and maintenance, is seen as an imperative for employees.

6.4 Project Description

The marketing campaign is targeting the acquisition of new national accounts for the firm. The target audience had been selected from a corporate database and industry lists of organizations considered to be top prospects given the size of their facility and/or real estate portfolio, which would signal the likely degree of project management services required.

A script was written, including a complimentary client offer for the CEO to record on video in a professional studio. The video card would then be direct mailed to a key contact at the target organization, with the CEO's video playing automatically upon opening of the card. It was anticipated that the idea was so novel that it would pique the target's interest and yield a "call to action".

6.4.1 Project Typology

When reviewing the projects identified for the case studies, it was important to examine project typologies in order to enable characterization of the projects using specific categories. This would enhance the fullness of the description of the case studies, but also permit the researcher to discover the effectiveness of the *Feasibility Formula*™ among various project typologies.

A simple typology model is to consider characteristics of cost, duration, complexity and risk, as illustrated below:

Table 6.4.0 – Project typology example

Type	Cost	Duration	Complexity	Risk
Complex	>$5M	>18 months	High	High
Typical	$1M	18 months	Medium	Medium
	$500K	9-12 months	Low	Low
Simple	< $500K	< 9 months	Very Low	Very Low

Source: Colin Lindsay

A common theme of project failure, according to Shenhar and Dvir (2007), is that executives and project teams fail to appreciate up front the extent of complexity and uncertainty involved in undertaking the project – or failed to communicate the extent to each other. Further, the researchers posed several critical questions, including "Can we help project teams make the right assessment before presenting their project proposals to top management?" and "Can we show executives how to ask the right questions and foresee danger before they make a commitment to a project and before it is too late?"

The *Feasibility Formula*™ methodology and tool supports executive teams in this regard and facilitates their ability to identify, communicate, understand, and address the complex and uncertain aspects of the project in an organizational context.

Following is Shenhar and Dvir's *Diamond Model* representing a project typology that can be used to assist an organization in planning for project success:

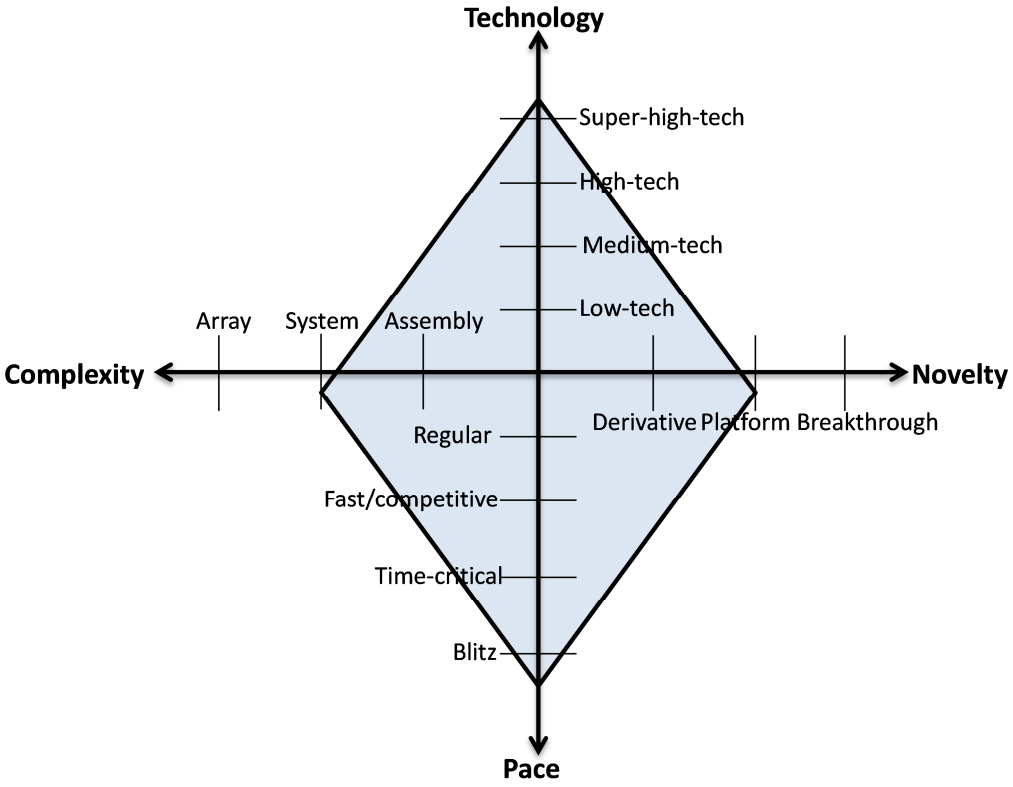


Figure 6.4.1 – The Diamond Model (Shenhar, Dvir, 2007)

The model considers the project from multiple dimensions: Novelty, Complexity, Technology and Pace (NCTP) as illustrated above, and as captured by numerous stakeholders, such as executives, managers, teams and customers. The model assumes that the project leader is responsible for achieving all the metrics of project success.

The Novelty dimension is related to product and service novelty - from the improvement of existing to the introduction of new ones. Complexity is related to a project's scope – its size, scale and interdependencies. Pace refers to the combination of timeline and urgency, and the aspects of project outcomes associated with time. Technology is characterized as a level of uncertainty, especially the more novel or complex the project. Each of these dimensions are assessed not only in isolation, but more importantly in combination for an integrated view of potential project impact and to permit the identification of the optimum project team and structure to support project success.

For Private 1, the marketing campaign project is illustrated below using Shenhar and Dvir's model:

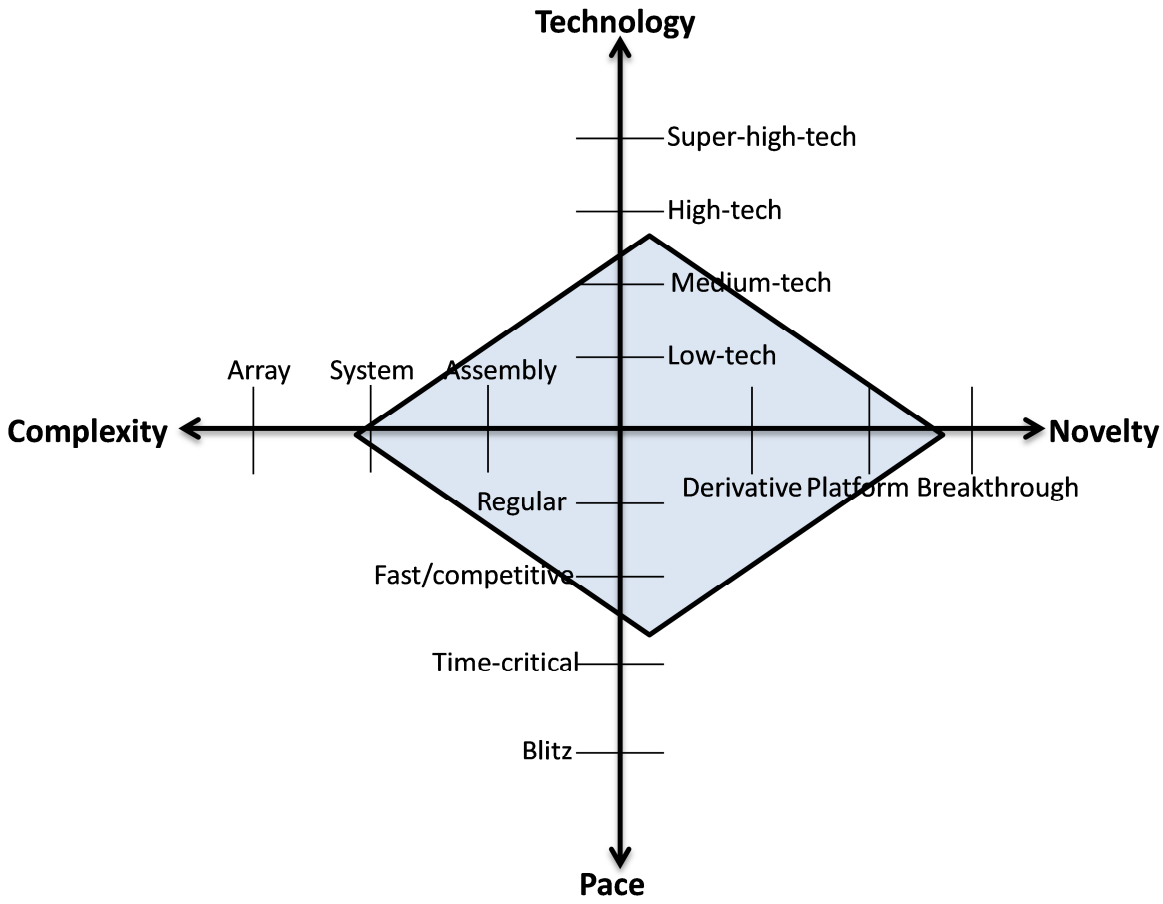


Figure 6.4.2 – The Diamond Model for Private 1 (based on Shenhar, Dvir, 2007)

The model suggests that the marketing campaign represents moderate complexity and technology requirements, a competitive but not critical pace, and rates much higher in novelty.

6.4.2 Objectives and Drivers

Historically, there had been only nominal marketing funds earmarked for external campaigns and an informal approach to their development, approval and distribution. As one might imagine, results from previous marketing projects were considered largely unsuccessful.

In 2013, a new Director of Marketing was hired and brought with her many years of experience in developing and directing significant campaigns, and managing the resources necessary to achieve the desired outcome.

A primary driver of the project was for the Development Team (of which Marketing was a function) to demonstrate its ability to the organization to successfully develop and implement marketing projects that are aligned to the organization. The objective of the project was to be able to evidence favourable response metrics on the campaign.

6.4.3 Lifecycle

The marketing campaign project was moving from an early definition stage to finalizing its pre-project planning as the marketing department was contemplating the implementation of a series of campaigns targeted at various industry sectors.

6.5 Project Organization

The project organization consisted of an extended team that included the CEO as primary decision maker and "talent", the VP of Development as the executive role, the Director of Marketing and Communications as the functional lead and subject matter expert, as well as sponsor for the research, the Marketing Coordinator, and the Communications Manager who was assigned as the Project Manager for the project.

6.5.1 Roles of Sponsor, Project Manager, Project Team

The sponsor for the project was the Director of Marketing and Communications who had responsibility for the Marketing team and the subject marketing campaign project. The Director was very "hands on" and played an active role leading the project and the team to develop, plan and internally "sell" the campaign to senior executives.

The Project Manager was a subject matter expert (SME) in Communications and had taken on the role of planning and executing the project. This included the database mining and establishing targets, coordinating the script and video requirements, managing the "talent" and production of the material. This individual was not, however, an experienced, trained or credentialed Project Manager, but rather an SME who was tasked with managing the project. He was nonetheless familiar with the requirement of engaging stakeholders as a key input to project success.

The Project Team as a whole was experienced in developing and launching marketing campaigns, and several members had been working with each other for two or more years. Further, the executive members of the team were all credentialed project managers (Project Management Professionals), and most familiar with the project environment and activities.

6.6 Decision Making

6.6.1 Project decision making within the organization

Historically, decisions related to internal projects for Private 1 were made by either the CEO directly, or by a member(s) of the Executive team. Pre-project feasibility determination was informal, although it was perceived that relevant factors were considered in determining the go/no-go of the project.

There was a recent example of a project for a financial system (called Dynamix AX, or "DAX") where the Executive made the decision to invest in the software. It became evident, however,

with many false starts and issues surrounding this corporate IT project - and an eventual implementation that took one year longer than estimated - that no “formal” process was in place to align the project with organizational objectives where necessary (i.e. specifically Risk, Organizational Maturity and Human Resources) which would have permitted the identification and necessary mitigation of issues up front and a greater likelihood of project success.

In summary, Private 1 did not have a formal process in place, nor possess a tool and methodology by which to assess a project up front as to its alignment with organizational goals and its likelihood of success. Therefore, the decision making was not formally facilitated.

6.6.2 Results of Feasibility Formula™

The *Feasibility Formula*™ for the marketing campaign project yielded a favourable result with a score of 9/10, as illustrated below in Figure 6.6.2.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria	Description	Rating of Importance										Project Criteria	Satisfies Criteria									Aggregate Score
	"What Matters"		1	2	3	4	5	6	7	8	9	10	"What Matters Most"	1	2	3	4	5	6	7	8	9	10	"Extent that criteria satisfies what matters most"	
1	**Strategic Alignment**	Project meets organizational strategy and objectives.								8			Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).								8			**8**
2	**Risk**	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.								8			Risk Assessment outcome considered satisfactory based on risk mitigation measures.							7				**8**
3	**Financial**	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.									9		Satisfactory outcome of financial feasibility review.									9		**9**
4	**Stakeholder Satisfaction**	Project outcome to meet stakeholder objectives.										10	Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.										10	**10**
5	**Human Resources**	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.										10	Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.								8			**9**
6	**Political**	Project meets political needs and satisfies the decision maker.							7				Outcome of political scan demonstrates project's ability to meet political needs.							7				**7**
7	**Brand**	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.									9		Favourable review of project alignment to corporate image and branding strategy.									9		**9**
8	**Organizational Maturity**	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.									9		Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.							7				**8**
9	**Policy or Strategic Benefits**	Project outcome influences organizational policy and/or strategy.				4							Satisfactory review of project support of and alignment with new or current policies.									9		**6**
10	**Compliance**	Project complies with regulatory and legal requirements.										10	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.										10	**10**
11	**Ethical**	Project satisfies ethical considerations.										10	Favourable review of project alignment with ethical standards, practices and policies of the organization.										10	**10**
																						TL Score		**9**

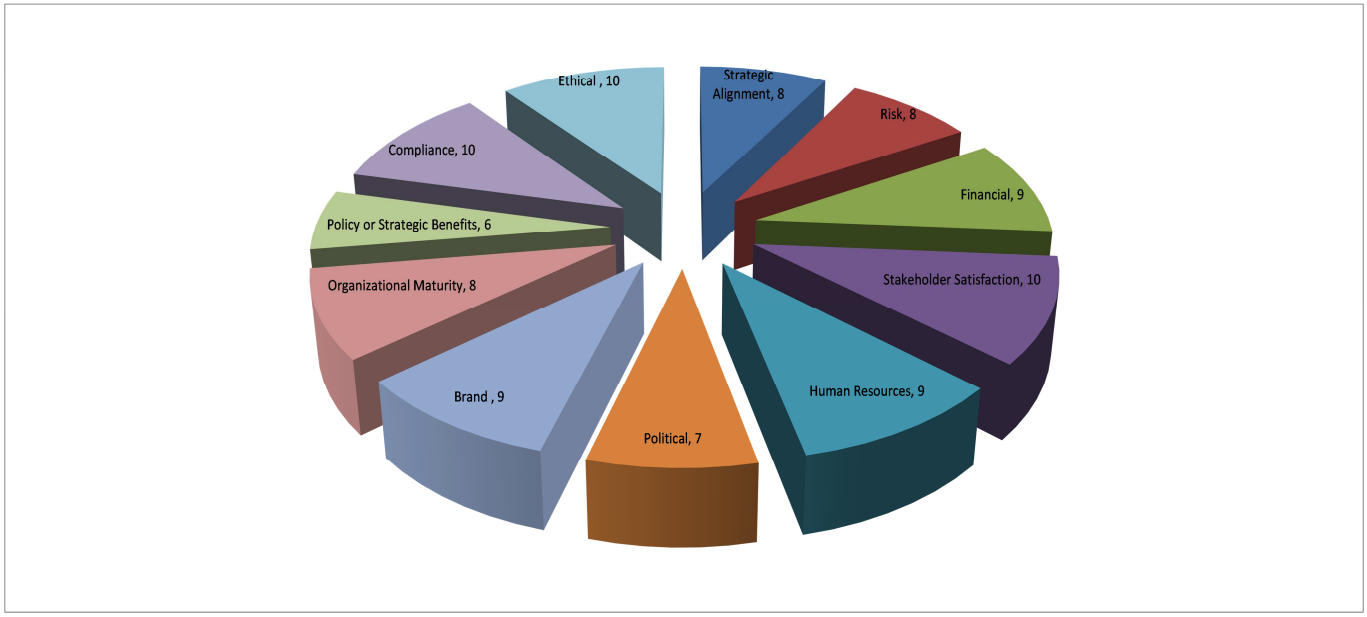


Figure 6.6.2 – Private 1 - Feasibility Formula™ results

The low rating of importance for Policy or Strategic Benefits was discarded, as this element was considered inconsequential to the organization, as assessed by the participant stakeholders.

The project team determined that the overall result indicated the organization's ability to move forward with the project, however, to be aware and re-visit the aspects of Risk, given the assessment below specific to the Risk Worksheet and discussion:

Risk Worksheet

	Organizational Risks	Rating of Importance "What Matters Most"										Level of Risk Mitigation "Extent that risks that matter most can be mitigated*"										Aggregate Score
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	
1	Resourcing in Marketing to put together campaign	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	10
2	Resourcing in BD to follow-up and convert to sale	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	☐	☐	☐	☑ 4	☐	☐	☐	☐	☐	☐	8
3	Reputational risk of message incl. quality	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	☐	☐	☐	☐	☐	☑ 6	☐	☐	☐	☐	8
4	Lack of attention from Sr. Management	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	☐	☐	☐	☐	☐	☑ 6	☐	☐	☐	☐	7
5	Availability of subject matter expertise	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	8
6	Demonstratable success/precedent	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	☐	☐	☑ 3	☐	☐	☐	☐	☐	☐	☐	6
7	Effective internal communication plan	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	8
	Total	8										7										**8**

Figure 6.6.3 – Private 1 – Risk Worksheet

The two major areas of concern appeared to be risks associated with: Risk #2 - no follow-up from the business development organization; and Risk #6 - there was no precedent for success with marketing campaigns.

6.6.3 Effectiveness of the tool and methodology

The data analysis and evaluation for Private 1 indicates that this organization and its participating members found the *Feasibility Formula*™ tool and methodology to be effective in assessing pre-project feasibility and the likelihood of the project's success within the organization.

A recurring theme from all organizations, including Private 1, was the importance of the *Feasibility Formula*™ in engaging stakeholders in extremely valuable discussions. This was the only organization that presented a project team from a sole functional area (i.e. Marketing), and it was still very interesting to observe the different perspectives that were shared.

Private 1 also shared details of a historic project that was unsuccessful, and highlighted areas within the *Feasibility Formula*™ that would have clearly indicated that the project was not aligned with organizational objectives and the resulting decision would have been "not to proceed", at very least without substantial work on re-alignment of the project.

Beyond engaging in active discussion, participants from Private 1 highlighted other areas of effectiveness to be an ability to set organizational goals once (as long as are applicable) and then use the *Feasibility Formula*™ to assess each project going forward. They also indicated that going forward, a baseline would be established as to what would be considered an acceptable score, to aid in expediting the interpretation and decision making for the project. Further, the participants indicated that the tool fosters the careful assessment and consideration of future participating stakeholders to ensure that narrow views are moderated and that "big picture" perspectives are encouraged.

Private 1 indicated that the *Feasibility Formula*™ would be used in future to further compare projects and prioritize them within the organization.

Given the project typology for Private 1 of "simple" - and "moderate" according to Shenhar and Dvir's model, it is apparent that the *Feasibility Formula*™ is effective for this project classification.

6.6.4 Willingness and capability of the PM/project team in using the Feasibility Formula™

The evaluation of the project manager's willingness and capability in using the *Feasibility Formula*™ tool and methodology concluded in this case, that the project manager was willing to use the *Feasibility Formula*™ for future marketing projects. The project manager demonstrated capability (and confidence) in understanding the tool and methodology, and in engaging the necessary project stakeholders. However, the project manager did indicate a need to a) receive training to properly follow the methodology, and b) to develop his facilitation skills in order to be fully capable in undertaking the application of the *Feasibility Formula*™ for it to be most effective.

6.7 Case Study Description: Projects of Iterations 2 and 3 – Continuous Improvement: Private 2 – National Rebranding Accommodation Project

Private 2 is a national wealth management and financial services firm in Canada that manages roughly $30 billion in investment funds through Financial Advisors across 50 regional offices. The staff count is over 1000 employees.

The organization supports a dedicated Program Management Office (PMO) function that centrally manages strategically driven projects. Private 2's project was a National Rebranding Accommodation Project that would introduce a new brand and alternative workplace strategy through the renovation of its 50 offices.

6.7.1 Making contact and gaining access

My first contact with Private 2 was through the provision of consulting services beginning in January, 2013. I was fortunate, through this year long corporate head office project, to come to know several members of the Executive Leadership Team (ELT). One member was the Executive Vice President (EVP) of Information Technology. I had "planted the seed" regarding my research in late 2013 and subsequently followed up with the EVP in early 2014. He was happy to support my research as the sponsor, and further put me in touch with the Assistant Vice President of the Program Management Office to make the necessary arrangements for the case study.

6.7.2 Structure of the organization

Private 2, a long standing and mature organization, maintained a traditional, hierarchical structure. There were multiple levels to the organization, both within its head office and regional reporting structures. While one might postulate that this type of structure - across an organization with over 1000 employees – would generate a high level of bureaucracy and inhibit speed of decision making, this organization was unexpectedly quite the opposite: the firm was nimble and regularly complex (and expensive!) decisions were made very quickly. The project team was empowered to make a significant number of decisions on a wide variety of topics with organizational implications. As required, the program lead would escalate decisions to senior executive(s) as necessary, with the same remarkable response time.

6.7.3 Culture

The culture of the organization is characterized as extremely professional with encouragement of individual and team autonomy to carry out responsibilities. In order to support a variety of project initiatives, the organization had a formal Change Management (CM) team. This underscores the organization's supportive culture where the employee experience is paramount. The underlying belief is that if you take care of the employee experience, they will appropriately support a favourable client experience.

The CM team also provided representation on the project for Private 2 to assist in ensuring its success for the organization's significant employee base.

6.8 Project Description

Private 2's project was a National Rebranding Accommodation Project that would introduce a new brand and alternative workplace strategy through the renovation of its 50 offices.

The project had been contemplated for a couple of years but launch was slow due to vendor issues with more than one branding firm in the development of a national concept, as well as a lack of integration among functional departments that was necessary in order to determine accurate requirements for the comprehensive project. While the national concept was now in hand, and a cross-functional project team in place, there was much to consider on the model for the alternative workplace strategy (AWS) that would see a new way of working introduced to hundreds of employees across the country. Under consideration was a few different options regarding a mobility/flexibility working model for employees and the resulting square footage/ accommodation requirements and its implications to the necessary investment across the portfolio.

6.8.1 Project Typology

The project typology for Private 2 can be characterized along the classification spectrum between Typical and Complex, depending on how the organization chooses to approach the program of work. If the program is carved off into discrete projects, it would likely fall under Typical. If the program is to be executed as one large undertaking, it would be defined as Complex.

The Diamond Model for Private 2 indicates that the project typology is very high on Pace, fairly moderate on Complexity and Novelty, and relatively high on Technology. Indeed, the timeline for the program of work is very aggressive and there are strong technological considerations.

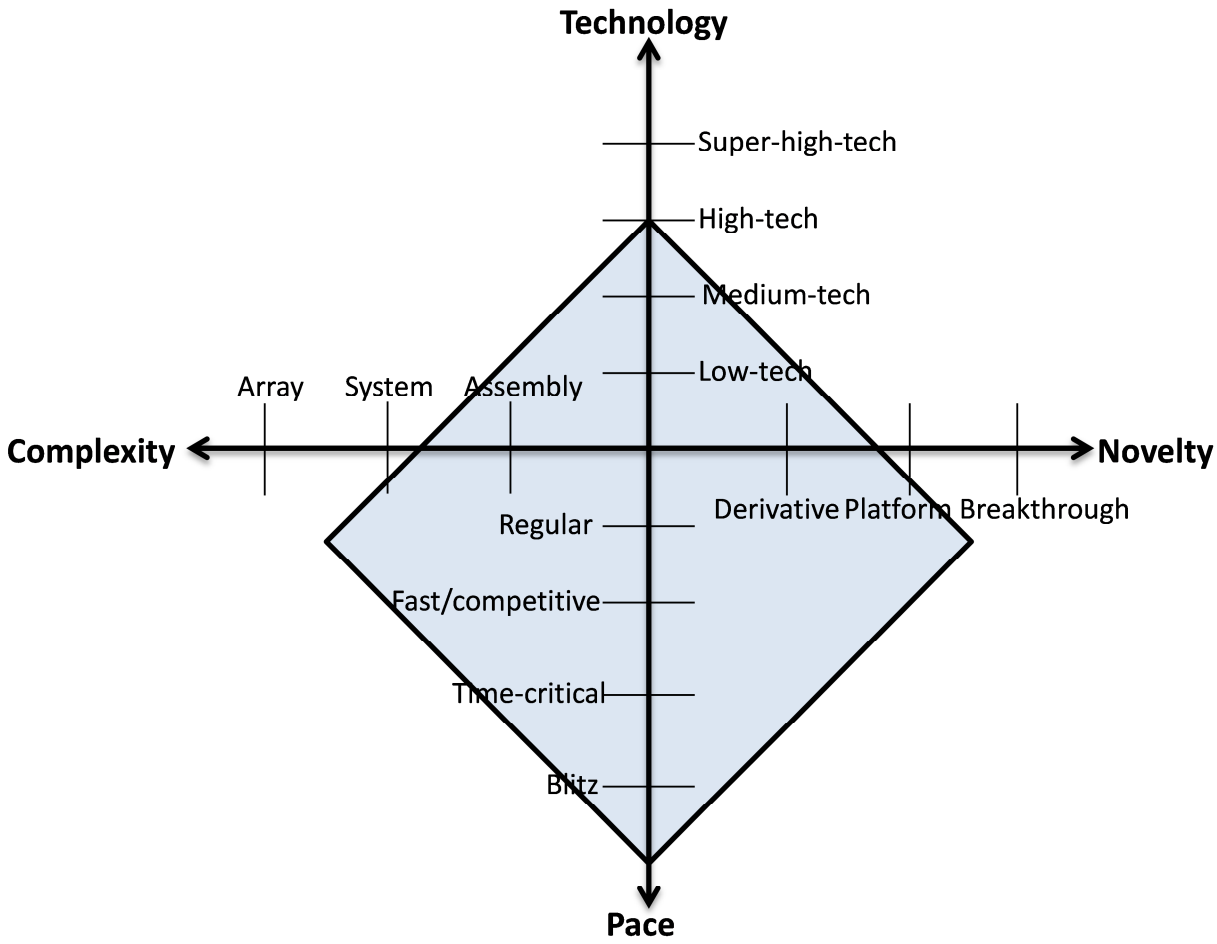


Figure 6.8.1 – The Diamond Model for Private 2 (based on Shenhar, Dvir, 2007)

6.8.2 Objectives and Drivers

The driver for Private 2's project is the organization's need to reinvent itself - its brand and corporate image - in order to differentiate itself in a highly competitive environment. The re-branding encompasses a modification to the organization's name and logo, and the introduction of high technology digital displays in all 50 locations will stream messaging around the new brand to Private 2's clients. The alternative workplace strategy with its new "look and feel" for the space is paramount in supporting this reinvention by providing an enhanced employee and client experience.

6.8.3 Lifecycle

The national re-branding accommodation project was in its infancy within the project lifecycle. It had been loosely defined and a preliminary business case was prepared with basic information that focused on objectives for the program: it was subsequently revisited and rewritten with substantial changes and a multitude of modifications.

6.9 Project Organization

The project organization in Private 2 is substantial. There is a formal Program Management Office (PMO) that centrally manages all "strategic" projects. The PMO implements several gating criteria, such as the need for a project proposal from the sponsor in order to take on projects within the PMO. The PMO looks at business value and business risk in its assessment of the projects, which are cross-functional across the organization, representing technology projects to new client products.

The PMO (Manager, Project Management and Project Manager) played an oversight role for the project at hand, while the assigned Program Lead was the real "driver" of the project. The other team members, consisting of specialists in technology, change management, brand and client experience, assigned to various roles within the project, were highly dedicated, despite having other responsibility areas within their day-to-day operational roles.

6.9.1 Roles of Sponsor, Program Lead, Project Team

The sponsor for the project was the Executive Vice President for Client Experience (different individual from the research sponsor). He was actively engaged in the project and was a key decision maker.

The Program Lead was a highly energetic professional who was most suitable to the role and effective in engaging the team members and soliciting individual contribution to the benefit of the project. He was a long term employee of the organization and was most familiar with the company culture, politics and means of navigating for approvals and support.

The Project Team members, as described in the section above, had recently undertaken a significant corporate head office project, so were familiar with the project environment, and had also had the opportunity to work together as a team previously.

6.10 Decision Making

6.10.1 Project decision making within the organization

Further to the discussion on the structure of Private 2, decision making in the organization was largely decentralized to the functional unit, with approvals required from the Executive when certain financial thresholds were met. Manager and Director level positions had the autonomy to make decisions for their units, and escalate only as required by policy. This decentralization enabled quick decision making which was not previously seen by the researcher in such a large organization.

Decision making around the project was facilitated by the Program Lead. Where decisions could be made by functional or subject matter experts, the Program Lead would disseminate accordingly. Many decisions were taken by him directly. Others that needed to be escalated to superiors would first be quickly "socialized" by him with Executive members as a precursor to

seeking approval. Overall, the decision making process in this large organization was clear and nimble, to the benefit of the project.

As for decision making tools, Private 2's PMO had developed a formal tool that examined a project's ability to satisfy "business value" and "business risk", along with capturing the more typical financial and resource requirements for a project. The PMO members commented that neither their tool nor methodology was as robust or as effective as the *Feasibility Formula*™.

6.10.2 Results of Feasibility Formula™

The *Feasibility Formula*™ for the national re-branding accommodation project produced a score of 8/10, as illustrated below in Figure 6.10.2.

While there was a lower score generated on the Financial element, the team chose to focus in on Strategic Alignment, as the project's ability to satisfy the organization's strategic goals raised some flags through discussion. The specific concerns are highlighted in Figure 6.10.3 and include the project's potential inability to satisfy net operating income goals and profit targets, account performance, and employee satisfaction. Each of these aspects were reviewed further with varying perspectives shared – and heard – to determine what next steps, if any, would need to be undertaken to address these critical and potentially inhibiting factors.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria "What Matters"	Description	Rating of Importance "What Matters Most" 1 2 3 4 5 6 7 8 9 10	Project Criteria	Satisfies Criteria "Extent that criteria satisfies what matters most" 1 2 3 4 5 6 7 8 9 10	Aggregate Score
1	**Strategic Alignment**	Project meets organizational strategy and objectives.	9	Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).	5	**7**
2	**Risk**	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.	8	Risk Assessment outcome considered satisfactory based on risk mitigation measures.	6	**7**
3	**Financial**	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.	7	Satisfactory outcome of financial feasibility review.	2	**5**
4	**Stakeholder Satisfaction**	Project outcome to meet stakeholder objectives.	8	Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.	3	**7**
5	**Human Resources**	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.	8	Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.	5	**7**
6	**Political**	Project meets political needs and satisfies the decision maker.	8	Outcome of political scan demonstrates project's ability to meet political needs.	8	**8**
7	**Brand**	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.	8	Favourable review of project alignment to corporate image and branding strategy.	8	**8**
8	**Organizational Maturity**	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.	9	Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.	6	**8**
9	**Policy or Strategic Benefits**	Project outcome influences organizational policy and/or strategy.	8	Satisfactory review of project support of and alignment with new or current policies.	7	**7**
10	**Compliance**	Project complies with regulatory and legal requirements.	9	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.	9	**9**
11	**Ethical**	Project satisfies ethical considerations.	10	Favourable review of project alignment with ethical standards, practices and policies of the organization.	10	**10**
					TL Score	**8**

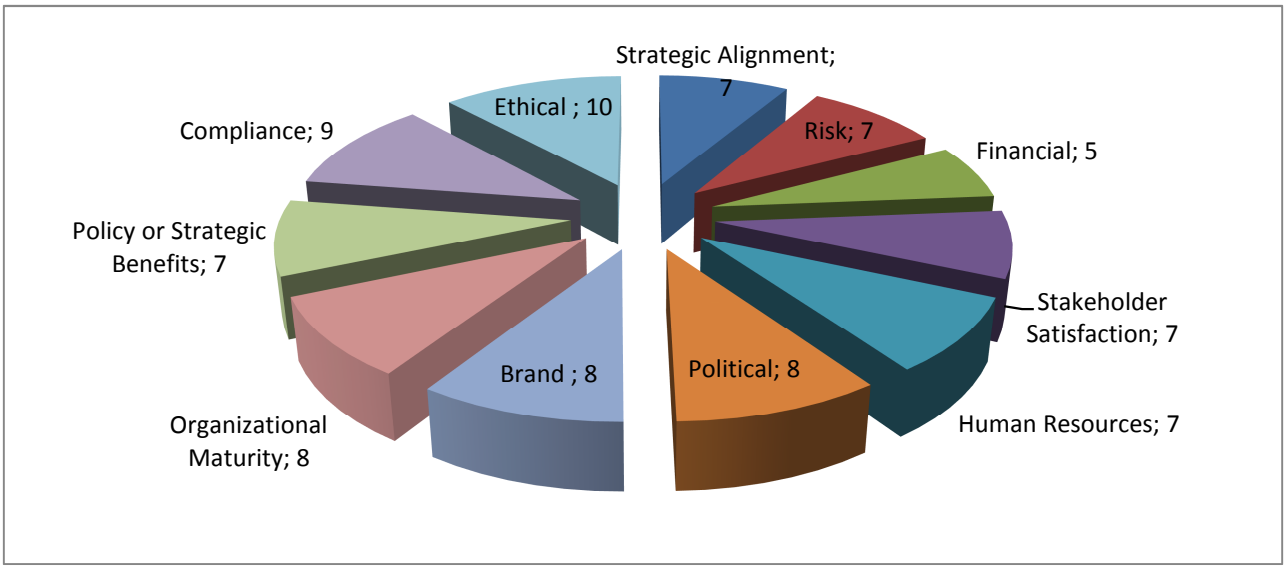


Figure 6.10.2 – Private 2 - Feasibility Formula™ results

Strategic Alignment Worksheet

	Organizational Strategy	Rating of Importance "What Matters Most" 1	2	3	4	5	6	7	8	9	10	Level of Strategic Alignment "Extent that project aligned with what matters most" 1	2	3	4	5	6	7	8	9	10	Aggregate Score
1	Increase in primary clients/new client acquisition	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	9
2	Meet net operating income goals	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	☐	☐	☐	☑ 4	☐	☐	☐	☐	☐	☐	6
3	Employee satisfaction	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	☐	☑ 2	☐	☐	☐	☐	☐	☐	☐	☐	6
4	Client satisfaction + NPS	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	9
5	Profit target achieved	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	☐	☑ 2	☐	☐	☐	☐	☐	☐	☐	☐	6
6	Reputation preserved	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	9
7	Account performance	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	☑ 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	6
	Total	9										5										**7**

Figure 6.10.3 – Private 2 – Strategic Alignment Worksheet

6.10.3 Effectiveness of the tool and methodology

The *Feasibility Formula*™ tool and methodology was found to be highly effective, according to Private 2 participants, in assessing pre-project feasibility and the likelihood of the project's success within the organization.

The data analysis and evaluation from Private 2 indicates that this organization found the greatest value from the discussion generated as well as the tool's ability to highlight areas requiring highest attention, and with the likelihood for solutions to be generated. The participants were keen that the tool was effective in fostering problem solving amongst the group. The interpretation of the score for Private 2, like most participating organizations, was not as important an exercise, compared to verbally addressing areas of potential risk or concern.

Prior to introducing the *Feasibility Formula*™ to Private 2, there was a lack of functional integration across the organization when it came to project planning and implementation. The tool and methodology permitted the opportunity for various individuals, from different functional areas and departments, to get together and provide varying perspectives on the organization's objectives and the project's ability to satisfy them.

Private 2 cited other areas of the methodology and tool's effectiveness to be its ability to provide a quick "kill" decision for a project that is so obviously misaligned with organizational objectives. Further, Private 2 was looking forward to utilizing its effectiveness to compare and contrast projects at the portfolio level: they believed the tool would be effective in helping to prioritize projects among a group of projects under consideration.

In conclusion, the *Feasibility Formula*™ proved effective in this project typology of "typical" to "complex" and exhibiting traits of high technology and pace, as indicated Shenhar and Dvir's Diamond model, as applied to this project for Private 2.

6.10.4 Willingness and capability of the PM/project team in using the Feasibility Formula™

The evaluation of the project manager's willingness and capability in using the *Feasibility Formula*™ tool and methodology was solicited and confirmed by the Program Lead, but was also extended by the researcher to the PMO for Private 2. Given that the formal PMO was in place, the researcher obtained an assessment from the Assistant Vice President of the PMO and the Manager of Project Management to determine if there was both a willingness and capability of its project managers. The willingness was confirmed immediately upon exposure to the tool and methodology. The PMO members also confirmed the capability was present for the vast majority of their project managers. The few exceptions were based on an identified need for these project managers to increase their capability in facilitating stakeholders, as is required to administer the *Feasibility Formula*™.

6.11 Case Study Description: Projects of Iterations 2 and 3 – Continuous Improvement: Private 3 – International Capture Centre Initiative

Private 3 is a substantial defence and aerospace engineering firm that serves government and commercial clients in more than 40 countries via 95,000 employees, with over $30 billion in revenue. The company provides technology based systems and integration support to defence and public security organizations.

The project was an international capture centre initiative (i.e. business development) to increase sales "wins" in domestic and international markets. Up to $10M in discretionary funds was made available for the project in order to pursue other business from across the organization. The company Executive was looking for demonstration of greater return on investment for each discretionary dollar. The project team was to convert traditional execution strategies into the day-to-day operations and focus specifically on new business acquisition.

6.11.1 Making contact and gaining access

I had identified Private 3 as a target organization given its breadth and likelihood for an array of ongoing internal projects. As such, I approached the Director of Business Development, whom I had met on prior occasion, to determine interest. There was some initial hesitation but then the Director considered the current project he was leading and determined there was potential benefit from participating in the research. Within a few weeks, the research within Private 3 was initiated.

6.11.2 Structure of the organization

Private 3 is a mammoth organization with a very traditional hierarchy, representing no fewer than ten levels from the CEO to the line worker. It is highly bureaucratic, which poses significant challenges to the project team (as will be discussed in subsequent sections). There are many

departments and functional areas, which makes integration and cross-pollination difficult within the organization. Further, there is considerable geography given Private 3's international presence. To some extent, the regional offices also operate in a matrix organization given distinct lines of business that serve specific sectors across the geography and a shared expertise that is available for certain disciplines.

6.11.3 Culture

The culture of the organization is bureaucratic and rigid, highly technical and process oriented. Security is of major concern and it is an environment where risk is avoided. Employees, mostly trained professionals, are required to perform to high expectations. Processes are formal throughout the organization, with very specific requirements for documentation and gated approvals. As a result, Private 3 is far from nimble, and much time is required to accomplish programs of work.

6.12 Project Description

The project was an international capture centre initiative under the business development practice to increase sales "wins", i.e. new business and new client acquisition, in domestic and international markets. Up to $10M in discretionary funds was made available for the project.

The project was initiated by Private 3's Executive in order to realize a stronger return on each discretionary dollar. Historically, business development activities, especially the pursuit of Request for Proposal based opportunities, had cost the organization millions of dollars each year. The Executive believed that it was time to revisit pursuit strategies and identified the specific need for a capture centre initiative that would focus on identifying and amassing the resources and protocols necessary to be successful. The Director of Business Development, as Project Lead, was therefore charged with transforming the front end of the business.

6.12.1 Project Typology

The project typology can be considered Complex. The Diamond Model, as shown in Figure 6.12.1 illustrates that this project is very high in Complexity, high in Pace, low to moderate in Novelty and moderate to high in Technology.

The number of resources, span of geography and costs associated with the scope of the project comprise its complexity.

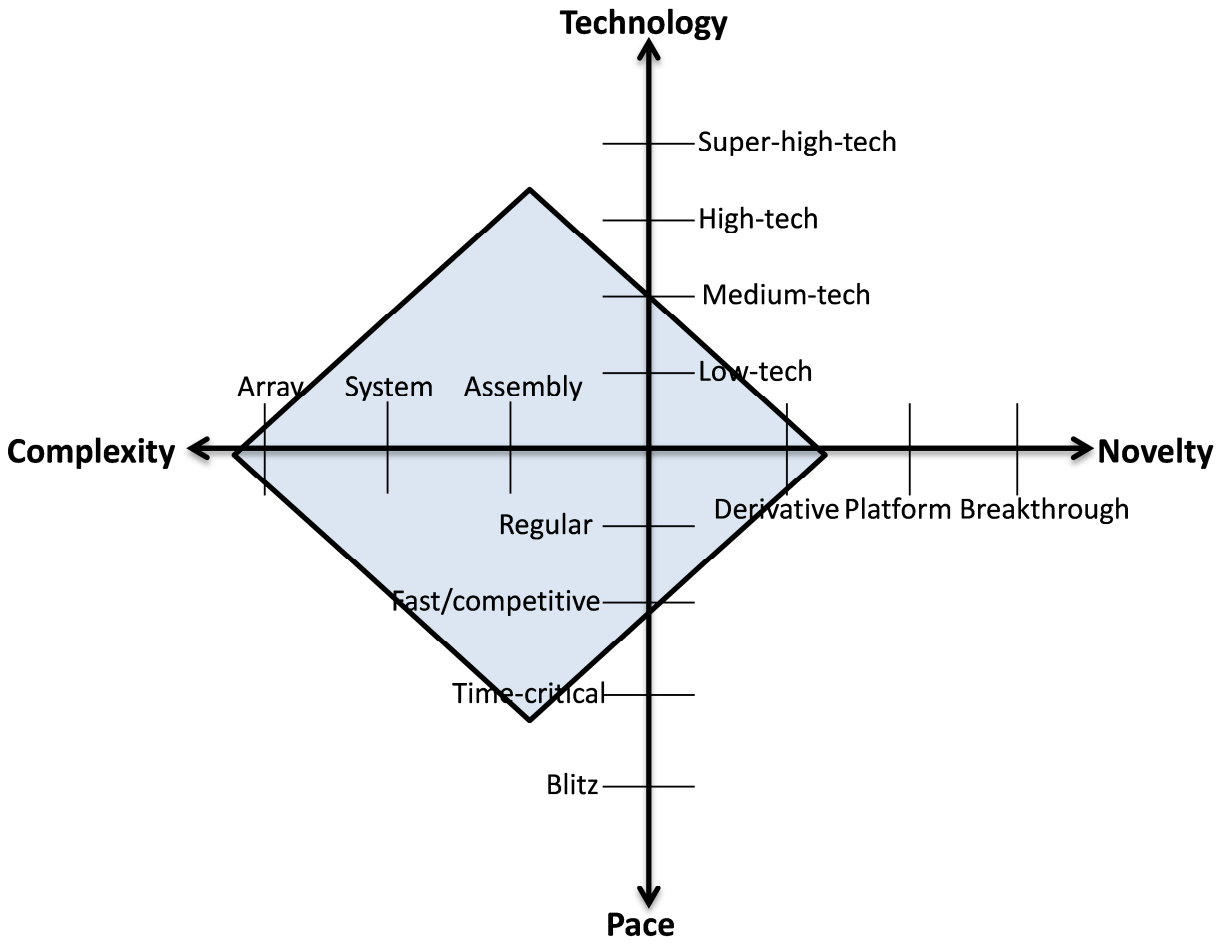


Figure 6.12.1 – The Diamond Model for Private 3 (based on Shenhar, Dvir, 2007)

6.12.2 Objectives and Drivers

The key driver for Private 3's project is to increase its competitiveness. The organization had recently lost several major bids for domestic and international work. As such, objectives for the project included identifying the means by which the organization will be more successful in its business development pursuits, and to equip the new "capture centre" with the resources necessary to execute successfully. Metrics will be identified in order to measure the success of the program and the return on investment that the Executive is seeking.

6.12.3 Lifecycle

The capture centre initiative was in a pre-project stage and about to enter the project lifecycle. The project was in its early definition stage and it was timely for the research to have the project stakeholder group around the table for the first time.

6.13 Project Organization

The project organization is extensive in Private 3. There are 40 project managers in addition to a number of project engineers that support the organization's projects. Project managers are typically at the table to provide a perspective on project risk, costs, delivery/implementation and technology. The organization is very strong on project management processes, tools and training.

This is necessary to support the organization's type of projects that are typically valued in the order of millions of dollars each. According to the research sponsor, the project management organization "mitigates the risk of the company signing up for something that it can't do".

For the capture centre initiative project, a project manager was assigned under the oversight of the Director, Project Management. The roles are detailed below.

6.13.1 Roles of Sponsor, Program Lead, Project Team

The project Sponsor and Lead was the Director of Business Development. He was a long term employee of Private 3 and had the same position for a number of years. The Director had full responsibility and oversight for the capture centre initiative project, including the assembly of his project team. He was most familiar with the company's culture and the opportunities and challenges this presented. Further, he had historic knowledge of previous practice in capture initiatives and was well suited to lead the project that explored new ways of pursuing business.

The Project Team further consisted of the Director, Cyber Practice (technology), Director, Project Management, the Capture Centre Specialist and Project Manager. The team members only reported to the Director as Project Lead and insofar as their duties related to the project. Within this functional organization, each project team member reported to other individuals on an operational level.

The Project Team members had worked together previously on other initiatives so were familiar with each other and the contribution that each individual could make.

6.14 Decision Making

6.14.1 Project decision making within the organization

Decision making in Private 3 was an exercise in bureaucracy. Much documentation was needed to prepare senior management for the pending decision, as well as a period of "socialization" of the request. The go/no-go decisions required in business development, as to whether to pursue an opportunity or not, were painful to solicit and finalize. This was considered a significant impediment to success when pursuing new business, as the time required for approvals eroded the time available to respond to the opportunity in an effective manner.

Decision making around the project was facilitated by the Director of Business Development in his role as Project Lead. The Director would need to move all decisions upward to senior management, following a formal Strategic Business Development Initiative (SBDI) procedure that included documentation around the pursuit itself, a requested bid confirmation, and a Financial Management Review (FMR). Further, there was a Decision Analysis Resolution (DAR) tool, seemingly used on only a few projects that looked at project criteria, weighting and options, for Executive review. As a result of the required documentation and timelines around the specified procedures, decision making was perceived as strongly inhibited. The Director was committed to reviewing this process as part of the capture centre initiative project.

While Private 3 possessed procedures and tools in support of decision making, as indicated above, each appeared to be prepared in isolation and most importantly, without discussion. Documentation was prepared by the business development team, with or without input from other functional areas, and in the absence of dialogue with stakeholders, including the Executive.

According to the Director and Project Team, the *Feasibility Formula*™ provides the "missing link" in that it provides a formal methodology for engaging stakeholders in discussion, ensuring a formal review of the project and its alignment to organizational objectives. As such, it has the ability to expedite the decision making process.

6.14.2 Results of Feasibility Formula™

The *Feasibility Formula*™ for the capture centre initiative project produced a score of 9/10, as illustrated below in Figure 6.14.2.

While the discussion was lively throughout the stakeholder engagement, the elements identified as requiring the greatest amount of attention were Strategic Alignment, Risk, and Policy and Strategic Benefits. It was Strategic Alignment that had the largest swing in weighting between organizational objective and the project's ability to satisfy. In particular, there were concerns around "operational excellence" and "customer acceptance". Further, some of the elements identified as "what matters most" to the organization were actually weighted with low scores (meaning they were less important to Private 3), yet the projects scored higher.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria	Description	Rating of Importance										Project Criteria	Satisfies Criteria										Aggregate Score
	"What Matters"		1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10	
			"What Matters Most"											"Extent that project satisfies what matters most"										
1	Strategic Alignment	Project meets organizational strategy and objectives.							7				Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).							7				7
2	Risk	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.							7				Risk Assessment outcome considered satisfactory based on risk mitigation measures.							7				7
3	Financial	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.										10	Satisfactory outcome of financial feasibility review.								8			9
4	Stakeholder Satisfaction	Project outcome to meet stakeholder objectives.								8			Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.								8			8
5	Human Resources	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.								8			Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.							7				8
6	Political	Project meets political needs and satisfies the decision maker.										10	Outcome of political scan demonstrates project's ability to meet political needs.										10	10
7	Brand	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.									9		Favourable review of project alignment to corporate image and branding strategy.								8			8
8	Organizational Maturity	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.										10	Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.									9		10
9	Policy or Strategic Benefits	Project outcome influences organizational policy and/or strategy.							7				Satisfactory review of project support of and alignment with new or current policies.								8			7
10	Compliance	Project complies with regulatory and legal requirements.										10	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.										10	10
11	Ethical	Project satisfies ethical considerations.										10	Favourable review of project alignment with ethical standards, practices and policies of the organization.										10	10
																						TL Score		9

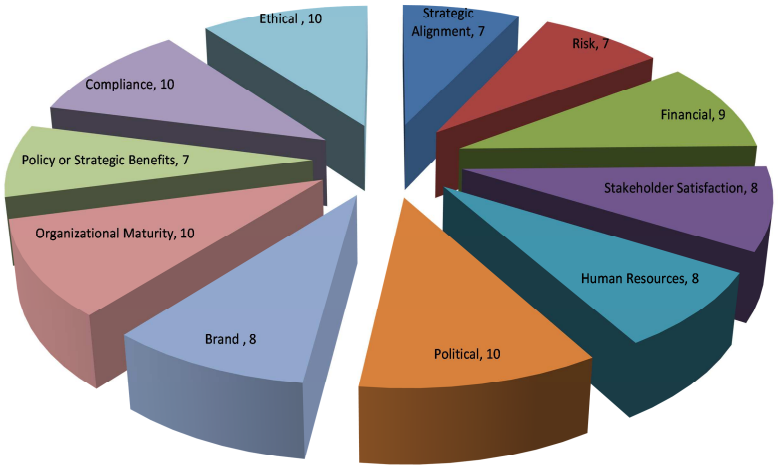


Figure 6.14.2 – Private 3 - Feasibility Formula™ results

Strategic Alignment Worksheet

	Organizational Strategy	Rating of Importance "What Matters Most"										Level of Strategic Alignment "Extent that project aligned with what matters most"										Aggregate Score
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	
1	Increased top line growth	☐	☐	☐	☐	☐	☑ 6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	7
2	Operational excellence	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	☐	☐	☐	☐	☐	☑ 6	☐	☐	☐	☐	9
3	Grow international presence	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	7
4	Clear differentiation in markets	☐	☐	☐	☐	☑ 5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 10	7
5	Engage workforce	☐	☐	☐	☐	☐	☑ 6	☐	☐	☐	☐	☐	☐	☐	☐	☑ 5	☐	☐	☐	☐	☐	6
6	Customer acceptance	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	☐	☐	☐	☐	☑ 5	☐	☐	☐	☐	☐	8
7	Alter perception as "expensive provider"	☐	☐	☐	☐	☑ 5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	6
	Total	7										7										7

Figure 6.14.3 – Private 3 – Strategic Alignment Worksheet

6.14.3 Effectiveness of the tool and methodology

Private 3 participants determined that The *Feasibility Formula*™ tool and methodology was highly effective in engaging stakeholders in critical discussion around a project's alignment with organizational objectives. In using the tool to assess the pre-project feasibility and likelihood of the project's success, it highlighted a number of impediments to the participants that could be considered systemic within the organization.

The data analysis and evaluation from Private 3 shows that the tool provided formality and "structured thinking" around what was important to the organization, and fostered a genuine evaluation of the project's alignment to Private 3's goals. Team members confirmed that the *Feasibility Formula*™ encouraged great discussions and "created amazing dialogue" that had never occurred previously.

Participants commented that previous project assessments were also performed instinctively, and often failed as a result. They were very excited about the new tool and methodology and indicated that it would be used in future also to determine the go/no-go decision for the project.
The Director planned to introduce the *Feasibility Formula*™ to the Executive and demonstrate its effectiveness in order to secure "buy in" that it could be used to provide assessments for business development projects going forward. He proposed that the Executive be engaged to populate the organizational side of the tool just once (in a certain period), so as not to reinvent the wheel, and to know that projects were being assessed against the same criteria each time.

The Director stated that the tool had "incredible value" in its ability to capture the broader objectives, including aspirational goals, and to ask the question: "Does this project do that?". He strongly believed that the *Feasibility Formula*™ gets you to understand the "why" behind why a

project would not be aligned with the organization, and that “it forces you to look at it and be realistic in your ability to address the issues.” The tool and methodology would become Private 3’s “gate process” upfront in their pursuit process and in their assessment of future opportunities.

In conclusion, the *Feasibility Formula*™ proved effective in this Complex project typology characteristic of Private 3, and its characteristics of high Complexity, high Pace, moderate Technology and low Novelty based on Shenhar and Dvir’s Diamond model typology assessment.

6.14.4 Willingness and capability of the PM/project team in using the Feasibility Formula™

The Director of Project Management confirmed a willingness on behalf of himself and his team of project managers to use the *Feasibility Formula*™ tool and methodology. His assessment regarding the capability of the project managers identified that they would need:

- More guidance on how to populate the tool;
- Training in facilitation or the support of a facilitator to “guide and constrain the dialogue; and
- Support in identifying the right stakeholder group/representation.

The Director of Project Management, and the Project Manager, confirmed that clearly defining the goals of the project and their alignment to the organization’s objectives will help to position the project, and project team, for success. As such, the evaluation confirmed value in the *Feasibility Formula*™ and a willingness to use it. The capability gaps identified where acknowledged to be addressed through additional training and guidance.

6.15 Case Study Description: Projects of Iterations 2 and 3 – Continuous Improvement: Public 1 – Enterprise Portfolio System (EPS)

Public 1 is a federal government IT body with 6,000 employees that is mandated to deliver email, data centre and telecommunication services to 43 federal departments and agencies. Its current total annual budget is approximately $1.7 billion. The creation of this centralized IT organization brought together people, technology resources and assets from 43 federal departments and agencies to improve the efficiency, reliability and security of the government's IT infrastructure.

The project represents the implementation of an Enterprise Portfolio System (EPS) that is an organization-wide application, intended for 300 Project Managers as primary users, that will act as a PM tool and repository for the management of 218 projects (current) valued at 100s of millions of dollars.

6.15.1 Making contact and gaining access

Public 1 is the principal IT organization in the public sector in Canada. I wished to include this organization as a case study, but had no contacts within it. It happened that a colleague of mine secured a short consulting assignment with an Assistant Deputy Minister (ADM) within the organization, and I now had a means to ask for an introduction. After several weeks, I was

corresponding with the Director General responsible for Public 1's Project Management Centre of Excellence. She had agreed to sponsor my research and provide access to the stakeholders necessary for the case study.

6.15.2 Structure of the organization

Public 1 reports to Parliament through the Minister of Public Works and Government Services. The organization's head is the President, followed by the Chief Operating Officer and his immediate Executive. There are also four Senior Deputy Ministers which have approximately six Director Generals (DGs) reporting to them, with varying portfolios of responsibility. Below the DGs are Assistant Director Generals, Directors and Managers of various "rank", and several levels of line staff. This is the structure that comprises the organization's 6,000 employees.

Public 1 was a newly formed organization in 2011 through the consolidation of 43 IT departments from across the country. Its project management Centre of Excellence (COE) had been in place for one year.

6.15.3 Culture

The culture of the organization is a mix of bureaucracy, chaos and innovation. A substantial portion of the staff is technical, giving way to an analytical, "heads down" environment. Nevertheless, there is an injection of innovation through research and the pursuit of novel technologies, sometimes in partnership with private sector industry leaders.

The timeframe to accomplish any one project or program of work is significant. From idea generation through approvals, development and more approvals, it is a lengthy and often disappointing process. One woman on the project team characterized her role as "feeding the machine" to indicate the organization's magnitude and scale, and the culture that has become pervasive in support of its vast requirements.

6.16 Project Description

The project represents the implementation of an Enterprise Portfolio System (EPS) that is an organization-wide application, intended for 300 Project Managers as primary users, that will act as a PM tool and repository for the management of its projects (over 218 active at the time of this research).

The EPS project is the implementation of Version 5.0. The planning and execution of Version 4.0 was unsuccessful according to the project team. They determined that this failure was based on: a scope that was "fenced" due to timelines; objectives that were not well defined; it was based only on project management technical requirements, and not critical business functionality; and finally, a split of authority that made approvals challenging. The project team was therefore looking to avoid these project pitfalls in undertaking Version 5.0. The new version would also incorporate capture of data and artefacts associated with project schedule and risk.

6.16.1 Project Typology

The project typology for Public 1 is Complex. The Diamond Model, as illustrated in Figure 6.16.1 shows that this project is very high in Complexity and Technology, moderate to high in Pace, and low in Novelty.

The complexity of the project stems from the number of EPS users, vast stakeholder group and number of resources involved, approval gating requirements, and the technology solution itself.

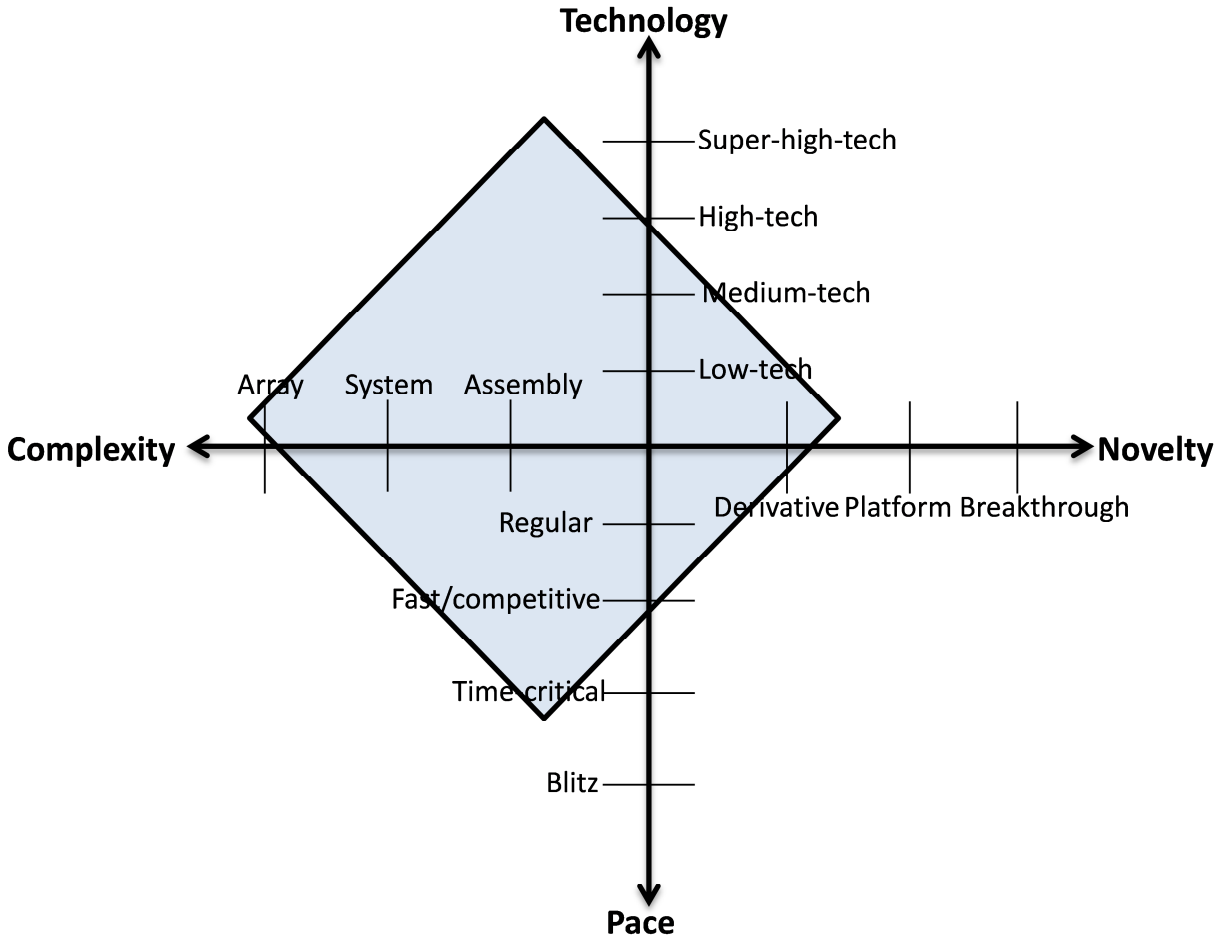


Figure 6.16.1 – The Diamond Model for Public 1 (based on Shenhar, Dvir, 2007)

6.16.2 Objectives and Drivers

The key driver for the project of Public 1 organization is to increase its effectiveness in project reporting. The organization is heavily governed and thus reporting is a primary function to support its objective of demonstrating accountability.

The EPS will support the project management COE in its preparation of dashboard reports, at the project or portfolio level, for both senior management and also the federal treasury, when funding support is required. Hence, an objective for the new version of EPS will be the ease of mining and aggregating data for the purposes of generating metrics in a presentable format.

6.16.3 Lifecycle

The EPS project was in its definition stage. This was still upstream of the traditional project management lifecycle as it had not formally been initiated. A post-mortem on the Version 4.0 implementation was concluding and would provide valuable lessons learned for Version 5.0.

6.17 Project Organization

The project organization within Public 1 is expansive. There are 300 project managers that comprise the project management Centre of Excellence (COE). The COE is divided into three functional areas: project management, reporting, and “Level 3-4” (highest priority, mission critical, “evolutionary” and “transformational” projects). Each functional area is led by a Director who reports to the Senior Director, Project Management Centre of Excellence. The project managers support and are assigned as appropriate to all active projects within Public 1, including the EPS project. The project organization operates in an environment of rigorous standards.

The COE is regulated within the organization insofar as there are policies which govern its operation, including the Project Governance Framework (PGoF) and Project Management Framework (PMF) as formal directives and methodologies issued within Public 1. These directives are set to ensure the “timely, accurate, relevant and transparent” delivery and reporting of projects.

6.17.1 Roles of Sponsor, Program Lead, Project Team

The project Sponsor was the Director General (DG) of the Project Management Centre of Excellence (COE). She had initiated the COE one year prior and built the team from both existing and newly recruited project management personnel. The DG’s mandate included the establishment of the COE, its standards and systems, and building an operation that resulted in the effective planning and delivery of projects across the organization. The EPS project was considered by the Sponsor as essential, and therefore it garnered much attention.

The Senior Director, Centre of Excellence provided the oversight for the EPS project. He had overall operational accountability for the COE and the project managers. The Director of Project Management had direct responsibility for the EPS project and was most knowledgeable regarding aspects of the application. He was “closest” to the project managers and was able to characterize both their motivation and capabilities. Both the Senior Director and Director possessed a good understanding of Public 1’s culture and the challenges that this presented in the project environment.

The Director, Business Management Solutions provided a necessary interface to the COE team in her responsibility for branch-wide reporting to Parliament. She represented the COE with Corporate Services and ensured that the COE reported its performance against its commitments. This Director was responsible for the integrated business plan which included strategic objectives for the COE, and the importance of supporting programs, including the EPS project.

The Project Team was rounded out by a General Manager, Consulting. This individual had responsibility for the consulting resources within the COE, which represented a substantial number of external project managers. As the head of the COE had indicated that strong, skilled project managers were the biggest challenge for the organization, it was necessary to seek external expertise to support project initiatives.

For a number of members of the Project Team, the EPS project would be the first opportunity for collaboration on a project. Only the Sr. Director and Director of PM within the COE had previously worked together.

6.18 Decision Making

6.18.1 Project decision making within the organization

Decision making in Public 1 entailed lengthy processes, policy observation and a multitude of authorities. As a result, decision making was a "collective" process where decisions were not made by one individual, but rather a number of individuals related to project/program components. Along the way, numerous recommendations would be made for consideration to support the scores of decision gates. Further, many decisions were eschewed, as there was a culture that included avoidance of mistakes and missteps. Given the sheer magnitude of many of the projects, and the bureaucracy within the organization, decision making was slow, and often an inhibitor to progress.

Decision making for the EPS project required an informed stakeholder group. A new business case would be produced for sign-off at the Director General level. The Sr. Director of the COE was responsible for gathering the data in support of decision making, and the Director of Project Management would later come to be accountable for the day-to-day decisions around the project. The assigned Project Manager had little or no autonomy to make any decisions - he was simply an "executor.

Public 1's COE had a tool at its disposal to evaluate projects called the Project Complexity Risk Assessment (PCRA). While effective in examining the technical feasibility of each project, it did not fully support decision making as there was no consideration of organizational objectives or functional needs, hence the "hit and miss" success rate with past projects. Not giving consideration to the organizational goals and the project's alignment to this criteria was cited as a primary cause for the failure of the previous EPS Version 4.0.

Leveraging the *Feasibility Formula*™ to engage a wider group of stakeholders would mean a significant change in process for the team as the COE currently operated in a very prescribed environment. Nonetheless, they observed its merits and had suggestions for how to best incorporate into the COE. The Director commented that regardless of the results, however,
one of their biggest issues is that they are not at liberty "to turn down projects that don't make sense".

6.18.2 Results of Feasibility Formula™

The *Feasibility Formula*™ for the enterprise portfolio system project concluded a score of 8/10, as illustrated in Figure 6.18.2.

The stakeholder engagement for Public 1 was an interesting process as there were very diverse perspectives represented. While the Financial element scored lowest at 3/10, it was fundamentally due to funding issues, and that fact that the monies had not yet been earmarked for the project. This was seen to be overcome once the business plan was approved.

Stakeholder Satisfaction also scored low, primarily owing to one stakeholder group and as yet unknown satisfaction of necessary security features within the EPS application. This would remain "on the radar" of the project team for future mitigation.

Finally, the team decided to focus on the Risk element, which is presented in Figure 6.18.3, citing issues of: PM capacity, user community participation and funding concerns.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria	Description	Rating of Importance										Project Criteria	Satisfies Criteria										Aggregate Score
			1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10	
	"What Matters"		"What Matters Most"											"Extent that criteria satisfies what matters most"										
1	Strategic Alignment	Project meets organizational strategy and objectives.								8			Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).										10	9
2	Risk	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.								8			Risk Assessment outcome considered satisfactory based on risk mitigation measures.						6					7
3	Financial	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.				4							Satisfactory outcome of financial feasibility review.		2									3
4	Stakeholder Satisfaction	Project outcome to meet stakeholder objectives.							7				Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.						6					6
5	Human Resources	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.									9		Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.								8			9
6	Political	Project meets political needs and satisfies the decision maker.								8			Outcome of political scan demonstrates project's ability to meet political needs.								8			8
7	Brand	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.										10	Favourable review of project alignment to corporate image and branding strategy.										10	10
8	Organizational Maturity	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.								8			Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.						6					8
9	Policy or Strategic Benefits	Project outcome influences organizational policy and/or strategy.									9		Satisfactory review of project support of and alignment with new or current policies.										10	9
10	Compliance	Project complies with regulatory and legal requirements.										10	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.										10	10
11	Ethical	Project satisfies ethical considerations.										10	Favourable review of project alignment with ethical standards, practices and policies of the organization.										10	10
																							TL Score	8

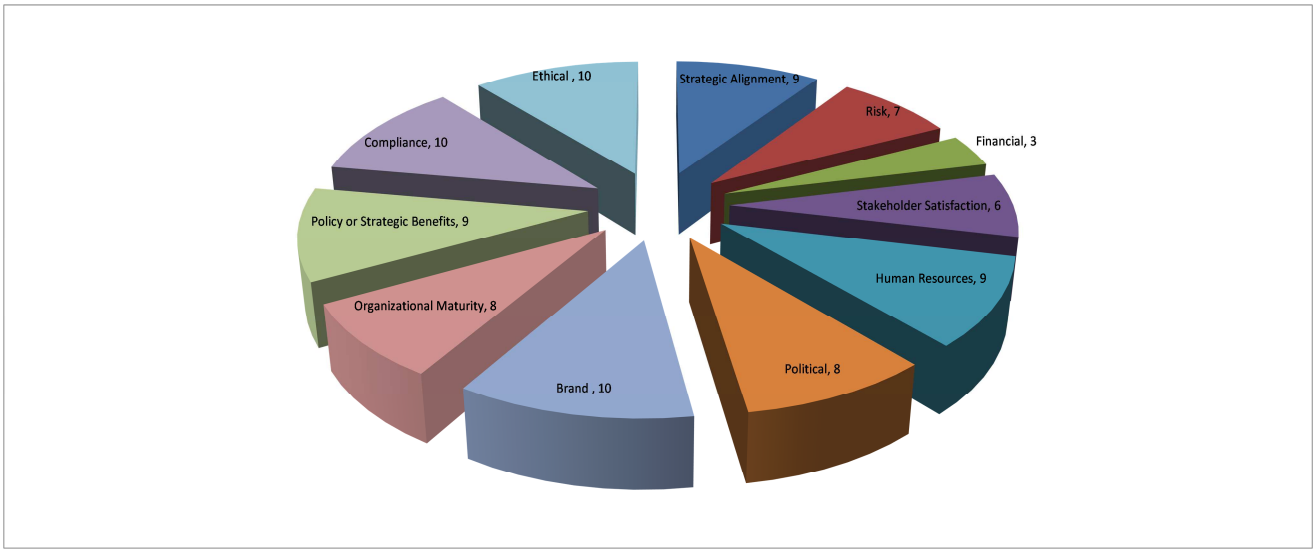


Figure 6.18.2 – Public 1 - Feasibility Formula™ results

Risk Worksheet

	Organizational Risks	Rating of Importance "What Matters Most"										Level of Risk Mitigation "Extent that risks that matter most can be mitigated*"										Aggregate Score
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	
1	Fundamental adoption and use of tools	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	8
2	PM Capacity	☐	☐	☐	☐	☐	☑ 6	☐	☐	☐	☐	☐	☐	☑ 3	☐	☐	☐	☐	☐	☐	☐	5
3	Change management (process mgmt/training)	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	7
4	Integrity of data/information	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	9
5	Requirements clearly defined (end user)	☐	☐	☐	☐	☐	☐	☑ 7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑ 8	☐	☐	7
6	Participation of user community	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	☐	☐	☑ 3	☐	☐	☐	☐	☐	☐	☐	7
7	Funding	☐	☐	☐	☐	☐	☐	☐	☐	☑ 9	☐	☐	☑ 2	☐	☐	☐	☐	☐	☐	☐	☐	7
	Total	8										6										**7**

Figure 6.18.3 – Public 1 – Risk Worksheet

6.18.3 Effectiveness of the tool and methodology

The research participants from Public 1 concluded that The *Feasibility Formula*™ tool and methodology was effective in the early identification of project feasibility issues related to organizational objectives, and its ability to provide an understanding of the project's likelihood of success. Hence, the team indicated that the tool is most effective in determining the go/no-go and in "killing" projects early if the evaluation provides an unsatisfactory outcome (although they appeared to have little authority in making this determination).

The data analysis and evaluation confirmed that this federal entity was extremely risk averse, a fact also confirmed by the team members. Public 1 was all about accountability, and security was

paramount as the organization had responsibility for the personal data of Canadians and could not tolerate a breach to its network.

Similar to other research participants, members of this team suggested that the organizational objectives be pre-populated by a more strategic group (i.e. senior management/executive) so that the project management organization (COE) would only have to look at the project's ability to satisfy the objectives.

The participants also cited that the tool and methodology could be used to retroactively review projects previously put on hold or cancelled to determine the "why?" behind the decision.

The 11 elements were considered "bang on" and fully represented those which they would consider as important to Public 1. The scoring seemed to have greater meaning to this group within Public 1, more than others – i.e. a low score would mean "do not proceed", or be prepared to mitigate issues and manage to expectations. The Director of Business Management Solutions identified that the *Feasibility Formula*™ would provide strong support to their communication efforts through stakeholder engagement and also in messaging around the results of the analysis. This may have been in part based on the stakeholders not typically being engaged in dialogue around a project and its feasibility, due to the fact that much of their project work is prescribed.

In conclusion, the research participants believed that the *Feasibility Formula*™ was most applicable to their organization, and the COE in particular. They saw the value in the organizational component, as this was observed as a major shortcoming with their existing tool. The tool and methodology further proved effective in this Complex project typology of Public 1, and its characteristics of high Complexity and Technology, moderate Pace and low Novelty based on Shenhar and Dvir's Diamond model.

6.18.4 Willingness and capability of the PM/project team in using the Feasibility Formula™

The Senior Director of the Centre of Excellence and the Director of Project Management confirmed a willingness of themselves as project professionals, and of their project managers to use the *Feasibility Formula*™ tool and methodology. They did provide a caveat, however, that their goal was to lessen the burden on the project managers, hence the organizational objectives should be pre-determined and communicated. The project managers would then only need to focus on the project components as to how they address Public 1's goals. A concern was also expressed that a number of the project managers would require training in facilitation skills to ensure an effective session with stakeholders.

6.19 Case Study Description: Projects of Iteration 4 – Validation: Public 2– Regional Office Accommodation

Public 2 is a crown corporation of the federal government that specializes in export development. It is a credit agency that supports and develops export trade by helping companies respond to international business opportunities. The organization provides financial services, insurance and business solutions to the country's exporters and investors and their international buyers.

The project represents accommodation for Public 2's regional office in central Canada. The $30M facilities budget is applied to its head office plus 17 domestic regional offices and another 17 international offices that are co-located with a foreign affairs organization. While this particular project has implications related to standards and method of approach for all offices, it further requires consideration for either a new office, or the renewal of an existing lease. In either case, the criteria indicate a necessary expansion to double the size of the space to accommodate new staff.

6.19.1 Making contact and gaining access

I had first met the Director of Real Estate and Corporate Services for this organization in 2010. At the time, I was working on my Master's degree in Project Management and had approached him to participate in a research project. When making contact this time, there was an immediate willingness to help and he organized the stakeholders for this research within a couple of weeks. Further, the Director and stakeholder team eagerly provided whatever data was requested.

6.19.2 Structure of the organization

Public 2 can be characterized as an innovative organization, but with a traditional structure. There is a CEO and senior executive team comprised of Vice Presidents, followed by a level of Directors, then Managers and coordinators or "line" staff.

Despite this formal hierarchy, the organization sees itself as quite flat. Line staff will regularly approach VPs or even the CEO to discuss items of interest. The "leading edge" work environment supports this interaction with open work areas and many collaborative spaces. Impromptu employee "collisions" are further facilitated with a series of social collaboration areas. Public 2 has achieved the feel of a flat structure in what is truly a hierarchical decision making structure.

6.19.3 Culture

The culture of the organization is quite entrepreneurial. This seems to be quite a dichotomy to its employee base of analytical accountants and lawyers. Public 2 is described as a place where people want to come to work, and to make a difference for the organization. Employees at all levels are approachable and there is a great deal of collaboration both within teams and across functional areas.

6.20 Project Description

The project is a Regional Office Accommodation in central Canada. The current facility is inadequate to meet the needs of the growing local business and forecasted expansion. Under consideration is to remain in situ, but to take on additional space in the same building. Alternatively, Public 2 could more freely expand to several thousand square feet in a brand new location and building.

The project had been initiated by the Regional Vice President (RVP) in looking at the needs to continue to serve clients appropriately. While the RVP contemplates the client and employee experience requirements, the project team is giving consideration to the representation of Public 2's brand and image within the space, along with the application of the organization's standards.

6.20.1 Project Typology

According to the project team, and the fact that this project appears more as "business as usual" than an extraordinary event, the project can be considered Typical, as it fits the descriptors within Duration, Complexity and Risk.

When applying the Diamond Model, the project can be characterized as low on Complexity and Pace and low to medium on Technology and Novelty. The typology is uncomplicated and generally routine for this organization.

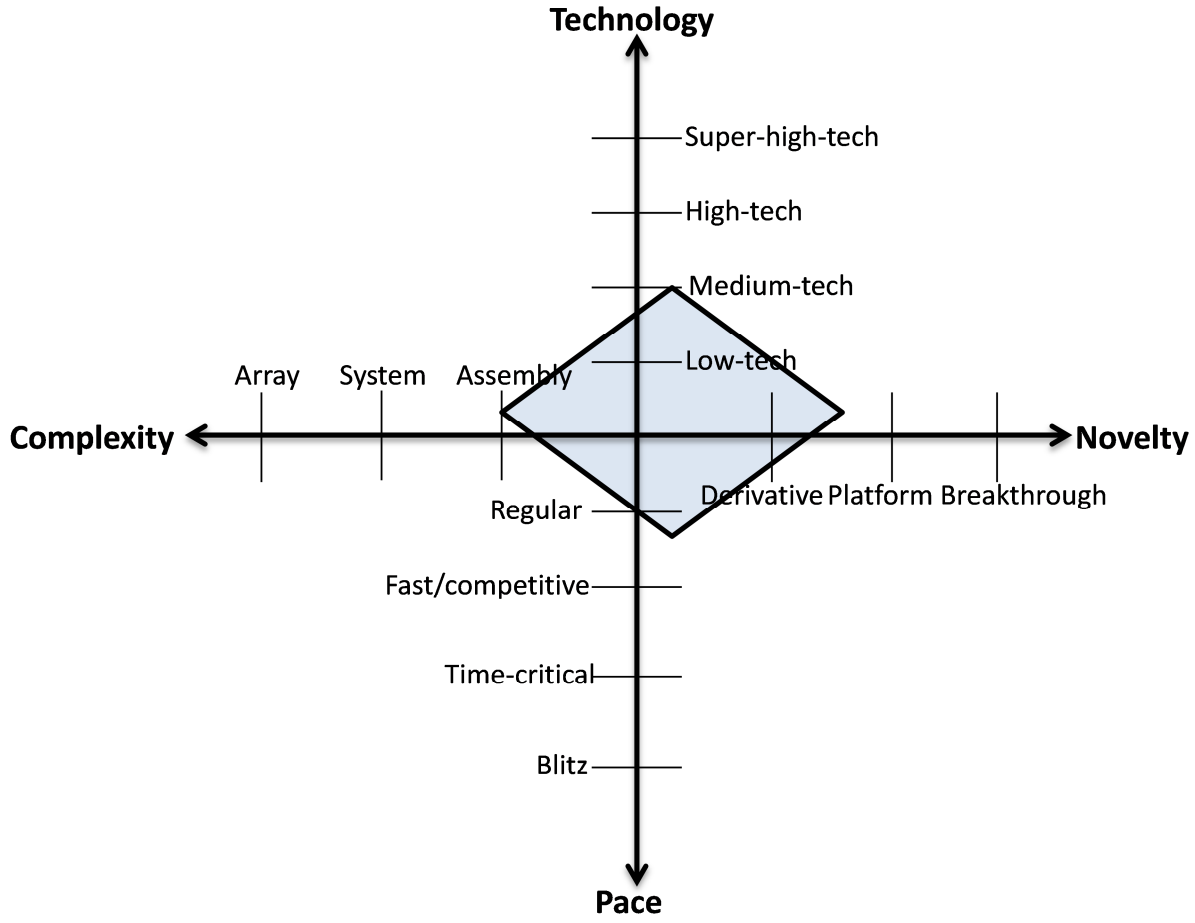


Figure 6.20.1 – The Diamond Model for Public 2 (based on Shenhar, Dvir, 2007)

6.20.2 Objectives and Drivers

The driver for Public 2's project is the organization's need to support the growth of the business at the regional, or local, level. Further, the organization wishes to ensure that it's brand, corporate image, and commitment to its clients is maintained based on *how* the regional offices and spaces facilitate a desirable interaction between employee and client.

Understanding this imperative, the Regional Vice President in this central Canadian office proactively initiated a business case in support of an accommodation project.

6.20.3 Lifecycle

The regional office accommodation project was in a very early stage in the project lifecycle. A need had been identified but no solution proposed to satisfy the accommodation requirement. A short brief had been prepared and options were being identified that would be further explored. The project was significantly upstream of the traditional, and initial, project management stage of “Initiation”.

6.21 Project Organization

The project organization in Public 2 consisted of functional and subject matter experts who oversaw their own programs of work, specific to real estate and facilities.

The Director of Real Estate and Corporate Services, who reported into the Finance department within the organization, had responsibility for all accommodation projects, both domestic and abroad. The portfolio included one head office, 17 domestic and 17 international offices. The Director’s team that comprises the project organization is described in the following section.

6.21.1 Roles of Sponsor, Project Lead, Project Team

The Sponsor for the project (and this research) was the Director of Real Estate and Corporate Services. While the Director’s role was more strategic in nature insofar as optimizing the portfolio, he had overarching responsibility for the planning and delivery of the identified project.

The Project Lead was the Real Estate and Facilities Manager, a designer by background, who had responsibility for the corporate and regional offices. Her role was tactical in nature whereby she would liaise with local resources and plan the project execution.

The Project Team consisted of a Facilities Coordinator and Real Estate and Facilities Specialist, who were considered highly operational. They spent much of their time focused at a detailed level on planning and implementation of projects and building maintenance programs.

This team, along with others, had previously been responsible for a momentous head office project that saw the reinvention of its workplace, including new protocols, technology solutions, and accommodation standards. Regional projects were considered “business as usual” and uncomplicated undertakings in comparison. An informal methodology was developed and implemented to deal with projects across the geographic portfolio.

6.22 Decision Making

6.22.1 Project decision making within the organization

Given the structure of the organization for Public 2, it was unusual to note the informality of decision making and approvals, and lack of rigour required to prepare and defend project proposals.

The process revolved around: i) a "need" identified from the field/local region and direction from the Regional Vice President; ii) the Real Estate and Facilities group would provide a brief assessment to validate the request; iii) typically quotations were obtained to execute the work; iv) a two page memo was outlined requesting approval from the Senior Vice President or Chief Financial Officer.

For this specific project, there was similarly no business case, but a very brief outline of the project and its estimated cost. Once approved, the Sponsor would make decisions related to following real estate and facilities standards, and selection of consultants, trades, furniture, fixtures and equipment. The Regional Vice President would sign off on the proposed space, configuration and layout to ensure it would meet the local headcount and business needs.

Public 2 had no formal project decision making tools in place. The *Feasibility Formula*™ was seen as a tool and methodology that would help to identify issues across the portfolio very early in the process when contemplating various projects. Further, upon its use with the project team, it was deemed applicable to all types of projects within the organization, including three current "Tier 1" transformational projects, an IT project, and large administrative project. The team commented that they would likely apply some of their own language to the tool in order to "run with it".

6.22.2 Results of Feasibility Formula™

The *Feasibility Formula*™ for the regional office accommodation project produced a score of 8/10, as illustrated below in Figure 6.22.2.

Public 2 was a high functioning organization and worked well together as a participant group to identify organizational objectives. They had strong consensus on the project's ability to satisfy this defined criteria. There were few areas where the project was not aligned with corporate goals. Only one stood out: within the Strategic Alignment worksheet (Figure 6.22.3), there was an organizational strategy to automate product offerings, i.e. to implement technological solutions to provide clients with the means to access Public 2's products electronically. The regional office accommodation project did not satisfy this objective, but the discussion identified that there were possible ways to address this. Accordingly, the participants chose to revisit this objective and to fully consider the means by which it could be satisfied – by engaging other stakeholders, such as IT functional experts – and formally examining options to fulfill the requirement.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria "What Matters"	Description	Rating of Importance "What Matters Most" 1 2 3 4 5 6 7 8 9 10	Project Criteria	Satisfies Criteria "Extent that project satisfies what matters most" 1 2 3 4 5 6 7 8 9 10	Aggregate Score
1	**Strategic Alignment**	Project meets organizational strategy and objectives.	9	Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).	8	**9**
2	**Risk**	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.	10	Risk Assessment outcome considered satisfactory based on risk mitigation measures.	9	**9**
3	**Financial**	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.	9	Satisfactory outcome of financial feasibility review.	8	**8**
4	**Stakeholder Satisfaction**	Project outcome to meet stakeholder objectives.	9	Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.	10	**9**
5	**Human Resources**	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.	10	Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.	9	**10**
6	**Political**	Project meets political needs and satisfies the decision maker.	10	Outcome of political scan demonstrates project's ability to meet political needs.	10	**10**
7	**Brand**	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.	10	Favourable review of project alignment to corporate image and branding strategy.	8	**9**
8	**Organizational Maturity**	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.	8	Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.	8	**8**
9	**Policy or Strategic Benefits**	Project outcome influences organizational policy and/or strategy.	10	Satisfactory review of project support of and alignment with new or current policies.	10	**10**
10	**Compliance**	Project complies with regulatory and legal requirements.	8	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.	8	**8**
11	**Ethical**	Project satisfies ethical considerations.	10	Favourable review of project alignment with ethical standards, practices and policies of the organization.	10	**10**
					TL Score	**8**

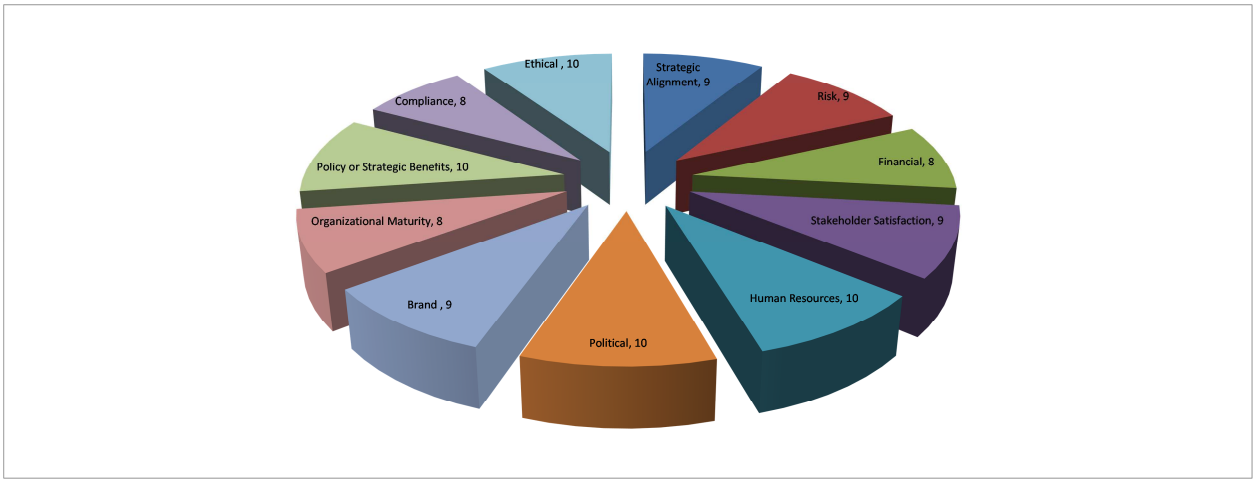


Figure 6.22.2– Public 2 - Feasibility Formula™ results

Strategic Alignment Worksheet

	Organizational Strategy	Rating of Importance "What Matters Most" 1	2	3	4	5	6	7	8	9	10	Level of Strategic Alignment "Extent that project aligned with what matters most" 1	2	3	4	5	6	7	8	9	10	Aggregate Score
1	Support Canadian small business exporters										☑ 10										☑ 10	10
2	Getting closer to the customer (local markets)								☑ 8												☑ 10	9
3	Automating product offerings									☑ 9			☑ 2									7
4	Standardized image presentation							☑ 7												☑ 9		8
5	Trusted and commited partner for Canadian exporters										☑ 10										☑ 10	10
6	High aggregate Net Promoter Score										☑ 10								☑ 8			9
7	To be seen as trusted partner of/to banks, other institutions										☑ 10										☑ 10	10
	Total	9										8										**9**

Figure 6.22.3 – Public 2 – Strategic Alignment Worksheet

6.22.3 Effectiveness of the tool and methodology

According to Public 2 participants, The *Feasibility Formula*™ tool and methodology was found to be quite effective in providing a formal structure for identifying organizational objectives, and assessing pre-project feasibility and the likelihood of the project's success within the organization.

The data analysis and evaluation from Public 2 indicates that this organization extracted the greatest value from the *Feasibility Formula*™ through its encouragement to think strategically and in identifying the organization's goals and objectives. This permitted the project team to fully understand their contribution to the organization at the project level for the first time.

While Public 2 fostered the integration of stakeholder interests across the organization, there were nevertheless no formal processes in place for project due diligence. The *Feasibility Formula*™ would be tested further in future as a formal process to facilitate this pre-project feasibility, including decision making and approvals, and determine the likelihood of project success.

The *Feasibility Formula*™ proved effective in this "typical" project typology and in a resulting Diamond Model that is low to moderate on all four elements of Pace, Complexity, Technology and Novelty.

6.22.4 Willingness and capability of the PM/project team in using the Feasibility Formula™

The Project Lead confirmed her willingness and capability in using the *Feasibility Formula*™ tool and methodology. She expressed that it worked really well and was capable of leading a group of project stakeholders through the methodology and use of the tool.

The Sponsor also indicated that there was no hesitation on his part, or on the part of other participating team members, in deploying the tool. He believed that it was easy to use and the facilitation with other stakeholders in the organization would not be difficult. The strength of existing relationships and intimate knowledge of their subject matter supported their ability to implement the tool and methodology.

6.23 Case Study Description: Projects of Iteration 4 – Validation: Not-for-Profit 1 (NFP 1) – Real Estate Strategy

Not-for-Profit 1 (NFP 1) is a national and mostly voluntary association of physicians that advocates on behalf of its 80,000 members and the public for access to high quality health care. It provides leadership and guidance to physicians through a variety of services that includes medical research, policy development, clinical resources, health programs, practice management and professional development.

The project is based on a real estate strategy for NFP 1's head office, a facility of 80,000 square feet. Options under consideration by the organization range from staying in their existing facility to adopting an alternative workplace solution and re-locating elsewhere in the city (and selling or leasing the current property), to co-locating and integrating with an affiliate located nearby. The latter is the preferred option and represents the project under formal consideration.

6.23.1 Making contact and gaining access

I had undertaken a professional assignment for the Chief of Staff of NFP 1, and was later in an optimal position to reach out and request participation in this research work. I was also very keen to include a not-for-profit organization in the mix in order to determine applicability of the *Feasibility Formula*™ to this sector.

Upon contacting the Chief of Staff and requesting his sponsorship and support of NFP 1, he very quickly thereafter made arrangements to accommodate the research.

6.23.2 Structure of the organization

NFP 1's organizational structure is highly traditional. It has a Governing Council and Board of Directors, as well as a number of core committees that represent the primary decision making bodies. The senior management team consists of a Secretary General and Chief Executive Officer (CEO), a Chief Financial Officer (CFO) and a number of Vice-Presidents responsible for a variety of functional areas, such as health policy and research, and Advocacy and Public Affairs.

The research sponsor and Chief of Staff was a senior advisor who reported directly to the CEO. The rest of the organization was represented by Directors, Managers and functional staff, representing approximately five more levels in the hierarchy.

6.23.3 Culture

NFP 1 was founded in 1867 and hence the culture is steeped in tradition. Many of the employees have made careers with the organization and have been employed with NFP for well over 20 years. The staff is therefore comprised of “baby boomers” and “Gen X” workers, who are very mature and ensure continuity of the culture.

This characteristic of its workforce has presented challenges to the senior management of NFP 1, as this executive team is relatively new to the organization and is keen to make significant changes in the interest of growing its member base. The workforce in its current state is seen as an impediment to progress, so a number of change management initiatives are under consideration.

6.24 Project Description

The project is based on a real estate strategy for NFP 1’s head office, a facility of 80,000 square feet. Options under consideration by the organization range from staying in their existing facility to adopting an alternative workplace solution and re-locating elsewhere in the city (and selling or leasing the current property), to co-locating and integrating with an affiliate located nearby. The latter is the preferred option and represents the project under formal consideration and assessment using the *Feasibility Formula*™ tool and methodology.

The project being contemplated represents a substantial cultural shift for the organization. In addition to a change of address and co-location with another entity and its more “contemporary” workers, it further considers an alternative workplace strategy with a flexible, mobile workforce. The organization anticipates that change management is an important aspect of the project in order to envisage a successful outcome.

6.24.1 Project Typology

The project typology for NFP 1 is Complex. The Diamond Model, shown in Figure 6.24.1 illustrates that this project is high in Complexity and Novelty, and moderate to high Technology and Pace.

The complexity of the project is primarily based upon its significance to the organization and major impact on its workforce and, to a lesser extent, its member base. Further, the project options have made consideration for sizeable capital investment.

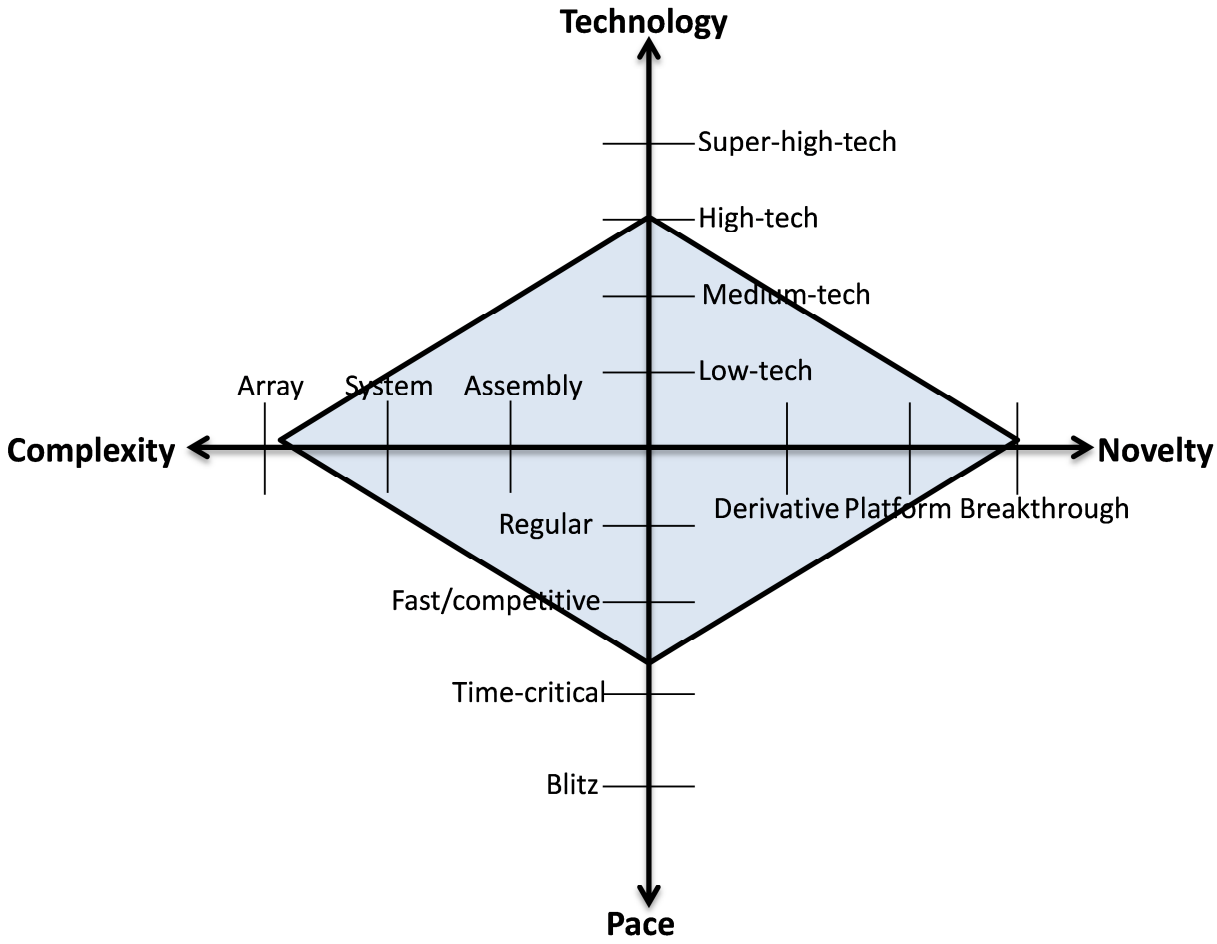


Figure 6.24.1 – The Diamond Model for NFP 1 (based on Shenhar, Dvir, 2007)

6.24.2 Objectives and Drivers

The driver for NFP 1's project is the organization's need to reinvent itself in the eyes of its national physician membership in order to sustain its relevance. Other objectives include optimal investment decisions for its largest owned asset, and for its real estate strategy going forward.

In order to meet this strategic challenge, the Chief of Staff was tasked with exploring options for NFP 1's real estate strategy that would support a reinvention of its brand and image, accommodate a new working model and environment, and maximize its return on investment.

6.24.3 Lifecycle

The real estate strategy project was well upstream of the project lifecycle. This research was undertaken as options for the strategy were being explored and considered, and additional due diligence was being sought on the likely or preferred "relocation with an affiliate" option.

NFP 1 was going about its due diligence in a methodical manner to ensure that decision making would be well informed with both qualitative and quantitative data. Identifying that the *Feasibility Formula*™ tool and methodology could provide value at this early point in the project's lifecycle was considered favourable.

6.25 Project Organization

NFP 1 did not have a formal project organization, and instead appointed individuals with broad skill sets (yet unrelated functional or subject matter expertise) to the project. As the lack of internal real estate and project management expertise was recognized, the Chief of Staff retained external assistance and outsourced the work.

6.25.1 Roles of Sponsor, Project Lead, Project Team

The Sponsor for the project was the Chief of Staff, who reported on the project to both the CEO and the Finance Committee. He was also considered the internal Project Lead and was involved in all aspects of its direction, due diligence and planning.

The Director, HR and Organizational Development was a key senior member of the project team, representing the interests of the workforce (180 employees at head office) and the significant change management component of the project.

The Project Lead for the Real Estate Strategy was an external resource who led the assessment work and liaised with the NFP 1 team. The extended Project Team consisted of members of the Finance Committee. This project team had not previously worked together.

6.26 Decision Making

6.26.1 Project decision making within the organization

Decision making within NFP 1 was somewhat bureaucratic, following the necessary hierarchical structure. The Chief of Staff was required to share information from the real estate assessment with members of the Project Team and seek consensus and guidance prior to proceeding with any further work.

While not necessarily prescribed for this project, the decision making process was nevertheless formal, and caused a number of delays in the early days of launching the real estate strategy work. There was also a tendency for the senior stakeholders to focus at a very detailed level, resulting in a significant number of changes to the initial scope of work considered.

NFP 1 was a legislated organization with a structure that comprised both governing and advisory bodies, a General Council and Board of Directors, to which senior management reported. Despite the formality of its decision making, NFP 1 possessed no formal or prescribed project decision making tools. The introduction of the *Feasibility Formula*™ favourably demonstrated the value of such a tool and methodology to the stakeholder group. Again, despite the formality around NFP 1's decision making, on no previous occasion had there been consideration of the organization's objectives from senior management in assessing the relevance of a project, and its likely success.

6.26.2 Results of Feasibility Formula™

The *Feasibility Formula*™ for the real estate strategy project produced a score of 8/10, as illustrated below in Figure 6.26.2.

NFP 1 stakeholders were quite clear on organizational objectives and took no time to reach consensus on what they would be for the majority of the elements. While a number of issues arose around Strategic Alignment, Stakeholder Satisfaction and Organizational Maturity, the team had its greatest discussion regarding the Risk element, as shown in Figure 6.26.3. Of particular concern was: i) the organization's competition from provincial medical associations; ii) its ability to effectively plan and implement change; and iii) the organization's potential lack of flexibility and nimbleness to respond to opportunities and challenges. Each of these aspects would be addressed with further due diligence through their exploration of the real estate strategy from the perspective of importance to the organization, the organization's ability to implement, and the project's ability to ultimately satisfy these goals.

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria	Description	Rating of Importance									Project Criteria	Satisfies Criteria										Aggregate Score
	"What Matters"		1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8	9	10	
			"What Matters Most"										"Extent that project satisfies what matters most"										
1	**Strategic Alignment**	Project meets organizational strategy and objectives.								8		Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).					5						**7**
2	**Risk**	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.							7			Risk Assessment outcome considered satisfactory based on risk mitigation measures.							7				**7**
3	**Financial**	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.									9	Satisfactory outcome of financial feasibility review.							7				**8**
4	**Stakeholder Satisfaction**	Project outcome to meet stakeholder objectives.								8		Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.								8			**8**
5	**Human Resources**	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.									9	Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.								8			**8**
6	**Political**	Project meets political needs and satisfies the decision maker.									9	Outcome of political scan demonstrates project's ability to meet political needs.									9		**9**
7	**Brand**	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.									9	Favourable review of project alignment to corporate image and branding strategy.							7				**8**
8	**Organizational Maturity**	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.									9	Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.									9		**9**
9	**Policy or Strategic Benefits**	Project outcome influences organizational policy and/or strategy.									9	Satisfactory review of project support of and alignment with new or current policies.									9		**9**
10	**Compliance**	Project complies with regulatory and legal requirements.									9	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.								8			**9**
11	**Ethical**	Project satisfies ethical considerations.									9	Favourable review of project alignment with ethical standards, practices and policies of the organization.										10	**10**
																						TL Score	**8**

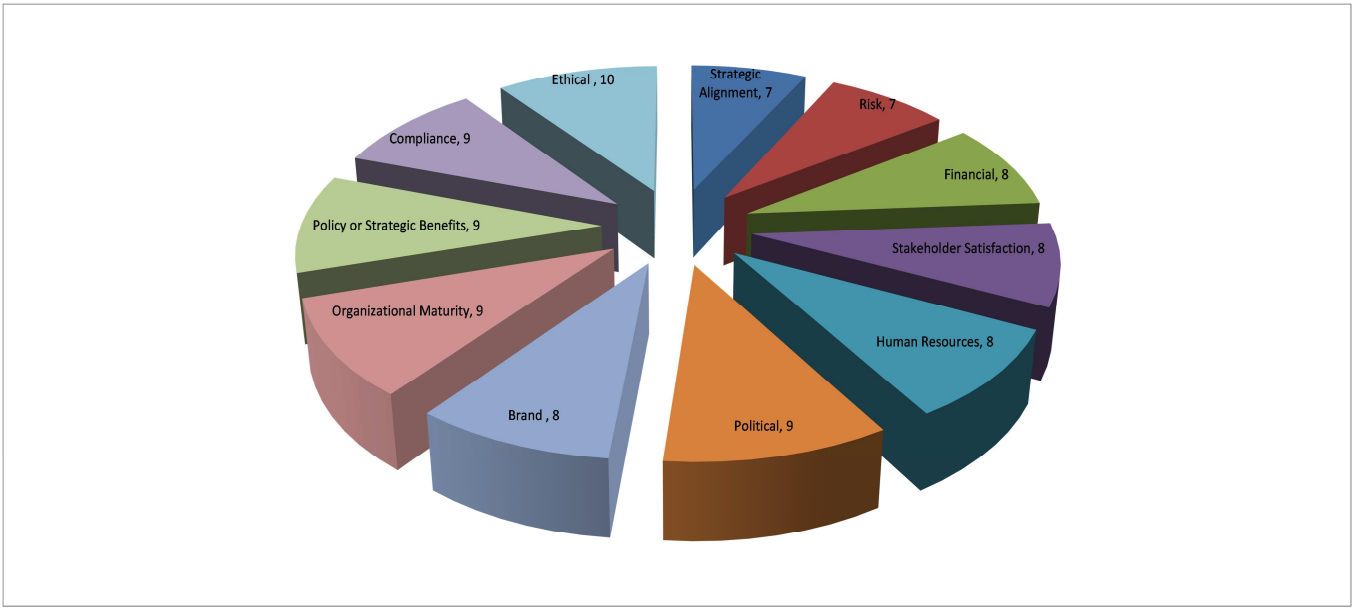


Figure 6.26.2– NFP 1 - Feasibility Formula™ results

Risk Worksheet

	Organizational Risks	Rating of Importance "What Matters Most"										Level of Risk Mitigation "Extent that risks that matter most can be mitigated*"										Aggregate Score
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	
1	Stagnation in eyes of physicians							7											8			7
2	Attraction and retention of talent/employees								8												10	9
3	Cost escalation (operations, business)						6													9		7
4	Eroding membership										10							7				9
5	PTMA competition			3										3								3
6	Effective change management										10						6					9
7	Flexibility and nimbleness of organization to respond to opportunities & challenges								8							5						7
	Total	7										7										7

Figure 6.26.3 – NFP 1 – Risk Worksheet

6.26.3 Effectiveness of the tool and methodology

NFP 1 participants identified that the *Feasibility Formula*™ was an effective tool and methodology for their organization. Specifically, they found it to be effective in defining and obtaining a commitment from stakeholders of "the common, measurable goals".

The data analysis and evaluation from NFP 1 concluded that the stakeholders embraced the tool and methodology as an exercise that should be performed at the front end of all projects. Case study participants also liked the level of detail that could be generated and assessed – allowing

them to break down the criteria into component parts, have a discussion around them and then compare to how the project would help foster the achievement of the objectives.

NFP 1 was not a project organization. It rarely undertook capital projects of any magnitude, and had no professional project resources within the organization. The *Feasibility Formula*™ was therefore a welcome support mechanism and much needed tool and methodology.

In conclusion, the *Feasibility Formula*™ once again proved effective in this Complex project typology for NFP 1, and its characteristics of high Complexity and Novelty, and moderate to high Pace and Technology, based on Shenhar and Dvir's Diamond model.

6.26.4 Willingness and capability of the PM/project team in using the Feasibility Formula™

The Chief of Staff, as internal Project Lead, confirmed his willingness and capability in using the *Feasibility Formula*™ tool and methodology. He was a senior management member with strong skills in stakeholder engagement and facilitation. His ability to round up stakeholders, define objectives, assess the project against the elements, and drive to consensus was apparent.

The external Project Lead, as a senior consultant, was also willing and capable of engaging stakeholders in using and generating the necessary outcomes from the *Feasibility Formula*™ tool and methodology.

Interestingly, in the absence of project management expertise, this organization was one of the likeliest and proficient of all case study organizations to successfully apply the tool and methodology, perhaps due to the maturity and senior nature of the team, as well as its generalist and broad base of skills available to be deployed.

6.27 Inter-case Analysis

This chapter has described six case studies undertaken within Canadian organizations. The following section will present an inter-case analysis of the cases and their respective projects. The analysis seeks to examine similarities and differences between the cases and their components, and further looks to address Research Question 4: How capable and willing is the project manager and/or project team in using the *Feasibility Formula*™ methodology and tool to engage with decision makers?

In order to increase the validity and reliability of the case study research, an inter-case analysis was conducted for all six case studies for: i) project manager/project team capabilities; ii) willingness of the project manager/project team to use the methodology and tool; and applicability to iii) project typology; iv) project type; v) industry; and vi) sector.

A summary of the inter-case analysis is illustrated below in Table 6.27.1.

Table 6.27.1 – Summary of inter-case criteria and effectiveness of the Feasibility Formula™

Inter-Case Criteria	Private 1	Private 2	Private 3	Public 1	Public 2	NFP 1
Project Manager/ Project Team capabilities*	√ Yes	√ Yes	√ Yes	√ Yes	√ Yes	√ Yes
Project Manager/ Project Team willingness	√ Yes	√ Yes	√ Yes	X No – mandated, prescribed tool in place	√ Yes	√ Yes
Project Typology	√ Simple	√ Typical to Complex	√ Complex	√ Complex	√ Typical	√ Complex
Project Type	√ Marketing	√ Accommodation	√ Business Development	√ IT	√ Accommodation	√ Real Estate
Industry	√ Project management	√ Wealth management and financial services	√ Defense and aerospace engineering	√ IT	√ Export development	√ Medical
Sector	√ Private	√ Private	√ Private	√ Public	√ Public	√ Not-for-profit

*all but NFP 1 cited additional training requirement specific to use of the tool and workshop facilitation

6.27.1 Project Manager/Project Team Capabilities

For the purpose of this research, capability is defined as an ability, competency or proficiency based on the culmination of skills garnered from education and experience. Capability was examined for the project manager and/or project team in using the *Feasibility Formula*™ - i.e. engaging stakeholders in the application of the tool and methodology and using the data obtained to facilitate discussion around indications of project success and failure and decision making.

Capabilities of project team members, including the project manager or project lead and sponsor was assessed through interviews and discussion; a review of experience and background; and observation by the researcher. Regardless of whether the individual was a professional project manager, a functional specialist, or senior management member, the capability for using the *Feasibility Formula*™ existed.

The sponsors and researcher noted that facilitation skills training would be required for each project manager or project team member looking to undertake the methodology. One sponsor

was concerned that this would put additional burden on his project manager, in addition to the PM's other responsibility areas.

In summary, all project managers and/or project teams in all case studies exhibited capability to use the *Feasibility Formula*™ with additional training on the tool and methodology, as well as the necessary facilitation techniques.

6.27.2 Project Manager/Project Team Willingness

Willingness refers to the individual's readiness, inclination and motivation to use the *Feasibility Formula*™ to engage stakeholders in the process of defining organizational objectives and examining a project's ability to satisfy these objectives. This willingness can be interpreted as a project manager or project team member's desire to conduct pre-project due diligence in support of effective decision making.

From the data collected, five of the six case studies demonstrated that the project managers/project team members were willing to use the tool: Public 1 project team members indicated that they had a mandated and prescribed tool already in place – one that every project manager in the organization was required to use, in their heavily legislated environment. However, the team members also confirmed that the current tool had a major shortcoming as it did not specifically address organizational objectives, and if given the choice, they would prefer to use the *Feasibility Formula*™.

In conclusion, there was a strong affinity for the *Feasibility Formula*™ and a willingness to use the tool and methodology within each organization, bar one.

6.27.3 Analysis by Project Typology

When undertaking this research, I gave a great deal of consideration to the *Feasibility Formula*™ tool and methodology and its applicability to all project typologies. Initially, it was thought that the tool would be most appropriate for Complex project typologies, ones that could be considered to present a significant risk, cost and complexity to the organization.

Through the evaluation of all six case studies which represented: one Simple; one Simple to Typical; one Typical; and three Complex project typologies, the data showed, however, that the *Feasibility Formula*™ tool and methodology was equally applicable and relevant in all project typologies. Nevertheless, consideration should be given to its ultimate value on very Simple projects of small value and complexity.

It can be concluded from the research that the *Feasibility Formula*™ tool and methodology is equally valuable in all project typologies – from Simple to Typical to Complex.

6.27.4 Analysis by Project Type

Across the six case studies, a variety of project types were represented: 3 different Business projects (Business Development, Marketing and Real Estate Strategy), 2 Accommodation projects, and 1 IT project.

While there were differences in stakeholder representation and functional dissimilarities amongst the case studies (from salespeople to marketing specialists to facilities personnel to IT practitioners, etc.), the *Feasibility Formula*™ tool and methodology was germane to each project type. Regardless of the subject matter, the tool was equally applicable. The project management discipline instructs that a robust project management methodology can apply to any project type, therefore a project manager should be able to manage projects in any environment. It was not expected to be the case for other project team members consisting of functional specialists. Nevertheless, the *Feasibility Formula*™ permitted these team members to assess their organization and project in a structured and methodical manner irrespective of project type, their role, or area of expertise.

This was a primary focus of the research. When developing the tool and methodology, the researcher wanted to ensure, through the action research and iterative methodology refinement, as well as the detailed case studies, that the *Feasibility Formula*™ would be equally relevant in all project environments. This would ensure greater value to the project management discipline.

In summary, the *Feasibility Formula*™ tool and methodology was successfully applied to all project types and environments studied as undertaken in this research.

6.27.5 Analysis by Industry

Six distinct industries were represented in the case studies: project management, wealth management/financial services, defense and aerospace engineering, IT, export development and medical.

Similar to the outcome of the assessment of project types, it was found that the *Feasibility Formula*™ was equally relevant and applicable to every industry assessed. Although the different industry organizations had distinct objectives, the application of the tool was indistinguishable and successfully interchangeable.

By extrapolation, it can be concluded that the *Feasibility Formula*™ tool and methodology would be applicable in any industry.

6.27.6 Analysis by Sector

The case studies further represented three sectors: private, public (i.e. government) and not-for-profit. Each represents a distinct focus and accountability. Private sector organizations are profit driven and typically answer to shareholders; public sector entities serve constituents and are held accountable for the cost-conscious delivery of services to Canadians; and not-for-profit

organizations are typically driven by their membership and other sponsors to provide relevant services.

The researcher initially undertook the development of the *Feasibility Formula*™ with the private sector in mind. However, with a growing consideration for the wider application of the tool, the public sector was added. And finally, upon undertaking the case studies and seeing an opportunity to include another key sector, the not-for-profit organization was appended.

From the data collected and analysed, it became apparent that the *Feasibility Formula*™ tool and methodology was applicable to all sectors undertaken in this research. As the vast majority of organizations can be categorized within one of these three sectors, it can be concluded that the *Feasibility Formula*™ is applicable to all sectors.

6.28 Reflections of the researcher

The fundamental aim of my research was to develop a pre-project feasibility tool and methodology that would contribute to both the organization and the project management profession in its ability to provide the necessary due diligence to inform the likelihood of a successful project outcome and support effective decision making.

In reviewing a number of research methods, I had chosen ones that I believed would best support the collection and analysis of relevant data, namely a comprehensive literature review, robust action research and iterative methodology refinement, and detailed case studies. These methods were deployed in my quest to discover the relevance, applicability and value of the *Feasibility Formula*™ tool and methodology that I had created with a view to increasing the likelihood of project success.

Key findings of the research included:

- The vast majority of organizations (5 out of 6 organizations studied) did not undertake any significant due diligence prior to undertaking a project
- Only one of the organizations researched utilized a formal tool that would support project decision making, yet still did not address organizational objectives – i.e. there is a significant pattern regarding lack of decision making tools and methodologies in organizations
- There was an absence of stakeholder engagement around project decision making in all organizations
- The greatest value provided by the *Feasibility Formula*™ tool and methodology was its ability to generate relevant discussion among stakeholders and to highlight areas of concern or interest
- The *Feasibility Formula*™ tool and methodology was found to be effective by all organizations studied (i.e. all sectors, industries, typologies, project types), hence all project environments
- All project managers/project team members were capable of using the tool and methodology, although with further training on its application

- There was a strong willingness of project managers/project team members to utilize the *Feasibility Formula*™ in order to improve the likelihood of project success

Upon reflection, I conclude from the findings that I have achieved my aim in this research and have developed a tool and methodology in the *Feasibility Formula*™ that contributes to the organization and to the project management discipline in its ability to assess a project's relevance to the organization and its likelihood of success, and to facilitate the required decision making.

6.29 Summary of the Chapter

This chapter has been extensive in its presentation of six case studies and an inter-case analysis.

Each case study was described in detail, including: a description of the organization and project, how the researcher made contact and gained access, the structure of the organization and its culture; a description of the project, its typology, objectives and lifecycle; the project organization and roles of the project team members; decision making within the organization; results of the completed *Feasibility Formula*™, the effectiveness of the tool and methodology; and the willingness and capability of the project manager and/or project team in using the *Feasibility Formula*™.

This chapter demonstrates the researcher's ability in data gathering and assessment of the data, and further evidence that the case studies were well-constructed to ensure validity and reliability – i.e. the researcher used the correct measures for the concepts being studied and used multiple pieces of evidence from multiple sources. Multiple organizations of different sizes and maturity levels in multiple industries added complexity to the research. The inter-case analysis and literature review assisted in ensuring external validity. Further, data was stable, accurate and pointed to strong reliability within the research.

The research concluded that while the findings appeared generalizable beyond the immediate cases in yielding the same conclusion regarding the *Feasibility Formula*™, namely its relevance and value, despite variations in organizations, stakeholders, sector, type of industry, project typology and nature of the project, the aim was to understand the underlying objectives and principles of the organization and not to create a "one size fits all" measure.

7. CONCLUSION

As summarized in *reflections of the researcher* in the previous chapter, the fundamental aim of my research was to develop a pre-project feasibility tool and methodology that would contribute to both the organization and the project management profession in its ability to facilitate the necessary due diligence to determine the alignment of a project with an organization's objectives, inform the likelihood of a successful project outcome, and support effective decision making.

It was my quest to discover the relevance, applicability and value of the *Feasibility Formula*™ tool and methodology that I had created with a view to increasing the probability of project success.

In reviewing a number of research methods, I had chosen ones that I believed would best support the collection and analysis of relevant data, namely a comprehensive literature review, robust action research and iterative methodology refinement, and detailed case studies.

7.1 Summary of the Research Project

The *Feasibility Formula*™ methodology enables project stakeholders to come together in order to determine the feasibility of a project and its likely outcome. It further ensures, through the discussion and analysis process, that the project is aligned to an organization's strategy and that it has the potential to meet stakeholder expectations. The *Feasibility Formula*™ tool defines and weights the organization's goals, and measures the project's ability to satisfy these goals, and in doing so, provides an indication of likelihood for project success or failure.

7.1.1 Themes of the research

The research proposition supposes that: *The practice of project management will be advanced by the Feasibility Formula™, a pre-project feasibility determination tool and methodology which seeks to determine alignment of a project with an organization's objectives and support stakeholder decision making. A focused and effective pre-project feasibility tool and stakeholder engagement methodology is necessary to facilitate formulation of perceptions for a likely project outcome and enable informed decision making.*

The research embodied four themes: the first theme was to define project success and determine the link between pre-project feasibility determination and project success. Two questions were developed to address this theme: 1. *Does the alignment of project goals with the strategy of an organization influence project success?* 2. *What are the characteristics of effective decision making in a pre-project environment?* This first theme was addressed in the literature review through an examination of project success, project alignment with an organization's strategy, and characteristics of effective decision making.

From the literature review, it was concluded that there is established knowledge in the definitions of project success and project management, although no consensus on success criteria, caused by a universal inability to establish objectives that would be broadly applicable. The *Feasibility*

Formula™ addresses this issue in supporting organizations to establish specific objectives in advance of proceeding with a project, thereby increasing its likelihood of success.

Further, project success was linked to strategic management in the literature, but there remains a gap in the knowledge related to the tools and methodologies that would facilitate same. The *Feasibility Formula*™ is a tool and methodology that links the strategies of an organization with project goals, and therefore presents a likely outcome.

The second theme of the research was the testing and refinement of the *Feasibility Formula*™ methodology and tool to support effective decision making. The third theme was to determine the effectiveness of the *Feasibility Formula*™ in a variety of project types. The research question developed to address both the second and third themes was: *Does the use of a pre-project methodology supported by a tool such as the Feasibility Formula*™ *increase the effectiveness of decision making?* The question was answered through action research and comprehensive iterative methodology refinement.

The fourth theme was to determine the skills and willingness of project managers and/or project teams to utilize the tool in support of effective project outcomes. The question posed and answered was: *How capable and willing is the project manager and/or project team in using the Feasibility Formula*™ *methodology and tool to engage with decision makers?*

Table 7.1.1 – Summary of Research Themes

Research Theme 1 *Project Success and Failure*	**Research Theme 2** *Refining the Feasibility Formula*™	**Research Theme 3** *Determining Feasibility Formula*™ *effectiveness*	**Research Theme 4** *Project Manager and/or Project Team capabilities*
Question 1 **Objectives 1, 2** Project success and alignment of project with organization's strategy AND **Question 2** **Objective 3** Existing feasibility determination and decision making practices in project management	Prototype *Feasibility Formula*™ Leading to **Question 3** **Objective 4** Refined and tested *Feasibility Formula*™ methodology and tool	Effectiveness of *Feasibility Formula*™ **Question 3** **Objective 5** For specified project types **Question 3** **Objective 6** Measures of effectiveness	**Question 4** **Objective 7** Capability and willingness of PM and/or project team to use the methodology and tool

7.1.2 Findings of the Research

Key findings of the research are:

- The vast majority of organizations do not undertake any significant due diligence prior to undertaking a project.
- Few organizations utilize a formal tool in support of project decision making, and most do not define the organization's objectives and seek alignment with project goals.
- There is an absence of stakeholder engagement around project decision making in organizations.
- The greatest value provided by the *Feasibility Formula*™ tool and methodology was its ability to generate relevant discussion among stakeholders, an exercise missing from organizations.
- The *Feasibility Formula*™ tool and methodology is applicable to all project environments, as it was found to be effective by all organizations studied (i.e. all sectors, industries, typologies, project types).
- The tool and methodology is conducive to being utilized by project managers/project team members, although with further training on its application and facilitation techniques.
- There is a strong willingness of project managers/project team members to utilize the *Feasibility Formula*™ in order to improve the likelihood of project success.

7.1.3 New Scientific Findings

The purpose of the research was to present a tool and method for performing project selection based on the relative value (i.e. goal alignment) to the organization of the proposed project and its likelihood of success. It contributes to new scientific findings as:

- An improved technique for assessing project viability and making project selections that is not complex, but rather easy to understand and utilize.
- The resulting score produces a measure of project value that accounts for value as a function of both "what's important" to the organization and the extent to which the project is aligned with "what's important".
- Much of the 11 criteria are novel (e.g. organizational maturity; brand, compliance) developed from experience and research participant input through the iterative tool and methodology refinement
- Represents an alternative, yet robust treatment of an often informal and unstructured approach to project assessment by stakeholders.
- Methodology fully reliant on engagement of stakeholders and essentially peer review through application of the tool.
- The tool is intended to be flexible, and allow manual manipulation to permit population of goals, as well as the rejection of some categories, as relevant to the organization.
- Redefines the project lifecycle: necessary to undertake pre-project feasibility determination *before* project "Initiation"

- Relevance, timeliness and practical importance to "real world" managers has merited ongoing interest and continued deployment of the *Feasibility Formula*™.

7.1.4 Acceptance of Hypothesis

The formulation and analysis of the research questions in response to the research aim and satisfied objectives has led the researcher to accept the stated hypothesis:

> *The Feasibility Formula™ tool and methodology contributes to both the organization and the project management profession in its ability to inform the likelihood of a successful project outcome and support effective decision making.*

Upon holistic reflection of the research work, I conclude from the findings that I have achieved my aim in this research and have developed a tool and methodology in the *Feasibility Formula*™ that contributes to the organization and to the project management discipline in its ability to assess a project's relevance to the organization and its likelihood of success, and to facilitate the required decision making.

The research concluded that while the findings appeared generalizable beyond the immediate cases in yielding the same conclusion regarding the *Feasibility Formula*™, namely its relevance and value, despite variations in organizations, stakeholders, sector, type of industry, project typology and nature of the project, the aim was to understand the underlying objectives and principles of the organization and not to create a "one size fits all" measure.

7.2 Contributions of this Research

This research has provided significant and original contribution in the form of a new tool and methodology developed to make advances on current theories and practices for pre-project feasibility determination in project management. The ability of the *Feasibility Formula*™ to facilitate stakeholder decision making through the identification of an organization's strategy and objectives, and the project's ability to meet these objectives is novel. Further, it was lauded as a tool and methodology that would be prescribed for use in many of the participating organizations, hence it can be assumed to have broader applicability in most project environments.

7.2.1 Value to the organization

The impetus for this research is the researcher's belief that pre-project feasibility determination contributes to project success, and that the absence of such due diligence is one of the major contributors to project failure.

The *Feasibility Formula*™ tool and methodology provides value to the organization as it:

- ensures that the projects are fully assessed to ensure alignment with organizational goals
- enables the prioritization of projects among many under consideration
- allows for adjustment to project scope and other criteria in order to support increased likelihood of project success

- shows likely areas of risk to the organization and consideration for mitigation if the project is undertaken
- permits early project termination if applicable (avoiding loss of resources, time and money)
- provides stakeholders with a view to those elements of a project which may need to be revisited along the lifecycle to ensure continued satisfaction of criteria
- engages stakeholders, fosters collaboration, supports team and consensus building

7.2.2 Value to stakeholders/decision makers

Stakeholders benefit from the *Feasibility Formula*™ tool and methodology as it provides an opportunity for stakeholders to:

- express themselves and ensure their expectations are known
- learn about the organization and other stakeholders' perspectives through the process itself
- seek clarity related to the organization's strategy and objectives
- become part of an integrated project team
- enhance communication among team members
- understand the expectations of others
- contribute to the organization in a meaningful way
- assess the project both within and outside of their functional area

Decision makers within the organization benefit from having the necessary data and required stakeholder input to inform their decision. They can further have greater confidence in the accuracy of their decision as a result of the robust process and tool.

7.2.3 Value to the project manager

The *Feasibility Formula*™ provides value to the project manager as it presents a simple and effective methodology to assess project feasibility before the project planning process is undertaken. As a result, the project manager can have greater confidence in the project's ability to proceed with the support of the stakeholders.

The process itself also permits the project manager to engage the stakeholders and develop a relationship at the beginning of the project cycle. The relationship with individual stakeholders will then be in a better position to be nurtured. Stakeholders and project managers can feel more comfortable in approaching each other in conversation regarding aspects of the project. It can also provide the project manager with a view as to which stakeholders he/she should spend more time with in order to understand and manage expectations. Further, he/she can also learn which stakeholder(s) can be a valuable resource or asset to the success of the project.

Through the methodology and tool, the project manager is also introduced to potential risk areas for the organization and can now manage and mitigate these risks at the project level.

Most importantly, the project manager now has the ability to manage the project with an understanding of the organization's goals, and what the project is meant to achieve as an outcome.

Beyond the project manager, the project team now has a better understanding of the stakeholder community, and its members' management styles, perspectives and expectations. They will, both individually and collectively, learn about these stakeholders and the relationships that exist or form among them. The project team members will be in an optimum position to influence and manage these relationships. Ultimately, the project team will have a comprehensive understanding of the organization's goals and the project's role in satisfying those goals.

It is the combined value that the *Feasibility Formula*™ brings to the project manager and project team that supports an increased likelihood of project success.

7.2.4 Value to the project management profession

The *Feasibility Formula*™ methodology and tool brings value to the project management profession in raising the awareness of the need for pre-project feasibility determination in an effort to increase the number of successful project outcomes. The *Feasibility Formula*™ provides knowledge leadership in consideration of the project lifecycle: project planning begins *before* the Initiation phase, and actually commences with the feasibility determination and a measurement of the project's alignment to its sponsoring organization and likelihood of success.

The tool and methodology also contributes to the project management profession by further developing the role of the project manager. Through early involvement and stakeholder engagement, the project manager's reputation is enriched by their ability to contribute to the strategic needs of the organization, thereby elevating the profession to a new level from the traditional tactical, technical level.

The contribution to the project management profession can be summarized as reducing the risk of project failure and resulting waste of financial and human resources. Through an improvement in the number of cases of project success the reputation of the project management profession will be enhanced.

7.2.5 Addressing gaps in the research

There are a number of gaps in the research to be acknowledged, including:

- The literature review was lacking in research available related to: a) pre-project feasibility processes, practices, tools and methodologies; and b) decision making processes, tools and methodologies specific to the pre-project environment. In some respects it must be acknowledged that the *Feasibility Formula*™ is novel and "breaking new ground".

- The research did not permit any benchmarking or tracking of results as to actual project outcome of success or failure, hence a determination of the practical effectiveness of the

Feasibility Formula™, as none of the projects were completed prior to the writing of this dissertation.

- Establishing the likelihood of project success through the *Feasibility Formula*™ tool and methodology at the pre-project stage also assumes that project execution (in the traditional sense) will be successful. Project success therefore remains highly dependent on a successful implementation.

- The results of the scoring produced with the aid of the *Feasibility Formula*™ tool are purely interpretive and not absolute (although this is not its intent; rather it is to generate discussion and consensus regarding "what matters most" and the project's ability to satisfy these objectives).

7.3 Recommendations for Future Research

Further benefit would be realized by organizations and the project management discipline if additional research were undertaken to:

- Assess projects at completion, determine success or failure and link to usage of the tool and methodology where it was applied; similarly compare against like projects that did not use the tool and methodology to determine if usage of the *Feasibility Formula*™ supports project success.

- Determine the usefulness of the tool and methodology in comparing, contrasting and prioritizing projects at the portfolio level.

- Research can continue to test the applicability and effectiveness of the *Feasibility Formula*™ tool and methodology in other project types and industries.

- Examine other uses of the tool and methodology to identify and/or classify project types (e.g. strategic project (capital) vs. maintenance project (operations)).

- The active engagement of stakeholders from the participating organizations permitted the collection of data on the organization itself during the research, including information about the organization's governance, politics and the many challenges and opportunities that the organization faces; this suggests that the *Feasibility Formula*™ tool and methodology could be modified to assess "organizational maturity and readiness" within other areas/aspects of the business.

- Actual outcomes of the projects can form the basis for future assessment of the evaluation process; comparing pre-project feasibility to post project results, new data may emerge that can be used to improve and refine the project selection process using the *Feasibility Formula*™.

7.4 Summary of the Chapter

This chapter summarizes the research findings that address the research proposition, four research themes and research questions as posed. The value and contribution of the *Feasibility Formula*™ tool and methodology to the project management discipline and various stakeholders is presented.

The fundamental aim of my research was acknowledged as realized: a pre-project feasibility tool and methodology was developed that contributes to both the organization and the project management profession in its ability to facilitate the determination of alignment of project goals with an organization's objectives, inform the likelihood of a successful project outcome, and support effective decision making.

The findings presented were extensive and the *Feasibility Formula*™ tool and methodology was found to have broad application to project environments of varying characteristics.

Finally, a number of gaps in the research were addressed, with some recommendations for future research that would build upon the findings herein, as well as ensure the continued practical application of the *Feasibility Formula*™ tool and methodology in project environments.

BIBLIOGRAPHY

Association of Project Management, Directing change: A guide to governance of project Management, Association of Project Managers, London (2002), available at www.apm.org.uk.

ARCHER, N. P., and GHASEMZADEH, F. (1999): An integrated framework for project portfolio selection. *International Journal of Project Management*, *17*(4), 207-216.

BABBIE, E. (2013): The Practice of Social Research, 13th edition. [s.l.]: Cengage Learning Inc.

BAKER, B. N., MURPHY, D. C., and FISHER, D. (1983): Factors Affecting Project Success. In: CLELAND, DI and KING, WR: *Systems analysis and Project management*.

BARDACH, E. (1977): The Implementation Game. Cambridge, Mass.: MIT Press.

BELASSI, W. and TUKEL, O.I., (1996): A new framework for determining critical success/failure factors in projects. In: *International Journal of Project Management*, 1996, 14 (3), pp 141-151.

BERG, B. and LUNE, H. (2012): Qualitative Research Methods for the Social Sciences, 8th Edition. [s.l.]: Pearson Education Inc.

BLAIKIE, N. (2000): Designing Social Research. Cambridge, Mass: [s.n.].

BLANCHE, M., DURRHEIM, K., and PAINTER, D. (2006): Research in Practice: Applied Methods for the Social Sciences. [s.l.]: Juta and Company Ltd.

BOSSE, D.A., PHILLIPS, R.A., and HARRISON, J.S. (2009): Stakeholders, reciprocity, and firm performance. *Strategic Management Journal*, *30*(4), 447-456.

BOURNE, L. (2005): Project Relationship Management and the Stakeholder Circle™, RMIT University dissertation, retrieved on 12/16/11 from: http://mosaicprojects.com.au/PDF_Papers/P021_L_Bourne_Thesis.pdf.

BURGESS, R. (2002): In the Field: An Introduction to Field Research. [s.l.]: Routledge.

Canadian Management Accounting Society [1998]: IT failures costing billions. [s.l.]: CMA Management.

CHAOS Report (1994), The Standish Group, http://www.standishgroup.com/sample_research/chaos_1994_1.php

CHAOS Report (2004), The Standish Group, Massachusetts, Standish Group International.

CLELAND, D. and KERZNER, H. (1985): A Project Management Dictionary of Terms. New York: Van Nostrand Reinhold.

COOKE-DAVIES, T. (2002): The Real Success Factors on Projects. In: *International Journal of Project Management*, 2002, 20, pp 185-190.

COOKE-DAVIES, T. (2009): Front-end alignment of projects – doing the right project. In: WILLIAMS, T. et al: *Making Essential Choices with Scant Information*. [s.l.]: Palgrave MacMillan.

CRANE, A., MATTEN, D., and MOON, J., (2004): Stakeholders as citizens? Rethinking rights, participation, and democracy. *Journal of Business Ethics*, *53*(1-2), 107-122.

DEVETAK, I., GLAŽAR, S., and VOGRINC, J. (2010): The Role of Qualitative Research in Science Education. In: *Eurasia Journal of Mathematics, Science & Technology Education*, 2010, 6 (1), 77-84.

DE WIT, A. (August 1988): Measurement of Project Success. In: *International Journal of Project Management*, Volume 6, Issue 3, pp. 164-170.

DICKEL, K., MASON, R., and ROWE, A. (1982): Strategic Management and Business Policy: A Methodical Approach. [s.l.]: Addison-Wesley Publishing Company.

DINSMORE, P. (1999): Winning in business through enterprise project management. New York: American Management Association.

DREW (2007), Ethical Issues in Conducting Research, Sage Publishing Inc., http://www.sagepub.com/upm-data/26094_3.pdf retrieved on 6.22.2014.

DRUCKER, P., BURTON, M., JERSEY, WC, and CLAMAN, J., Effective Decisions, BNA Communications, 1968, retrieved on 8/17/14 from http://hbr.org/1967/01/the-effective-decision/ar/1.

DUMONT, P., GIBSON Jr., G., and FISH, J. (1997): Scope Management Using Project Definition Rating Index. In: *Journal of Management in Engineering*, September/October 1997.

DVIR, D., LIPOVETSKY, S. SHENHAR, A., and TISHLER, A., In search of project classification : a non-universal approach to project success factors, 1998, retrieved on 10/1/11 from http://www.reinventingprojectmanagement.com/material/other/11.%20In%20search%20of%20classification.pdf.

FOWLER, F. (2014): Survey Research Methods, 5th edition. [s.l.]: Sage Publications Inc.

FREEMAN, R. E. (1984): Strategic Management: A Stakeholder Approach, Pitman Publishing.

GALLAGHER, S. (1992): Hermeneutics and Education. New York: State University of New York Press.

GAREIS R. (1990): Handbook of management by projects. Vienna: Manz.

GEMUENDEN, H. and LECHLER, T., (1997), Success Factors of Project Management : The Critical Few, IEEE, retrieved on 10/1/11 from pdf from powercam, http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=653418

GEORGIEVA, S. and ALLAN, G. (2008): Best Practices in Project Management Through a Grounded Theory Lens. In: *Electronic Journal of Business Research Methods,* 2008, 6, pp. 43-52.

GREENWOOD, M.: Stakeholder engagement: Beyond the myth of corporate responsibility. *Journal of Business Ethics*, *74*(4), 315-327.

GRIX, J. (2002): Introducing Students to the Generic Terminology of Social Research. [s.l.]: Political Studies Association.

HENRIKSEN, A.D., and TRAYNOR, A.J. (1999): A practical R&D project-selection scoring tool. *Engineering Management, IEEE Transactions on*, *46*(2), 158-170.

HIGGINS, J. C., and WATTS, K. M. (1986): Some perspectives on the use of management science techniques in R&D management. *R&D Management*, *16*(4), 291-296.

HYVARI, I. (2006): Success of Projects in Different Organizational Conditions. In: *Project Management Journal*, September 2006, 37 (4), pp. 31-41. PDF retrieved from www.highpoint.edu on 10/17/11.

JIANG, J., KLEIN, G., WU, S., and LIANG, T. (2009): The relation of requirements uncertainty and stakeholder perception gaps to project management performance. In: *The Journal of Systems and Software*, 2009, 82, pp 801-808.

JIANG, J. and KLEIN, G., (1999), *Risks to different aspects of system success*, Information and Management, pp 263-271.

JUGDEV, K. and MÜLLER, R. (2005): A Retrospective Look at Our Evolving Understanding of Project Success. In: *Project Management Journal*, December 2005, 36 (4), pp. 19-31.

KVALE, STEINAR (1996): Interviews: An Introduction to Qualitative Research Interviewing. Thousand Oaks, CA: Sage.

LAVAGNON A. IKA (2009): Project Success as a Topic in Project Management Journals. In: *Project Management Journal*, December 2009.

LIM, C. and MOHAMED, M. (1999): Criteria of project success: an exploratory re-examination. In: *International Journal of Project Management*, August 1999, 17 (4), pp. 243-248.

LUSTHAUS, C., ADRIEN, M., and PERSTINGER, M. (1999): Capacity Development: Definitions, Issues and Implications for Planning, Monitoring and Evaluation. In *Universalia Occasional Paper*, September 1999, 35.

MITCHELL, R.K., AGLE, B.R. and WOOD, D.J. (1997): Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of management review*, *22*(4), 853-886.

MORRIS, P. (1983): "Managing Project Interfaces-Key Points for Project Success". In: *Project Management Handbook* (CLELAND, D. I. and KING, W. R.). New York: Van Nostrand Reinhold. pp. 3-36.

MORRIS, P., (2000), Researching the unanswered questions of Project Management, Proceedings of the PMI Research Conference, April, 2000, PDF retrieved on 10/16/11 from www.indeco.co.uk.

MORRIS, P. (2009): Implementing strategy through project management: the importance of managing the project front-end. In *Making Essential Choices with Scant Information* (WILLIAMS, T. et al). [s.l.]: Palgrave MacMillan.

MUNNS, A. and BJEIRMI, B. (1996): The role of project management in achieving project success. In: *International Journal of Project Management*, 1996, 14 (2), pp. 81-87.

NEWMAN, I. and BENZ, C. (1998): Qualitative-Quantitative Research Methodology: Exploring the Interactive Continuum. [s.l.]: Southern Illinois University.

PATANAKUL, P., LEWWONGCHAROEN, B., and MILOSEVIC, D. (2010): An empirical study on the use of project management tools and techniques across project life-cycle and their impact on project success. In: *Journal of General Management*, 2010, 35 (3). [s.l.]: The Braybrooke Press Ltd.

PAWAR, M. (2004): Data Collecting Methods and Experiences: A Guide for Social Researchers. [s.l.]: New Dawn Press Inc.

PINTO, J.K. and SLEVIN, D.P. (1988): Critical Success Factors in Effective Project Implementation, Project Management Handbook. Wiley Online Library. PDF retrieved on 10/17/11 from www.nida.ac.th.

POLONSKI (2004): Ethical Considerations, Sage Publishing Inc., http://www.sagepub.com/upm-data/4999_Polonski_Chapter_5.pdf retrieved on 6.22.2014.

Project Management Institute (2013): A Guide to the Project Management Body of Knowledge (PMBOK Guide), 5th edition. [s.l.]: Project Management Institute.

PU, X., LI, J., and ZHU, H., A cross-national study of success factors in innovation project: China and western developed countries, Tsinghua University , Beijing, retrieved on 10/15/11 from www.3.qeh.ox.ac.uk/slptmd/Li_Pu_Zhu.pdf.

RAJASEKAR, S., PHILOMINATHAN, P., and CHINNATHAMBI, V., Research Methodology, 2006.

REYNOLDS, PAUL D. (1971): A primer on Theory Construction. New-York: Bobbs-Merrill.

SARANTAKOS, S. (1998): Social Research. [s.l.]: MacMillan.

SAUNDERS, M., LEWIS, P., and THORNHILL, A. (2009): Research Methods for Business Students, 5th edition. Harlow: FT/Prentice Hall.

SCHMUCK, R. (2009): Practical Action Research, 2nd edition. [s.l.]: Corwin Press.

SHENHAR, A., LEVY, O., and DVIR, D. (1997): Mapping the Dimensions of Project Success. In: *The Professional Journal of the Project Management Institute*, June 1997, 28 (2). Retrieved on 10/2/11 from: http://www.reinventingprojectmanagement.com/material/other/7.%20Mapping%20dimensions%20of%20projects%20success%20PMJ%201997.pdf

SHENHAR, A., DVIR, D., LEVY, O., and MALTZ, A. (2001): Project Success: A Multidimensional Strategic Concept. In: *Long Range Planning Journal*.

SHENHAR, A. and DVIR, D. (2007): Reinventing Project Management: The Diamond Approach to Successful Growth and Innovation. [s.l.]: Harvard Business Review Press.

SLATER, S. and NARVER, J. (1995): Market Orientation and the Learning Organization. In: *Journal of Marketing*, July 1995.

SLOVIC, P., GREGORY, R., (2000), Ecological Economics, 34, 315 – 331.

SODERLUND, J. (2004): Building theories of project management: past research, questions for the future. In: *International Journal of Project Management*, 2004. PDF retrieved on 10/17/11 from www.kth.se.

THOMAS, D. and BOSTROM, R. (2008): Building Trust and Cooperation through Technology Adaptation in Virtual Teams. In: *Information Systems Management*, 2008, 25 (1), pp. 45-56.

THOMAS, J., DELISLE, C., and JUGDEV, K. [n.a.]: Selling Project Management to Senior Executives: Framing the Moves that Matter. Pennsylvania: Project Management Institute.

TORP, O., AUSTENG, K., and MENGESHA, W.J., Critical Success Factors for Project Performance, Norwegian University of Science and Technology, retrieved from www.concept.ntnu.no/.../058_2004_torp_critical_succes_factors on 10/17/11.

TURNER, J.R. (1993): The Handbook of Project-Based Management. England: McGraw-Hill.

TURNER, J.R. and MULLER, R. (2005): The Project Manager's Leadership Style as a Success Factor on Projects: A Literature Review. In: *Project Management Journal*, June 2005, 36 (1), pp. 49-61.

VROOM, V. and JAGO, A. (1974): Leadership and Decision Making. [s.l.]: Decision Sciences Institute. Retrieved on 8/17/14 from http://bgwomeninict.org/language/bg/uploads/files/documents__0/documents__ccdce0783e140b6ff1b684435f435039.pdf

WILLIAMS, T. and SAMSET, K. (2010): Issues in Front-End Decision-Making on Projects. In *Project Management Issue*, 2010.

YIN, R. (2003): Case Study Research: Designs and Methods, 3rd edition. [s.l.]: Sage.

10.14751/SZIE.2015.048

APPENDIX 1 – FEASIBILITY FORMULA™ – VERSION 1 (PROTOTYPE)

10.14751/SZIE.2015.048

Feasibility Formula™ Worksheet

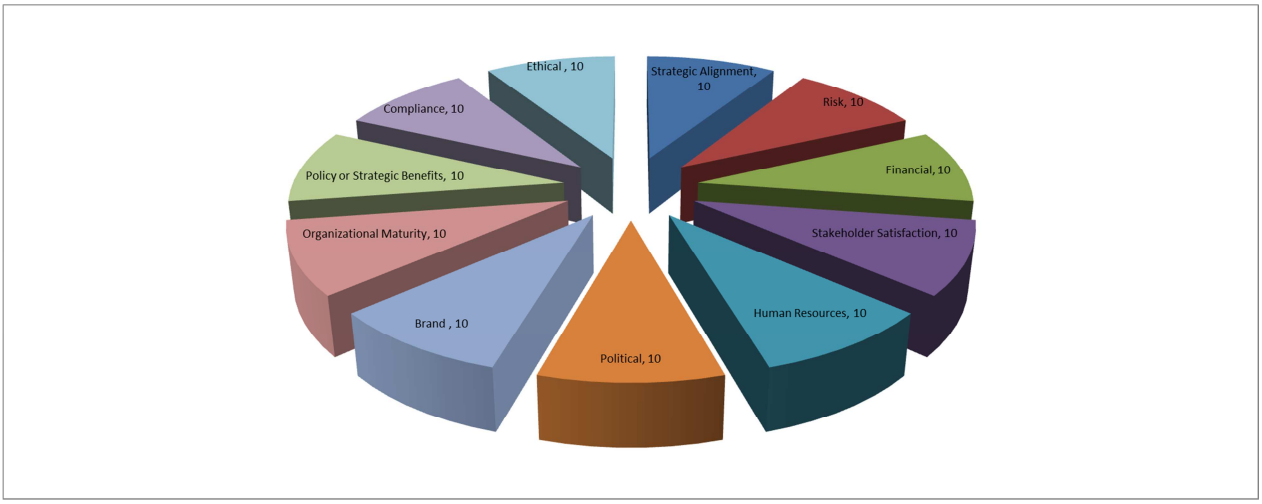
	Objectives = Decision Criteria	Description	Rating of Importance										Criteria	Satisfies Criteria										Aggregate Score
	"What Matters"		1	2	3	4	5	6	7	8	9	10	"What Matters Most"	1	2	3	4	5	6	7	8	9	10	"Extent that criteria satisfies what matters most"
1	Strategic Alignment	Project meets organizational strategy and objectives.											Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).											
2	Risk	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.											Risk Assessment outcome considered satisfactory based on risk mitigation measures identified.											
3	Financial	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.											Satisfactory outcome of financial feasibility exercise(s) (e.g. ROI, IRR, NPV, Proforma calculations)											
4	Stakeholder Satisfaction	Project outcome to meet stakeholder objectives.											Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.											
5	Human Resources	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.											Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.											
6	Political	Project meets political needs and satisfies the decision maker.											Outcome of political scan demonstrates project's ability to meet political needs.											
7	Brand	Project meets organizational objectives related to brand awareness, development, corporate image.											Favourable review of project alignment to corporate image and branding strategy.											
8	Organizational maturity	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.											Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.											
9	Competitive Positioning	Project outcome positively influences organization's competitive positioning.											Satisfactory outcome of SWOT analysis including project impact consideration.											
10	Policy or Strategic Benefits	Project outcome influences organizational policy and/or strategy.											Satisfactory outcome of current policies review with favourable project impact on future policies.											
11	Regulatory Compliance	Project complies with regulatory and technical requirements.											Assessment of required regulatory measures and project's ability to satisfy.											
12	Legal Compliance	Project complies with legal and sanctioned requirements.											Assessment of legal requirements and project's ability to satisfy.											

10.14751/SZIE.2015.048

APPENDIX 2 – FEASIBILITY FORMULA™ – VERSION 4 (FINAL)

Feasibility Formula™ Worksheet

	Objectives = Decision Criteria "What Matters"	Description	Rating of Importance 1 2 3 4 5 6 7 8 9 10 "What Matters Most"	Project Criteria	Satisfies Criteria 1 2 3 4 5 6 7 8 9 10 "Extent that project satisfies what matters most"	Aggregate Score
1	**Strategic Alignment**	Project meets organizational strategy and objectives.	10	Favourable assessment of anticipated project outcome in supporting organization's objectives as outlined in business plan or other strategy document(s).	10	**10**
2	**Risk**	Project meets organizational tolerance for risk and/or identified risks may be avoided, transferred, mitigated or accepted.	10	Risk Assessment outcome considered satisfactory based on risk mitigation measures.	10	**10**
3	**Financial**	Project satisfies organizational goals re investment, cost reduction, cost management, cost mitigation.	10	Satisfactory outcome of financial feasibility review.	10	**10**
4	**Stakeholder Satisfaction**	Project outcome to meet stakeholder objectives.	10	Expectations of stakeholders (i.e. conceiver, user, financier, developer, deliverer) identified and considered achievable.	10	**10**
5	**Human Resources**	Organization has the human resources capacity and capability to deliver the project and/or has the ability to source the required human resources.	10	Satisfactory identification and availability of capable internal and/or external resources to plan and deliver the project.	10	**10**
6	**Political**	Project meets political needs and satisfies the decision maker.	10	Outcome of political scan demonstrates project's ability to meet political needs.	10	**10**
7	**Brand**	Project meets organizational objectives related to brand awareness, development, corporate/organizational image.	10	Favourable review of project alignment to corporate image and branding strategy.	10	**10**
8	**Organizational Maturity**	Capacity of organization to undertake project given capability, focus of business efforts, maturity level and business performance.	10	Identification of satisfactory capacity following assessment of the organization's performance and any significant initiatives/changes in progress and/or planned.	10	**10**
9	**Policy or Strategic Benefits**	Project outcome influences organizational policy and/or strategy.	10	Satisfactory review of project support of and alignment with new or current policies.	10	**10**
10	**Compliance**	Project complies with regulatory and legal requirements.	10	Assessment of required regulatory measures and legal requirements and project's ability to satisfy.	10	**10**
11	**Ethical**	Project satisfies ethical considerations.	10	Favourable review of project alignment with ethical standards, practices and policies of the organization.	10	**10**
					TL Score	**10**



10.14751/SZIE.2015.048

APPENDIX 3 – LETTER TO PARTICIPANTS

Date

Addressee

Title

Organization

Dear xxx:

Re: Request to participate in Ph.D. research

I am a candidate at the Ph.D. School of Management and Business at Szent István University in Gödöllő (Budapest), Hungary.

I am writing to request your assistance, and that of your organization, in providing input to support my research project, the purpose of which is: *to provide support for stakeholders, the project manager and/or project team in determining the feasibility of a project through the use of a decision making tool called the Feasibility Formula*™. The tool will advance the practice of project management by developing a greater understanding of pre-project feasibility determination through organizational alignment and related decision making, and its effect on perceived outcomes of project success or failure.

As my research topic is practical in nature, I must rely on the willing participation of organizations and project stakeholders. The opportunity to work with yourself as "Sponsor", and your team members, will be of great assistance.

Accordingly, I am requesting your organization's participation as follows:

1. Sponsor to identify and describe a new project under consideration (or a project entering a new phase) within the organization that is considered significant within your organization (i.e. cost, scope, risk, complexity). Please identify the project manager (i.e. PM and project team must be assigned).

2. One meeting with Sponsor (in person or by phone) to explain the tool and methodology, and to identify, survey and schedule workshop participants (e.g. representatives from project team: project manager, decision makers, operations, communications, technical, procurement, HR, finance).

3. Interviews – Researcher to interview Sponsor and Project Manager regarding current and desired practices within the project environment; a formal questionnaire to facilitate the interview will be provided.

4. Workshop(s) – Stakeholders to participate in a number of exercises including: be introduced to the tool and critique its content for the purpose of developing its broad applicability to

projects within your organization; preliminary application to the identified project to be undertaken; participants to provide feedback to refine the tool based on its practical application and to analyse and evaluate its effectiveness.

5. One meeting with Sponsor (in person or by phone) to obtain final feedback.

Please note, both during and after the course of my research activities, that I will fully respect the privacy of your organization. All comments, input and data collected will be held in the strictest of confidence.

If you would like any further clarification or validation of my research, please contact my supervising professor, Dr. Vasa László, Szent István University, Faculty of Economics and Social Sciences, vasa.laszlo@gtk.szie.hu, H-2103 Gödöllő, Páter K. u. 1. Hungary, Tel: +36 28 522000/2081.

While your contribution is strictly voluntary, I would very much appreciate your participation in this research. As such, I will contact you shortly to confirm your participation and to schedule the research activities at your convenience.

Sincerely,

Lisa Chillingworth
Ph.D. Candidate
lisa.chillingworth@mhpm.com
613-862-6470

10.14751/SZIE.2015.048

APPENDIX 4 – EVALUATION SHEET FOR WORKSHOP PARTICIPANTS

Evaluation Sheet

Stakeholder Identification

Please briefly describe your role:

1. **In your role, rate the importance of decision-making related to project outcomes:**

   1-not important 2 3 4 5-very important

2. **From your perspective, rate the importance of the identification and prioritization of your organization's objectives and criteria in the achievement of project success:**

   1-not important 2 3 4 5-very important

3. **Rate the importance of members of your organization attaining a common view and understanding of what is essential and likely achievable with respect to project outcomes:**

   1-not important 2 3 4 5-very important

4. **Have you ever used a pre-project feasibility tool before?** Yes □ No □

5. **Rate your confidence in decision-makers being able to identify and prioritize organizational criteria and the project's ability to satisfy this criteria using this methodology and tool:**

   1-not confident 2 3 4 5-very confident

6. **Rate the likelihood of you or your group using today's workshop method and tool again:**

   1-not likely 2 3 4 5-very likely

7. **What worked well?**

8. **What needs improving? How could it be improved?**

10.14751/SZIE.2015.048

APPENDIX 5 – INTERVIEW QUESTIONNAIRE – EXECUTIVE/SPONSOR AND PROJECT MANAGER

Executive/Sponsor Questionnaire

Stakeholder Identification

1. **Please describe your role in the organization.**
2. **What is your background - before joining this organization?**
3. **What is the functional area/department that you are responsible for?**
4. **What is your role (and that of your team) in the project?**
5. **How have you reached decisions in the past re go/no go for a project?**
6. **Have you ever used a project feasibility determination tool or other aid to facilitate decision making around a project?**
7. **Have you ever considered your organization's objectives and the extent to which the project is aligned with them during your assessment?**
8. **Is it typical that you and other project stakeholders would engage in discussion to support decision making around the project?**
9. **How would you describe a successful outcome for the project?**
10. **Describe a project that was unsuccessful in your organization (from inception).**
11. **How would you describe the competency of the project manager and/or project team in executing the project? In facilitating the decision making process?**

Project Manager Questionnaire

PM Identification

1. **Please describe your role in the organization.**
2. **What is your background - before joining this organization?**
3. **What is the functional area/department or PMO to which you report?**
4. **Describe the project organization within the broader organization.**
5. **What is your specific role in the project?**
6. **Describe the project team.**
7. **Have you ever led or participated in the past re go/no go decisions for a project?**
8. **Have you ever used a project feasibility determination tool or other aid to facilitate decision making around a project?**
9. **Have you ever considered your organization's objectives and the extent to which the project is aligned with them during your assessment?**
10. **Is it typical that you and other project stakeholders would engage in discussion to support decision making around the project?**
11. **Do you experience any impediments to project decision making in your organization?**
12. **How would you describe a successful outcome for the project?**
13. **Describe both a project that was successful and unsuccessful in your organization (from inception).**
14. **How would you describe the competency of the project team in executing the project? In facilitating the decision making process?**

10.14751/SZIE.2015.048

APPENDIX 6 – WORKSHOP PRESENTATION – AN INTRODUCTION TO THE *FEASIBILITY FORMULA*™

Project Success and the Feasibility Formula™

Lisa Chillingworth
Ph.D. candidate
Szent István University

Workshop Agenda

Present dissertation objectives & research plan

Introduce methodology & tool

Test drive the tool

Obtain feedback as input for next version

Evaluation

Project Success & Failure

31.1% of projects are abandoned or cancelled before completion (i.e. total loss)

52.7% of projects average delivery of ½ of their planned functionality AND cost 2x their original estimates

16.2% of projects are completed successfully (defined as delivery all of the planned functionality, on time and within budget)

Source The CHAOS Report(1995), The Standish Group,

Projects don't fail at the end.

They fail at the beginning.

Project Management

Initiation
- Define Project
- Develop Project Charter
- Assign Project Manager

Planning
- Refine Project Scope
- Develop Schedule
- Assign Resources
- Establish Costs
- Determine Quality
- Assess Risk

Execution
- Implement Project Scope
- Manage Schedule
- Manage Resources
- Managel Costs
- Quality Assurance
- Assess Risk

Monitoring & Controlling
- Assess & Administer Scope Changes
- Maintain Schedule
- Control Cost
- Mitigate Risk
- Facilitate Communications

Closing
- Verify Project Needs Satisfied
- Obtain Close-out Documentation
- Collect Lessons Learned
- Accumulate Historical Records & Archive

Importance of Pre-Project Feasibility

Most projects handed to PMs to implement with tendency to *jump straight to execution*.

Leads to a lack of: clear vision, alignment of stakeholders, issues identification, defined expectations/results and informed decision-making.

Pre-project feasibility - early identification, assessment and resolution of issues; permits a determination of project viability and likelihood of a successful outcome.

Research Work

- Development of a pre-project methodology and tool (the Feasibility Formula™) which enables the identification of organizational objectives and consideration of project alignment in support of successful project delivery.
- Resulting dissertation will establish a link between pre-project feasibility determination and decision making and perception of outcome of project success or failure.

Research Themes

1. To define project success and define its link with alignment of project goals and an organization's strategy.
2. Testing and refinement of the Feasibility Formula™ methodology and tool to support decision making.
3. Effectiveness of the Feasibility Formula™.
4. To determine the skills and willingness of project managers/project team to utilize the tool in support of effective project outcomes.

Research Objectives

1. To define project success.
2. To describe the relationship between effective pre-project feasibility determination and project success.
3. To identify current pre-project feasibility and related decision making practices.
4. To test and refine the Feasibility Formula™ methodology and tool.
5. To measure the effectiveness of the tool.
6. To evaluate its effectiveness in different project types
7. To examine the capability and willingness of the PM and/or project team to use the methodology and tool.

Research Questions

1. Does the alignment of project goals with the strategy of an organization influence project success?
2. What are the characteristics of effective decision making in the project environment?
3. Does the use of a pre-project methodology supported by a tool such as the Feasibility Formula™ increase the effectiveness of decision making?
4. How capable and willing is the project manager and/or project team in using the Feasibility Formula™ tool and methodology to engage stakeholders?

Research Framework

Research Theme 1	Research Theme 2	Research Theme 3	Research Theme 4
Project Success and Failure	*Refining the Feasibility Formula™*	*Determining Feasibility Formula™ effectiveness*	*Project Manager and/or Project Team capabilities*
Question 1 **Objectives 1, 2** Project success and alignment of project with organization's strategy AND **Question 2** **Objective 3** Existing feasibility determination and decision making practices in project management	Prototype *Feasibility Formula™* Leading to **Question 3** **Objective 4** Refined and tested *Feasibility Formula™* methodology and tool	Effectiveness of *Feasibility Formula™* **Question 3** **Objective 5** For specified project types **Question 3** **Objective 6** Measures of effectiveness	**Question 4** **Objective 7** Capability and willingness of PM and/or project team to use the methodology and tool

Research Approach

- Qualitative approach: data collected through interviews, observation, workshops
- Action research and iterative methodology and refinement until participant satisfaction achieved or no further adverse comments
- Case studies of participant projects representing a variety of project types

Practical Benefits of Research

1. A project feasibility assessment tool that streamlines stakeholder decision making.
2. An increase in the number of successful projects, hence increased value to the project organization.
3. An increase in the level of competency of project managers.
4. Benefit to the profession through the increased likelihood of project success.

Methodology Appropriate to Project

The degree to which the formal pre-project feasibility process is helpful depends on the **nature of the project**.

	Cost	Duration	Complexity	Risk
Complex	> $1 M	> 18 mo.	High	High
Typical	$500k	12 mo.	Medium	Medium
	$200k	6 mo.	Low	Low
Simple	< $100k	< 3 mo.	Very Low	Very Low

Complex projects require much rigour; simple projects less rigour.

Source: Colin Lindsay

10.14751/SZIE.2015.048

10.14751/SZIE.2015.048

ACKNOWLEDGEMENTS

A dissertation is the sum of one's academic pursuits and the achievement of recognition at the end of a long journey. This is not a journey that is ventured alone, but one that requires the ongoing support, collaboration and guidance of many.

Accordingly, I would like to foremost thank my academic supervisor, Assoc. Prof. Laszlo Vasa, for his support and guidance, both before and during my studies. It was his friendship and encouragement that led me down the path to this highest degree, and to pursue it at Szent István University.

I would also like to acknowledge the support of Mr. Vince Baga and his assistance in the technical development of the Feasibility Formula™ tool.

The research would not have been possible without the generosity of the many participants, so I thank them all for their willingness, time, and feedback, which made the Feasibility Formula™ a much better tool.

Embarking on the Ph.D. would not have been possible without the enthusiasm and tenacity of Dr. Tamas Koplyay, my professor during graduate studies at the Université du Québec en Outaouais and co-author of numerous works together. Professor Koplyay continues to be an exceptional mentor, both in academia and in life.

My appreciation must also be expressed to Lynda Bourne, a woman I have not met, for developing a robust research approach to Ph.D. studies in the project management discipline, and to whom I am grateful for leading the way by providing a methodology and structure through her own work that I was able to emulate.

And finally, I thank my children for their inspiration, patience and understanding, and my husband and life partner, Mark Watson, for his intelligence, emotional support, love and generosity.