Program Management

A Life Cycle Approach

Edited by Ginger Levin, PMP, PgMP



Best Practices and Advances in Program Management Series

Program Management

A Life Cycle Approach

Best Practices and Advances in Program Management Series

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To the twenty-two experts who diligently shared their knowledge in the twenty-three chapters they contributed to this book. And to my husband, Morris Levin, for his continuing support and love.

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Preface

Although both programs and projects have been around almost as long as mankind, the discipline of program management is relatively new, and younger than that of project management. Some have stated it was recognized officially in the early 1940s, though the benefits of program management are evident from far earlier. An outstanding example of these benefits is the construction of Ancient Egypt's pyramids. There are more than 100 pyramids in Egypt, but the three most famous, the Pyramids of Giza, were built from 2589 to 2503 BC by approximately 20,000 to 30,000 workers. Because these three construction projects were carried out in one location, they were managed de facto as a program. The Ancient Egyptians would have acknowledged the importance of a program, because they realized the benefits of managing multiple projects and accompanying non-project work together as a program.

Program managers face far more challenges than project managers. Many of these challenges are due to a high number of stakeholders and the necessity of communicating at a variety of levels, both inside and outside an organization. As well, program managers interact with executives, members of a portfolio management group, and strategic planning staff to ensure that programs and their projects continue to support overall strategic goals and objectives. They determine whether programs should continue, be terminated, or require additional projects. Program managers therefore require a continual focus on program benefits to ensure that when programs end they can be easily transitioned and sustained to customers, end users, or operational groups to continue. Typically, program managers rely on a Program Management Office (PMO) and a governance structure for oversight and guidance.

Recognizing the increasing number of programs in organizations, both large and small, in public, private, academic, and non-profit sectors, the Project Management Institute (PMI®) in 2006, issued its first *Standard for Program Management*. Soon thereafter, the PMI® began an initiative for program managers to attain a Program Management Professional (PgMP®) credential, and 31 people received it in a pilot program in 2007. At the time of the publication of this book, approximately 1,000 people

will have attained this credential. The *Standard for Program Management, Second Edition* was issued by the PMI® in 2008, and a third edition is scheduled for publication late in 2013.

As the profession has been formally recognized, more books and peer-review journal articles in the field have been published, and universities now offer courses and degrees in program management. However, much remains to be learned and shared about program management.

This book attempts to fill this void. First, the chapters were written by PgMPs with extensive experience in a variety of industries and organizations. Second, the PgMPs who contributed to this book represent each region of the world: the Americas, Europe, the Middle East, Africa, and Australia. The intent of each chapter is to provide examples of why program management is essential to organizational success, to discuss and analyze literature in the field, and to guide program managers, prospective program managers, project managers, team members, members of program or governance boards, members of program or project management offices, program sponsors, and functional managers, targeting a broad audience.

The book is organized so that it can be read in its entirety, or specific chapters of interest can be read separately and accompanying chapters at another time. Overall, the book serves as a reference for the key themes and issues in program management. It also serves as a reference for individuals desiring to attain the PgMP credential and for colleges and universities offering courses on program management. Many chapters reference the PMI's® standards, complement the concepts in the standards, and specifically expand on the concepts and issues that the standards mention in passing or not at all.

It is my wish that this book enhances your own work as a program manager, whether you are just beginning in the field or are a seasoned professional, as you strive to deliver value and excellence to your organization. Although this book provides a variety of concepts, tools and techniques, and guidelines, no two programs are comparable in their complexity and challenges. I hope this book assists you in managing complex programs and inspires you to think of new ways to enhance your program management practice. I also hope the many experiences that this book's contributors share in the upcoming chapters guide you in your journey as a program manager.

ORGANIZATION OF THE HANDBOOK

Chapter 1: Achieving Business Advantages through Program Management

Kai Schüler states the case for program management in today's complex environment by explaining why organizations should invest in program management and discussing the advantages progams bring to organizations. He also explains the definition of a program, its place in an organization, and how program management enables organizations to close the gap between strategy and project execution. He describes a path organizations can take to introduce program management into their day-to-day operations so program management becomes a business mindset that permeates the organization.

Chapter 2: Strategic Planning and Program Management: Implementing an Organizational Strategic Vision through a Disciplined Program Management Approach

John M. Sanderson focuses on strategic planning not only to show why it is essential to organizations but also to demonstrate how program management enables an organization to develop a strategic plan by following the phases in the program management life cycle. Sanderson describes how an organization can realize the benefits in its strategic plan and achieve its vision by using the discipline of program management. Once the plan is prepared, an experienced and knowledgeable program management team leading the effort helps ensure the vision stated in the plan is realized.

Chapter 3: Change Management: The Good, The Bad and The Ugly

Since all programs result in some type of change, **Kathy Hibson** focuses on the complex challenges program managers face in dealing with change. The chapter describes how best to deal with change management. It recognizes the importance of the people side of change and discusses how to overcome resistance to change by the program's stakeholders. She also describes roles and responsibilities in change management. She uses

practical examples to point out why a change management program is different from a traditional program because of the complexities involved. She explains how program managers can manage change efforts successfully with a systemic approach and focus on the people aspects involved.

Chapter 4: Communications, Complexity Theory, and Programs

Wanda Curlee explains why programs are complex undertakings by first providing an overview of complexity theory and the relationship of communications to complexity theory. Recognizing programs often experience chaos and all involve some type of change, she states the necessity for program managers to encourage and accept change on programs. By doing so they encourage creativity and growth. Effective communications are essential, and barriers to communications must be reduced and hopefully eliminated. She emphasizes the need for program managers to leverage complexity as much as possible and describes key competencies for program managers.

Chapter 5: Program Initiation

Programs of all sizes and types have an initiation phase. **L. Trae Miller** discusses the purpose of the initiation phase and its key activities. The importance of this phase cannot be overlooked as it is a program's foundation, frames the scope of requirements, and defines program benefits. This phase is one in which a program now has been authorized so resources can be assigned and committed to it. This chapter also emphasizes a program manager's role during the initiation phase and points out the special skills required to set the direction for upcoming phases of planning and executing the program to best ensure success.

Chapter 6: Benefits Management

André Toso Arrivabene describes the importance of benefits management in program management. After describing the types of benefits realizable from programs and explaining steps in a benefits life cycle, he explains the importance of an overall benefits realization roadmap. This chapter focuses on benefits versus the risks involved in attaining them, ways to assess benefits versus their costs, and methods to monitor actual benefit realization with a benefits forecast, benefits register, and metrics. The

chapter concludes with a focus on transitioning benefits and is filled with guidelines for program managers.

Chapter 7: The Earned Benefit Method for Controlling Program Performance

Continuing with the importance of benefits to program management, **Crispin ("Kik") Piney** describes applying benefits management across the life cycle. He unveils a new approach, called Earned Benefits Management, for planning and tracking the benefits realized by a program. This chapter begins with how best to make the earned benefit technique one that is embraced by an organization, explains how benefits drive a program by focusing on five levels of benefits, and explains the phases in the benefits life cycle. The chapter also carefully describes the earned benefits technique with a detailed example to show how the earned benefits concepts are derived, planned, and applied on programs.

Chapter 8: Demystifying Stakeholder Management: The Science and the Art

Gareth Byatt focuses on another key theme of program management: stakeholders. He begins with definitions of stakeholder management and remarks that the focus should be on engaging stakeholders in one's program and determining how best to exert the right level of influence in working with stakeholders on programs. To help program managers engage stakeholders effectively, Byatt presents a technique to accomplish this, presents guidelines for communicating with stakeholders, and describes methods to track and report on stakeholder engagement throughout a program's life cycle. This chapter also discusses key competencies needed in engaging stakeholders.

Chapter 9: Closing the Expectations Gap: Setting and Managing Expectations

Amy Baugh describes the overall skills required for successfully managing expectations throughout the program life cycle. For each phase she discusses which expectations need managing, gives specific tips on how best to manage these expectations, and explains how expectations management ties into a program management methodology. She rates

communications as the most crucial skill in managing expectations and lists common pitfalls in managing them. This chapter emphasizes that program managers require strong communications skills to close the gap between expected results that define the success of a program.

Chapter 10: Communication and Its Power at the Program Level: Managing Power Brokers with Effective Communications

Oluwatosin Agbetusin further emphasizes the importance of communication skills for program managers. He specifically focuses on communicating with power brokers, the key stakeholders with the greatest degree of influence and interest, both positive and negative, on a program. The chapter describes the challenges a program manager faces in communicating to these stakeholders. New technology and media have evolved a project manager's role from sharing information to communicating effectively to stimulate action in a desired direction. As a result, the right information must be communicated at the right time, at the needed level of detail, to the right stakeholders. Many will benefit from the guidelines for communicating with the key power brokers.

Chapter 11: Program Governance: Toward a Conceptual Framework

Muhammad Ehsan Khan emphasizes the importance of a strong governance structure in program management. He describes the need for such oversight by executive management so it can monitor a program to ensure it is on track, support the program as required, and control the program if it appears to no longer be supporting organizational objectives. This chapter reviews governance in its various forms and examines program governance and the various roles and responsibilities of the people involved. He presents a conceptual framework for program governance and highlights governance roles, functions, mechanisms, and assets to consider within the corporate, organizational, and environmental contexts.

Chapter 12: Decision Gate Discipline for Programs

Covering another aspect of governance, **Bill Crider** explains the necessity for a program to be aligned with an organization's strategic direction. The discipline of decision gates is a key factor for program success and overall

program management excellence. He presents the rationale for decision gates and guides program managers in preparing for gate review sessions and determining what to present at reviews. He shares examples of when to hold gate reviews based on the nature of different types of programs. He also describes how best to execute decision gate reviews so they do contribute to program success.

Chapter 13: Mobilizing the Organization: The Discipline of Execution

While often much is written on planning and organizing programs, execution is where the work of the program is done, and this important phase is often overlooked. **Kim Herzog** fills this void. Noting how good strategies often fail because of poor execution, she explains the importance of a culture emphasizing execution and excellence and how execution is the pursuit of continuous improvement. She stresses successful program execution requires strong leadership and assigning the right people to the right jobs. Guidelines for improvement in overall execution and productivity are provided, along with ones on the institution of a governance structure. Benefitting from strong execution organizations are better equipped to respond to environmental changes and can create value more than their competition.

Chapter 14: The Program Management Office (PgMO)

Gary Hamilton defines the program management office (PgMO) and its relationship to a project management office. Programs are established to best support the strategy of a business, and a PgMO supports governance of programs. This chapter explains how to ensure a program continues to support an organization's strategic objectives despite change. In addition, this chapter provides insight about the purpose of program governance and guidelines on establishing a governance function. Key roles in a PgMO are described, as well as considerations before organizations set up a PgMO. A PgMO requires careful thought in its planning to support effective execution. It further requires commitment of resources and funding with due diligence before it is established. Because processes cannot be improved unless they first are measured, the chapter covers key performance indicators for a PgMO. The chapter concludes with recommendations for determining the structure of a PgMO.

Chapter 15: Program Management Office—Role and Challenges

In Chapter 15, Monica Gaita also discusses the importance of a program management office. She emphasizes that the value a program management office can provide to an organization is the active involvement in resource management, risk management, and contract and procurement management, as well as the traditional functions of ensuring processes are followed; tools and techniques are used; the right components are selected; scope, schedule, and quality standards are met; and centralized support is available for program managers. To perform effectively, a PgMO requires a charter, strong leadership and sponsorship, and stakeholder analysis. A PgMO must be a supportive function not a constraining one. Gaita analyzes various functions to show how they can add value to program performance. She concludes with a discussion of the program management office's performance and its contribution to organizational performance.

Chapter 16: Program Risk Management

Since programs represent both positive and negative risks, **Gary Hamilton** describes risk and various risk categories that affect programs. He describes the relationship between program risk management and project risk management, explains why risk management is important on programs, and discusses how best to foster an environment of open communication about risks. Examples of risk response strategies for both threats and opportunities, best practices in use of the risk register, common risk processes, and techniques are included. Additionally, this chapter presents the leading risk management models, processes, and tools. A definition of effective program risk management and recommendations for promoting it on programs aid program managers in positioning programs to respond to threats and embrace opportunities.

Chapter 17: Program Manager Competencies

Best practices, tools and techniques, strong governance, and solid executive support by themselves do not guarantee success. **Ardi Ghorashy** stresses program manager competency is critical to program success and emphasizes that peak performance is key. This chapter reviews five existing competency models for projects and programs. The review is followed not by a model *per se* but by an in-depth survey of program manager

competencies, respective skills, and types of behavior. Program managers can use the survey to enhance their own performance. This extensive survey explains why each competency is important to a program manager, the skills specific to mastery of each, and how to improve one's own performance accordingly. This chapter also contains information useful to human resource and hiring managers to consider as they staff programs, ask questions during interviews, and build performance evaluation criteria to improve program manager performance.

Chapter 18: Information Structuring "Methodology"—Tools and Techniques for Effective Program Management

Robert Joslin sets the stage for program-specific methodologies by describing in detail the process steps required to realize an organization's strategic goals. He has developed an approach, called the Information Structuring "Methodology," that is used to establish and set up a program. The approach optimizes information associated with a program's benefits and project deliverables and defines techniques that use this information to develop a taxonomy within the program management office. This Information Structuring "Methodology" affects nearly all support tools and techniques, including the program management information system used by a program management office to better support and control a program throughout its life cycle. He describes this Information Structuring "Methodology" in the context of an enterprise management framework, which also is mapped to program success criteria. He explains the various external factors and their effect on a program. Guidelines to achieve a structured approach are presented. Through his "Methodology" a program's information management system tools can be configured and structured to match deliverables as they change because of internal and external factors that affect programs.

Chapter 19: The Influence of Consortiums in Developing and Developed Countries

Increasingly diverse organizations and even competitors are forming consortiums to cooperate and complete programs and projects. **Kurt Harris** explains this trend in Chapter 19. In a consortium, firms rely on the strengths of their partners because most individual firms lack the necessary breadth and depth to cover multiple business opportunities concurrently. He gives an overview of evolving technology and the countries

that have benefited from consortiums. A section presents the background on consortiums in both developed and developing countries. Examples of different types of consortiums are described in areas such as technology, business, economics, and management, health and the environment, oil and gas and associated construction, other types of construction, education, and purchasing. Projects and programs can motivate firms to pool their resources and to target where each firm is able to bring expertise to the collective consortium. The chapter ends with suggested guidelines for both experienced and novice program and project managers who will be involved in managing a consortium in whole or in part.

Chapter 20: The Increasing Importance of Social and Business Media in Program Management

Social media is here to stay and in some form is part of each professional's daily life. **Jeffrey G. Hodgkinson** discusses this trend with a focus on LinkedIn. The chapter focuses on networking and why networking is important to program managers. Noting that there are sites dedicated to social networking versus those dedicated to business, this chapter emphasizes the business side. He explains why sites, such as those on LinkedIn, are important and uses a personal example to explain how active one wants to be networking and the benefits networking can provide. There are various connection strategies to consider, but he focuses on guidelines to make networking a positive experience and one that is valued by those in program management.

Chapter 21: Portfolio, Program, and Project Management as Enablers of Innovation

Brian Grafsgaard describes the importance of innovation, which enables organizations not only to survive but also to grow. He defines innovation so he can explore how program management, coupled with portfolio and project management, adds value to the innovation process and helps to eliminate barriers to it. He describes various types of innovation, their key dimensions, and how program management can effectively address change, ambiguity, uncertainty, and risk in the innovation process. Project management integrates with program management to ensure a program's outcomes and benefits can be sustained. Program management also

integrates with portfolio management to bridge the gap between organizational strategy and execution so that the right ideas are pursued, and the needed resources are allocated to them. Program management helps maintain continuous alignment of an innovation initiative with organizational strategy. With a common objective it is able to unite disparate groups so there is a roadmap to effectively execute multiple threads of activity and to manage the dependencies between them, thereby reinforcing stakeholder engagement and the necessity of communications management.

Chapter 22: Organizational Maturity: Managing Programs Better

Suhail Iqbal reviewed the literature on organizational maturity and found 50 maturity models. He begins this chapter with the Capability Maturity Model for Software and its 17 models related to project, program, or portfolio management. Of these 17 models, four are relevant to program management in certain contexts. This review creates a common definition of organizational maturity that can be used to formulate a uniform standard of organizational maturity. He focuses on organizational learning and emphasizes strategy. He questions how much maturity an organization should acquire. He discusses existing models and the idea of organizational maturity, as well as how maturity can benefit program management professionals the most. His objective is not to propose another maturity model but to raise awareness of how a common standard for maturity can be derived to formulate a universally-accepted maturity model.

Chapter 23: Sustainability Program Management

To conclude this book, it is fitting to focus on sustainability in program management because program management emphasizes achieving benefits that can be sustained by customers, end users, and support organizations. **James L. Haner** provides a definition of sustainability and notes a key role for the program manager is to recognize sustainability's importance from the beginning of a program and to determine the effort required to achieve sustainability. Achieving sustainability requires planning, and Haner has developed a Sustainability Management Plan, whose contents he outlines in this chapter. Tools and techniques to ensure sustainability are also discussed. The chapter ends with three useful appendices concerning sustainability job aids and web site references.

About the Editor

Dr. Ginger Levin is a senior consultant and educator in portfolio, program, and project management with more than 40 years' experience in the public and private sectors. Her specialty areas include program management, business development, maturity assessments, metrics, organizational change, knowledge management, and the project management office. She is active in providing training to others as they study for their PgMP® examination. She is an Adjunct Professor for the University of Wisconsin-Platteville in its master's degree program in project management and at SKEMA, France and RMIT in Melbourne, Australia in their doctoral programs in project management. Before her consulting and teaching career, she was President of GLH, Incorporated, a woman-owned small business in the Washington, DC area for 15 years, specializing in project management. Earlier, she had a career in the U.S. Government, working for six agencies in positions of increasing responsibility for 14 years.

Dr. Levin is the author of *Interpersonal Skills for Portfolio, Program, and Project Managers* and the coauthor of the *PgMP® Exam Practice Test & Study Guide* (first, second, and third editions); *Program Management Complexity: A Competency Model, Implementing Program Management: Templates and Forms Aligned with the Standard for Program Management*— Second Edition (2008); *Project Portfolio Management*; *Metrics for Project Management*; *Essential People Skills for Project Managers*; *Achieving Project Management Success Using Virtual Teams; The Advanced Project Management Office: A Comprehensive Look at Function and Implementation*; *People Skills for Project Managers; Business Development Capability Maturity Model*; and ESI International's *PMP® Challenge!* She was a major contributor to ESI's *PMP® Study Guide*.

Dr. Levin is a member of the Project Management Institute (PMI®) and a frequent speaker at PMI® Congresses and Chapters and the International Project Management Association. She is certified by PMI® as a Project Management Professional (PMP®) and a Program Management Professional (PgMP®). She was the second person in the U.S. to earn the PgMP® designation. She is also certified as an Organizational Project Management Maturity Model (*OPM3®*) Professional.

Dr. Levin holds a doctorate in public administration from The George Washington University, where she also received the Outstanding Dissertation Award for her research on large organizations. She also holds a master of science in business administration from The George Washington University and a bachelor of business administration from Wake Forest University.

About the Contributors



Kai Schüler, PMP®, PgMP®, is a seasoned expert in international business and management. With almost two decades of experience in project and program management, both in larger as well as medium-sized organizations, he led project management teams and was in charge of programs with international reach across continents. He has worked in several countries of North America and Europe and spent almost a decade working in the United States. Through his career, Kai Schüler has held positions in research and development, technical sales, project, and program management. His main areas of focus include business integration, technology and risk management, and project/program management as a competitive advantage for business. Schüler is presently the Director of Technology and Sales for a medium-sized manufacturer of specialized machinery, providing state-of-the-art solutions for industrial logistics, material handling and storage, as well as food processing and production. Previously, he worked in the packaging, printing and media industries. Kai Schüler is a long term member of the Project Management Institute (PMI®), and member of a select group of PgMP® credential holders in Germany.



John Sanderson, located in Melbourne, Florida, has more than 25 years experience in project, program, and portfolio management. He has led enterprise-wide and global initiatives delivering significant business value. Over his career he has worked for Philips Electronics, Modis, Accenture, CA and Fiserv. His client list includes ABB, Ericssen, Barnes Group, Ryder Systems, GMAC Mortgage, Citi Financial, JP Morgan Chase, HealthNow and the Department of Defense. Mr. Sanderson has earned both the

PgMP® and PMP® certifications from the Project Management Institute (PMI®), as well as a Stanford Certified Project Manager (SCPM) certification from the Stanford Advanced Project Management Program, a certificate in Project Management Practices from Villanova University, and coursework in the Capability Maturity Model Integrated (CMMI) from the Software Engineering Institute. He is an adjunct instructor of project management at Embry-Riddle Aeronautical University and Stetson University.



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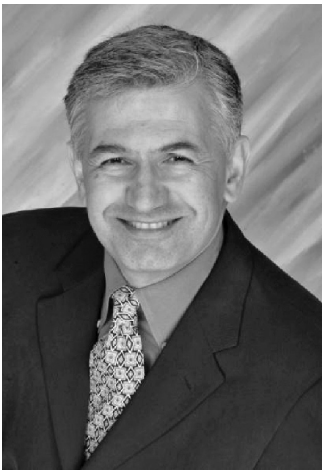


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Achieving Business Advantages through Program Management

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INTRODUCTION

Why is program management important for business? Should program management be used only just for software development? Is program management just a technical thing to manage complicated projects?

Those are some of the questions that may be asked when discussing program management with organizations. The perception is that program

management is a technical function, mostly used in information technology (IT), and something that is entirely optional.

However, the fact of the matter is: it is optional. It is chosen by organizations that seek to differentiate themselves from increasing competition. Advanced organizations and companies that want to stay ahead of the competition have embraced program management as a means to deal with increasing complexity and competitive pressure in the business environment. It provides them with triple win advantages over the competition. But what are those triple advantages?

- Predictability and reliability of technical and project execution.
- Increased customer satisfaction because of better project performance
- Increased return on investment (ROI) because initiatives of large scale, high complexity and substantial risk potential are constantly aligned to overall organizational strategy.

This chapter seeks to shed light on these triple advantages and will explain how organizations can increase their project performance through program management. It will explain how organizations can improve their customer satisfaction by delivering higher quality programs and projects at a reduced overall cost. And last not least, it will explain how businesses can shape more dynamic and more flexible organizations to adapt to shifting environments.

THE CASE FOR PROGRAM MANAGEMENT IN BUSINESS

Before considering program management as a tool to advance an organization's bottom line, it is important to understand where it came from and how it fits into the overall organization. To understand what it is, and what it is not, will help understand what it can do for businesses.

How Did Program Management Originate?

Program management (programme management in British terminology) as a business discipline is relatively young. Even though its roots go back to the 1950s (the development of a U.S. underwater missile launcher system is often mentioned as the first application of program management

practices), it really developed in the 1980s on the civilian side and sought to increase target and financial orientation in government initiatives.

What is a Program, and What Should be Managed as a Program?

A program is defined by the Project Management Institute (PMI®) (PMI®, 2008) as: "a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually" (p. 5). Benefit, as used in this context, is the combined outcome of component projects and initiatives that aggregate to a common product, advantage or capability. Examples of benefits could be increased profits, improved operations, or growth.

According to the International Association of Project Management (IPMA) (IPMA, 2006), a program: "consists of a set of related projects and required organizational changes to reach a strategic goal and to achieve the defined business benefits" (p.130). The change character is apparent, as many organizational change initiatives are successfully implemented as programs.

Program management, as defined by the PMI® (PMI®, 2008) is "the centralized coordinated management of a program to achieve the program's strategic objectives and benefits. It involves aligning multiple projects to achieve the program goals and allows for optimized or integrated cost, schedule, and effort" (p. 6).

While there is truth in all of these statements, an underlying benefit cannot be stressed enough: **program management is all about business results.**

In analyzing the roots of program management, there is a strong tie to project management. Frequently, both terms are used interchangeably in error. A key reason why they are not the same, and in fact why program management was developed in the first place, was the fact that project management is mainly a technical discipline, which can easily get detached from the business. While project management is tactical in nature ('doing things right'), program management is highly strategic and more closely aligned with portfolio management with a focus on ('doing the right things').

WHY PROGRAM MANAGEMENT IS IMPORTANT?

Organizations with some degree of proficiency and experience in project management can fall into a complexity trap as the size of the project, the

size of the organization, and business risk increases. For example, envision a project that was started to achieve technical or other highly measurable goals. This project can run for a long period of time, even years. The financial and risk exposure can be substantial. While the project team, led by its project manager, does a good job steering the project goals of time, quality and budget (the triple constraint), the environment might have shifted since the project's kick-off meeting. Even though the project meets its originally set targets, it may no longer be relevant to the changing business needs of the performing organization. Resources are spent in a way that is not optimally aligned with business strategy. Program management can be an excellent choice for an organization to avoid the described trap.

WHAT IS PROGRAM MANAGEMENT'S PLACE IN THE ORGANIZATION?

It is important to consider how things fit together. There are several pillars in business, some of the most important are:

- Strategic Business Planning
- Portfolio Management
- Program Management
- Project Management
- Operations Management

These pillars jointly form a networked support structure for project-oriented organizations. Operations own resources, skills and capabilities that are applied to drive project work. Projects create deliverables, as outlined in their charters and scope of work. Programs generate business benefits by governance and ownership of projects and other initiatives. These benefits help achieve top-level organizational strategic goals, that might be grouped and organized with help of portfolio management, see Figure 1.1.

Portfolio management is established to support strategic business planning in an ongoing fashion. As mentioned earlier, benefits are combined deliverables that leverage against each other, and together provide a larger gain to the organization than just the simple sum of those deliverables.

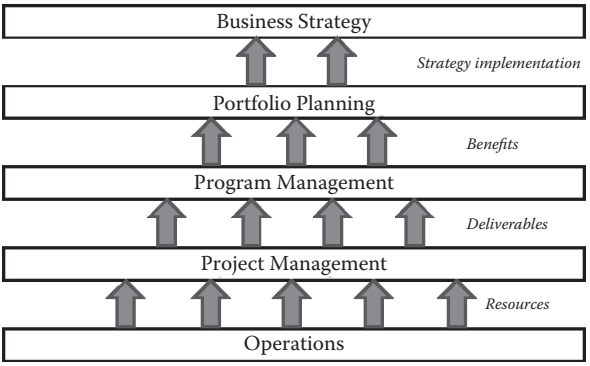


FIGURE 1.1
Program management in the organization.

Whether a program has to run for a finite period is in question. There are different views relative to the finite nature of a program (in contrast a project always has a finite duration). In reality, program durations may not always be known at the outset; however, a program can and will eventually reach the end of its useful life cycle. At that point, as a strategic business decision, the program should be terminated.

COMPETITIVE ADVANTAGES THROUGH PROGRAM MANAGEMENT

Organizations are embracing program management in order to improve their bottom line. Consider how this works, and how organizations can get started with the process of implementing program management for greater returns.

A Starting Point

Originally a technical function, project management was developed as a means to deal with complexity. As a byproduct, it became also a competitive advantage of organizations. By applying project management, the success rate of projects typically increases for organizations. The percentages of goal achievement in time, budget and quality tend to increase. These achievements allow organizations to better predict their costs and help minimize risk and uncertainty. In a competitive bid situation, the

organization with better control of its project delivery often wins the order. Reduced contingencies are only one area where organizations specifically can reduce their cost, and reduced cost can help win orders.

The Next Step—Shaping the Structure

As projects and initiatives increase in scale (higher cost, longer durations, and increased complexity), advanced project management techniques and processes allow organizations to balance risks and rewards. Multi-project management, sometimes supported by a Project Management Office or a Program Management Office (PMO) within the organization, increases the likelihood of success and furthermore of not getting overwhelmed by the more demanding business environment.

The PMO can be either a Project or Program Management Office, depending on the individual level of experience and maturity of the performing organization. Since this chapter has its focus on program management; therefore, the PMO is viewed in a program context.

WHAT IS A PMO?

For many organizations a PMO is the preferred way to organize processes and procedures, everything that has to do with program and project implementation. Whether an organization has two different types of structures for program and project management greatly depends on its size and industry. For many smaller- to medium-sized organizations, a PMO can support both programs and projects at the same time. Often the head of program management is also (directly or indirectly) in charge of all program and project managers within the organization. This delivery-oriented approach works well for many organizations.

Some of the key goals and duties of a PMO include:

- Provide a formal and administrative infrastructure for programs and projects
- Define program and project management processes for the organization
- Manage schedules and budgets at the program level
- Set the quality framework for programs and component projects

- Define what success means for programs within the performing organization
- Support an organization-wide management of risks and issues
- Provide governance for component projects and ensure alignment to organizational strategy (PMI®, 2008)

A PMO serves as a central hub for businesses. From the executive management perspective, a PMO is the go-to point to effect action and change in program and project execution. For the project level, a PMO provides guidance and orientation. The PMO and the head of program management can also relieve project managers of the burden to seek executive decisions or approach steering committees or controlling boards. Response times can be shortened drastically. It minimizes time delays by avoiding a cumbersome use of continually needing to involve these steering groups and committees. This is particularly important in smaller- to medium-sized organizations. In this sense, effective program management, closely tied to the executive business planning, increases the dynamics in strategic goal accomplishment when implementing program and project portfolios.

SCALABLE STRUCTURE AND PROCESSES

Project management, applied either individually or as multi-project management, however, can be distracted by shifting markets and changing business environments. In many organizations, there are dozens and sometimes hundreds of projects under way at any given time. Each of the projects has its own set of requirements, as outlined in its project charter, the requirements documentation, project management plan, etc. Project managers may do a fine job of meeting their goals within the time, cost and quality constraints. The challenge with managing projects comes with the high dynamics in today's business. With the changing environment, executive managers of organizations will adjust their strategic goals. Often times, however, those adjustments do not trickle down to each individual project. Project managers usually do not have the necessary information, and many times lack the experience, competencies, and skills to understand all required changes. What started out as a group of projects with sufficient alignment to overall strategy might gradually

become disconnected. Every project hits its defined targets, but the overall organization does not meet its goals; an alignment gap develops over time.

HOW DOES PROGRAM MANAGEMENT CLOSE THE GAP?

A business cannot be successful in the long term if it lacks strategy. In general, businesses have strategies and strategic goals; however, some of them might be unrealistic. The creation of viable business strategy is not within in the scope of this chapter. It is assumed that a viable strategy exists; actually, experience shows that most of the time businesses do not lack strategy, but instead lack the needed implementation and realization of that strategy.

In order to implement business strategy, several organizational process assets have to be applied. Various departments and business unit functions need to contribute in order to achieve the desired results. It is at this stage, that program management becomes the critical business integrator that helps apply all those resources in a coordinated fashion for maximum results.

This is the point where program management allows organizations to close the gap between strategy and project execution. The program manager is charged with the transfer of strategy and its changes into meaningful actions. Ideally part of executive management, the program manager's role entails ensuring the program organization, including all of its projects, recognizes required changes in scope, adjustments in timelines, and new objectives. The program manager applies these changes in a coordinated fashion across the projects in the program. At times, changes may include initiation of new projects and termination of others.

The dilemma the program manager has to overcome lies in the inherent differences between strategy and operations. Strategic goals, while usually measureable, are typically not actionable as is. A strategic goal may be something such as: 'Become the market leader in the mid-Atlantic market by the year 2014, with a market share of 35% or more'. In itself, this goal is strategic, it is specific and meaningful. However, no immediate action can be taken; the goal is not actionable as it is stated. In order to translate this strategy into action, the goal needs to be broken down, and actionable goals must be defined and supported by targeted initiatives. Related actionable goals could include for example:

- Increase annual sales by 10%
- Increase sales of the xyz product group by 12% annually, or
- Reduce operating cost by 5%.

In order to act upon those goals, project requirements may have to be developed, implemented, or adjusted. It is the program manager's responsibility to effect those changes across component projects and initiatives.

At this point, program management ensures a constant closed loop management of component projects. Program management receives its mission from the high-level strategic business planning process. Ideally, the head of program management is positioned at the executive level of the organization. He or she will be an integral part of strategic goal creation and will be the driver for initiation of suitable initiatives to achieve these goals.

AN INTRODUCTION PATH FOR PROGRAM MANAGEMENT

Implementation of program management initially can be a daunting task. Program management has to be rooted deeply within the entire organization to become truly effective. Organizations historically have been better at adopting program management if they previously have achieved a level of proficiency in project management, particularly if multi-project management was practiced successfully. The success rate in its adoption follows a maturity curve.

Maturing project management typically can be found when project management changes from a merely technical function into a true business contributor. At that point, it not only ensures better predictability in technical delivery but will also provide a strong return on investment for the organization. Evidence can be found when organizations monitor, for example, project execution costs as a percentage of project revenue; see Figure 1.2.

Organizations are highly encouraged, regardless of their maturity level, to monitor and measure performance and the value contribution of the project efforts. The reason is: 'what's measured gets done'. For less tangible benefits, it is suggested to take a harder look, until a practical metric is found. An example of an intangible benefit could be: 'Increase quality of sales'. In order to make this tangible, and be able to act upon the goal, it

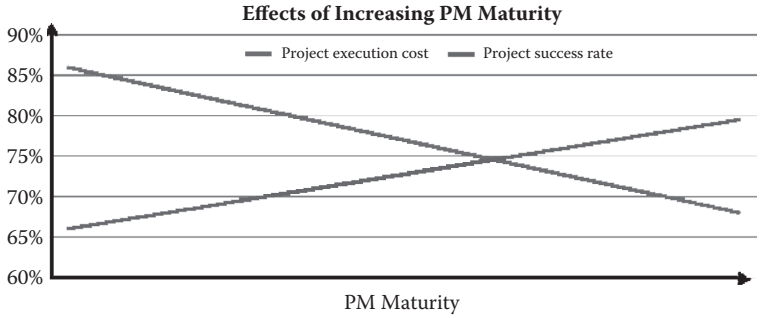


FIGURE 1.2
Effects of increasing project management maturity.

could be adjusted to: 'Increase the quality of sales orders, as measured by the number of open items at the project kick-off meeting'. Then, the organization can establish a benchmark, and going forward, it can determine the trends in terms of the quality of sales orders.

Based on competent project management practices, the move to multi-project management can be a logical next step. This approach will be the first and important step toward program management. With multi-project management, organizations are enabled to further increase efficiencies in their delivery of projects. This approach can ease the burden on enterprise-wide resource planning by ensuring a more coordinated approach to demand balancing. The project demand for resources is bundled, and operational management can better plan for a more strategic picture of project resource demands. By doing so, an organization has the ability to increase the utilization rate of human and other resources, by minimizing both idle time and overtime situations. There is significant cost savings that then is realized; see Figure 1.3.

Competent multi-project management can be an advantageous position for an organization, giving it a competitive advantage over those organizations with lesser project implementation systems. However, there is a risk that an organization is extremely effective in implementing ineffective projects. Program management, though, is about 'doing the right things', and therefore, it is an excellent way to mitigate the described situation.

In order to provide benefits to customers, it is necessary to first make sure employees understand the organization's mission, goals, and values. It is not sufficient to merely have process instructions that primarily serve the International Organization for Standards, for example, and other administrative purposes. It is important that the vision for program

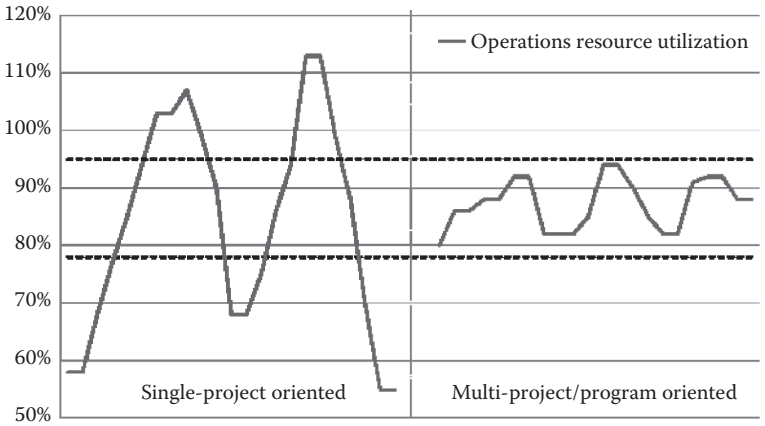


FIGURE 1.3
Operations resource utilization.

implementation is explained in easy to understand terms. A way to outline this approach is to demonstrate 'how would good look like'. More importantly, what does vision mean to each individual in the organization to make sure it is understood in the same way, which also means vision must be communicated to everyone through consistent messages. A defined communications strategy is required, which is followed whenever the strategic goals of the organization change.

One of the key challenges in today's highly competitive business environment is to not only have highly skilled project managers. In fact, more organizations than ever employ certified project managers and apply formal project management practices. However, a gap to avoid is a project team that is not on the same level as the project leadership. Going forward, it will be key for organizations to educate and train their staff in general project management techniques, teach them the project language, and by doing so, create their own pipeline for future project management talent.

SPECIFIC BUSINESS BENEFITS OF PROGRAM MANAGEMENT

As was presented, program management is a key contributor to overall business success of an organization. At the same time, it only makes sense if there are tangible advantages through the application of program

management practices. The following are actual examples to show how businesses have gained a competitive advantage through program management.

- Large-scale projects are often the background of intensive bidding by competing organizations. Gaining efficiency can create a competitive advantage when bidding for such larger scale projects. Take a large scale global re-tooling initiative for example. Several components of this initiative are projects. However, they may be interrelated on a technical, functional, regional or resource level. An organization can try to win this order by bidding on a project-by-project basis and hoping for the best. A more advanced organization, however, can carefully analyze the project portfolio, identify the interrelations, and then design a program structure to maximize efficiencies in project implementation. It will gain financial advantages for itself and possibly also identify additional benefits that can only be achieved by managing the interrelations.
- Such large-scale initiatives often span across several countries, and sometimes across continents. Customers with a global corporate organization may award such large-scale global initiatives that span across geographies to the organization that manages these specifics the most effectively. Enterprise-wide program management practices and procedures can include common platforms and processes, networked global IT infrastructure, and common goals and objectives. Global organizations with enterprise-wide program management practices and procedures, possibly with an enterprise PMO, can deliver such projects in different parts of the world easily and effectively based on customer demand. Results can be the same regardless of geography, and the customer will hardly notice any difference. In fact, by establishing the organization's program structure in such a way, it is possible to cater to different cultural and market requirements, without losing the efficient delivery that is crucial in a highly competitive business environment.
- The effects of efficient project and program implementation can also reach beyond the organization. By closely aligning initiatives, and managing their resource demand across projects and programs, organizations have achieved increased levels of utilization of key technical or personnel resources. With some experience, such efficiency gains can directly translate into cost savings.

PROGRAM MANAGEMENT FOCUSES ON COMPLEXITIES

When program organizations perform at such a high level of predictability and efficiency, they will also resonate with the client base. Program management can take project delivery from a one-off approach into project management that never stops. The linear, one-off approach transforms into an ongoing, life-cycle oriented partnership for improved mutual results. One way of accomplishing this approach is to have program and project managers retain account or regional ownership, so when the next program or project is authorized, they can more easily execute it.

SUMMARY—THE BOTTOM LINE

Program management, often thought of as a technical process, is significantly more complex. It is a business mindset, a management approach that has demonstrated its many strengths in organizations dealing with rapidly changing environments. It allows companies and agencies of all sizes to increase the efficiency and dynamics of their project delivery, and at the same time, to improve their customer satisfaction by increased predictability of project outcomes. Last but not least, it helps to improve resource efficiency by a closed-loop alignment of benefit generation with strategy. These are the triple advantages that can take a project-oriented organization to the next level.

In light of this backdrop, organizations are advised rather than asking: can we afford program management, to ask themselves: can we live without program management?

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Strategic Planning and Program Management: Implementing an Organizational Strategic Vision through a Disciplined Program Management Approach

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INTRODUCTION

Strategic planning is extremely important to many organizations. The process involves creating an understanding of how the organization defines itself and is typically handled by identifying and authoring an organizational mission statement. In addition, the process develops an organizational vision statement, which identifies the high level where the executive management wants the organization to be in the future. The process

cannot stop there. The committee in charge of the strategic plan must create a "roadmap" on how the organization will achieve its vision. The roadmap should include various levels of detail, down to the initiatives that will be acted upon to achieve the vision. For program managers, this process should sound fairly familiar since it is very similar to a disciplined approach to achieving program goals.

The best practices approach to program management requires that the program and the individual projects within the program align with the strategic direction of the sponsoring organization. The goal of any organization's strategic plan is to implement or create the organization's vision. To create the vision, or end-state, individual initiatives need to be created and managed in such a way that the end state is "delivered." For individuals who are project and/or program managers by profession, the previous few sentences should remind us of the process and definition of project and program planning, execution, and delivery.

This chapter describes how an organization can use the discipline and governance of program management best practices to realize the benefits of the future vision outlined in a formal strategic plan.

WHAT IS STRATEGIC PLANNING?

There are many published definitions of strategic planning. One definition that both captures the importance of strategic planning and speaks to some of the work of implementing the plan is from BusinessDictionary.com:

> Systematic process of envisioning a desired future, and translating this vision into broadly defined goals or objectives and a sequence of steps to achieve them. In contrast to long-term planning (which begins with the current status and lays down a path to meet estimated future needs); strategic planning begins with the desired-end and works backward to the current status. (Strategic Planning)

Using this definition, we can parallel the activity of defining the Program Work Breakdown Structure (PWBS). As noted by the Project Management Institute (PMI®, 2008), "Developing the Program WBS (PWBS) is the process of subdividing the major program deliverables, project activities, and implementation phases of the program. It is the process of breaking

down all the work activities into more manageable components" (p. 114). Additional detail on creating a PWBS for a strategic plan is included later in the chapter.

In large companies, the strategic plan is often created by high-level corporate executives. In many cases, the company will hire an outside management consulting firm to determine the future vision and create the strategic plan. After agreement and publication of the plan, the execution is often left to mid-level managers and directors who were not included in developing the plan and may not have a clear and complete understanding of the end state that the authors had in mind.

How has this process worked in most organizations? Cook (2001) contends that more than 80% of organizations do not fully implement their strategic plans. Some of the reasons for that failure could be that the markets the company is in dictate a change in strategic direction. Often, mergers and divestitures reduce the validity of the overall plan. Executives change roles or leave the organization altogether. Of course, often the management consultants who were instrumental in writing many strategic plans have long since moved on to other assignments.

PROGRAM LIFE CYCLE AND PROGRAM BENEFITS MANAGEMENT

While many organizations implement a strategic project management process, that usually means that projects are qualified and assessed for funding based on their support and alignment with the strategy of the company or organization. While that is indeed a worthwhile process to determine project investment, it does not directly speak to implementing the strategic plan. Consider instead the discipline of delivering a strategic vision using the program management framework as outlined in the Project Management Institute's (PMI®) *The Standard for Program Management*—Second Edition (2008).

PMI® outlines a program life cycle (pre-program preparation, program initiation, program set up, delivery of program benefits, and program closure) through which program benefits are managed and ultimately realized. The four phases of program benefits management (benefits identification, benefits analysis and planning, benefits realization, and benefits

transition) can be easily mapped and used for strategic vision realization. The program benefits (strategic vision) can then be managed using PMI's® program life cycle framework, essentially overlaying the disciplined program management approach on what is the most important "program" within any organization: its strategic plan (PMI®, 2008).

PRE-PROGRAM PREPARATIONS

The first benefits management process is benefits identification. Traditionally, program management benefits identification assumes that the organization has completed and published a strategic plan. Why can we not use the same processes to develop the actual strategic plan? Benefits identification then begins with a clean slate. In reality, the process of developing a strategic plan starts by developing the vision of what the organization is going to look like at the end of the strategic planning horizon. Often, the strategy development team will assess where they are currently by looking at the organization's strengths and weaknesses and by determining the external environment's strengths, weaknesses, opportunities and threats (SWOT analysis). Those end points become the gap that will need to be bridged by implementing the strategic plan.

The organization then develops, evolves, or confirms its mission statement and creates its vision statement. The vision statement is that high-level description of what the organization will be at the end of the planning horizon. From that ending point, the strategic planning group formulates the three to five strategic goals that, once realized, will create the vision. In the vernacular of program benefits management, benefits identification will identify and qualify business benefits. If done at the strategic planning level, this identification and qualification creates the strategic goals. In the program life cycle, PMI® identifies this phase as Pre-Program Preparations (PMI®, 2008, p. 20).

At this point, there are now actionable initiatives, simply the idea of an end-state or result at the broad, organizational level, and the very high-level goals that, once achieved, will "create" the vision. There are several different approaches to the creation of a strategic plan, which is out of scope of this chapter. Any of the approaches to strategic planning would fit into the benefit identification process of program benefits management and the pre-program preparations phase of the program life cycle. The

contention is that many organizations are already adept at creating a strategic plan (or they are capable of hiring those skills from a management consultant). The challenge that many companies face is translating the strategic plan into actionable initiatives and creating the governance discipline to implement those initiatives.

PROGRAM INITIATION

Once the strategic vision and strategic goals are finalized, the executive in charge of executing the plan would be wise to enlist the skills of an experienced program manager with the authority to implement the governance needed to realize the identified benefits (goals). At this point, the program manager will oversee benefits analysis and planning as the program is initiated (PMI®, 2008, p. 20).

Furthering the implementation of the strategic vision, an organization would create strategic initiatives for each of the strategic goals. Using the program management discipline, the organization would initiate the strategic plan by creating a specific justification for creating the vision. Further clarification of the benefits of the vision and the objectives can help to determine if the vision is feasible in order that the outcomes will justify the effort. Also, often in implementing a strategic plan, an organization does not define the critical success factors for the strategic goals, which in turn drive the success factors for the individual initiatives.

While many organizations seek to work on too many initiatives at one time, within the program initiation phase, the program manager and executive sponsor develop a high-level roadmap. This roadmap serves to create a more realistic expectation of what benefits will be delivered and in what time frame. While, at this point, the detailed planning process has not occurred, the expectations can, nevertheless, be communicated, and the groundwork for expectations is laid. In keeping with effective program management governance, a program charter document is created. This document will authorize the program manager to apply organizational resources to, in the case of the strategic plan, create the organization's strategic vision.

A best practice with most programs requires the program charter to be approved by the program sponsor. In the case of the program to implement a strategic plan, the charter should be reviewed by all of the executive

team members that are involved with creating the strategic plan. Strategic plans should be reviewed and changed or verified at regular intervals. The review of the program charter gives the executives involved an opportunity to verify the strategic plan they developed using the additional information developed in the program initiation phase. The executives are forced to answer the question, *is the strategic plan we developed still valid in light of this additional information contained within the charter?* It is better to determine that prior to investing organizational resources in the initiatives identified. Development and approval of a program charter for the strategic plan program gives the sponsors, the organization's executives, an opportunity to review some things that may not be considered during the development of the vision. Namely, they will review the resources required to implement the strategy. Since so often the human resources required to work the strategic plan are internal to the organization, the impact of the resources' time is not considered. Are the directors and other mid-level managers the only resources that will be working on the strategic initiatives? Of course not, and the charter document is the first time that the executives will see the potential cost impact of executing the plan. *A successful strategic plan implementation cannot be just something else the organization does but must be integral to what the organization does.*

There are other areas within the charter, which become beneficial as we reach the second phase gate (the first phase gate happens at the point there is an approved strategic plan, at the end of the strategic plan development by the executives and outside consultants, if applicable). While a benefits analysis should have been part of the initial strategy development, the charter process should include a verification of that analysis and an expansion of the analysis to include the initial resource estimates. This will mean that the initial program team needs access to some of the research and documentation from the planning session. Executives may balk at allowing this access, but it would be the first test to determine if the program team will be allowed to be successful.

Another part of the charter that is important for the approval to move past program initiation is the list of potential risks. What potential risks would harm the desired outcomes? The understanding must be that the risks identified at this level of a program may be much different from the risks that most program managers typically see. Examples may include changes to markets, potential mergers, acquisitions, and divestitures. Those risks may have (and should have) been identified during the creation of the strategic plan but now must be added to other risks identified during the initiation phase.

The charter will name the executive sponsor and program manager. Unless an organization has a department that is tasked specifically with the strategic planning process, the concept of a more central point of contact for the strategy work will be a change to the way the organization may have worked in the past. Often, the individual strategic goals are "assigned" to a specific executive. While assigning the responsibility at such a high level in the organization has its advantages, executives have vastly different levels of skills when it comes to delivering program benefits. The suggestion here is to assign the delivery of program benefits to a professional with the skills and knowledge of an experienced program manager.

While there are other sections of the program charter, the final one to discuss here is the section defining the program governance. This section defines the structure of the program and how it will be managed and controlled. The structure of the program includes how the strategic initiatives (program components) will be structured. How will the component priorities be determined? Creating the governance though which the strategic benefits will be realized significantly increases the level of success achieved. The Palladium Group reports that a review of more than 130 case studies "shows that 70% of those organizations that had a formal Strategy Execution process in place reported superior performance" (Norton, 2007).

In following good program management governance practices, the completed program charter needs to be approved. The suggestion here is to have the organization's executive team review and approve the charter. In theory, the execution of the organization's strategic plan is the most important program the organization does for long-term survival and success. To get the executive team to approve the program charter lends the necessary credibility and authority to the program team as they move forward. Failing this may mean that the organization is not serious about implementing the published strategy. With this approval, the program team can move forward with the documented support at the highest level in the organization. The chances of success increase significantly.

PROGRAM SETUP

With the approval of the organization's executives, the strategic plan program moves past this phase gate and to program setup. "The purpose of program setup phase is to progressively elaborate the program charter

and develop the foundation for the program by establishing an infrastructure and building a detailed 'roadmap' that provides direction on how the program will be managed and defines its key deliverables" (PMI®, 2008, p. 26). The term "progressively elaborate" means that we are moving from the higher-level strategic goals toward individual initiatives with verifiable deliverables. The roadmap created is meant to deliver all the results desired for each of the strategic goals considering both logical dependencies and initiative prioritization. Here is one of the areas where a program management discipline can add enormous value in implementing strategy.

An effective program management discipline develops a detailed program roadmap representing the initiatives and the timing of the deliverables from those initiatives. Previously, a high-level roadmap was developed, and now that is further elaborated. The major factors that determine the logical progression within the roadmap are the logical dependencies and the prioritization of benefits to be realized. One way an implementation of a strategic plan may be different from a more traditional program is that there will be times when the prioritization of benefits far outweighs any logical sequencing of initiatives. In other words, if there is significant value from a strategic initiative, the organization could do double work in order to realize the benefits sooner.

There is a greater likelihood of duplicate work when implementing strategy. Why would this be the case? An organization may want to take advantage of the timing of the realized benefit instead of waiting for the benefit to be realized in a logical sequence. Often, waiting on timing based on a logical sequence will make the organization miss out on temporary market conditions. While an effective program management discipline will seek to minimize duplication of efforts, there must be the realization that when the benefits realized exceed the costs of that duplication, it is an acceptable additional cost.

As the program team adds detail to the program roadmap, it also seeks to expand on the high-level cost and schedules from the program charter. Of course, the program manager must be mindful of the expectation to begin work on the strategic initiatives early in the process. As with any organizational change requiring continuous support, the program team should identify initiatives that are short term in effort and that will create a measurable benefit. This is often referred to as "low hanging fruit." Certainly, if the organization is new to the program management process, or if there are executives who may not be convinced on the approach,

showing some results early could persuade decision makers to allow the process to continue.

A program architecture should be developed to show how and when the benefits will be delivered from the strategic initiatives. As for delivering the strategic vision, the program team must be mindful that the benefits realized by the individual strategic initiatives may not line up with the completion of the activities within those initiatives. The importance of communicating expectations and results is paramount within a strategic plan program. The program team does not want a gap in understanding as there could very well be a delay between the completion of the actions on an initiative and the realization of the benefits. When communicating to executive overseers, the emphasis must be on benefits realization, not on initiative-scheduled end dates.

One tool that is extremely valuable in any program, and especially so in a program executing strategy, is the Program Work Breakdown Structure (PWBS) shown in Figure 2.1. In executing strategy, the first two levels of the PWBS come directly out of the initial strategic planning process. The top level is the strategic plan followed in the second level with those top four-to-six strategic goals. The most likely next level of detail is the strategic initiatives. Those become the program components, which typically will be assigned to mid-level managers and directors within the organization. "The program work breakdown structure (PWBS) provides



FIGURE 2.1
Example of a strategic plan PWBS.

deliverable-oriented hierarchical decomposition of the work to be executed and accomplished by each project (component) of the program" (PMI®, 2008, p. 117).

Most program managers will find the creation of the PWBS for an organization's strategic plan to be an enormous challenge. Why? The reason is that the decomposition process will require the participation of the executive team. As far as the strategic plan is concerned, the executives are the subject matter experts. Program managers may find an enormous challenge in organizing the thoughts of the executive team in a deliverable-based structure. Because of the importance of creating a complete and accurate PWBS, the program team may need to enlist the services of a skilled facilitator (if a management consulting organization assisted in the creation of the strategic plan, they may have the necessary skills to assist in the PWBS preparation).

One such facilitated methodology is the Mutually Exclusive, Collectively Exhaustive (MECE) process used by the management consulting organization McKinsey & Company (Rasiel, 1999, p. 6). This process makes use of an issue tree, and in the case of creating the components necessary to implement strategy, the team begins with a strategic goal and articulates the definition(s) of success in achieving that goal. Further, the team then names components to be achieved that satisfy the definition of success. In the case of program components to achieve a strategic vision, there should be no overlaps (mutually exclusive), and, once completed, there should be no gaps in the satisfaction of the goal (collectively exhaustive). The result should be actionable components of the program that will meet the strategic goal without wasted effort to accomplish it.

Of course, there are exceptions, as previously noted, when the timing of the benefits realization outweighs the additional cost in duplication of effort. The lowest-level elements of the issue tree, in the above exercise, become the individual program components for execution. This becomes the lowest level of the PWBS, and each one can be placed on the program roadmap, prioritized by the executive overseers, and assigned to initiative leaders as appropriate. Of course, while these components should be mutually exclusive, they are not absent of dependencies. The program manager needs to plan to manage the interfaces among and between the components. Those interfaces are an extremely important consideration when outlining the benefits realization expectations for stakeholders.

The above process within the program setup phase of the program life cycle satisfies the remaining parts of the benefits analysis and planning

process of the program benefits management. Specifically, program components have been derived (prioritization will be ongoing throughout the program life cycle with input from the executive oversight committee), through the use of the issue tree process (above), benefits metrics have been established, the issue tree process focuses on realization of benefits, and the governance structure establishes the monitoring process for benefits realization, and, finally, the program roadmap contains the timing of the components to achieve, as well as the expectations of the realization of program benefits.

Program governance should outline how the individual components will be managed. Often with strategic initiatives, the management of the individual initiatives is not consistent because of differences in skill levels and backgrounds in project management by the individual component leaders. Program governance should create a consistent and reusable process for the component leaders. Readers of this book should be well aware of the value of consistent program and project management discipline across multiple organizational projects. That discipline now finds its way to the most important strategic programs and projects the organization is undertaking. Here the program manager can serve as a mentor to the initiative leaders, giving them the tools and facilitating the skills useful in planning the work for each component. The program manager should also assess any challenges that may be present because of the absence of project management skills.

Certainly, one of the many advantages of using program and project management process disciplines in implementing strategy is identifying gaps in skills, competencies, and knowledge of component leaders early in the process of working on the strategic initiative. These gaps can, at least, be communicated, and they potentially can be addressed through training or reassignment of the leadership role. The idea being to put the organization in the best position to implement its strategy, this is best achieved by putting leaders in place who have the ability to be successful.

As the individual components begin to organize, the overall program budget can be developed with more complete information. As the program and component teams progressively elaborate specific deliverables, schedules, and estimates of effort and duration, the cost of implementing the strategic vision becomes clearer. Certainly cost estimates, as an input to benefit analysis, are an important consideration as the program moves through the next decision gate and toward delivery of program benefits. Based on what is now known, do the organization's executives want to

continue toward the future vision, or should that vision be revisited and adjusted? It is better to make any adjustments at this stage rather than at a later point in the life cycle.

The program setup phase should include defining the change management process. As noted earlier, there are many influences, both internal and external to an organization, which may necessitate a change in the program. These can range from a major change in strategic goals to changes in the strategic initiatives (components), either in the substance of the benefits and/or deliverables or in the prioritization and timing of the realization of benefits. In any of these circumstances, the program should have a defined process to document the desired change, review it, and determine the impact of the change; decide if the change will be approved; and, if needed, make the required changes to the program plan to incorporate approved changes. It becomes vitally important to identify the person or persons who will be reviewing and approving or disapproving the change requests. Most likely, changes will be categorized by impact, and the review process will vary according to those categories.

There is one more important piece in program setup before the strategic plan moves into delivery of program benefits. That piece is the program communications plan. Communications planning is always extremely important for projects and programs alike. We are now discussing the most important initiatives determining how the organization will look in the future. *How many employees within an organization understand the vision of the future as outlined in the strategic plan? How many managers within an organization can recite the company's mission and vision statements?* Program managers understand the importance of a comprehensive communications plan based on stakeholder analysis. In implementing a strategic plan, it becomes important both to communicate at different levels within the organization, as well as to make sure that the information released does not compromise the future success of the organization.

At this point in the program life cycle, there is a well-defined plan for achieving the benefits that have been identified and outlined. The time frame for delivery of these benefits should correspond to the current strategic planning horizon (usually three-to-six years). As the strategic plan goes through periodic reviews, the components within the program will change. Some will be added, some deleted, and the priority driving the schedule of some will be adjusted. At the end of the program setup phase, the executive oversight committee should meet and review progress to date and consider all the information that has been created and gathered

to this point. The committee will decide make a go or no-go decision and, assuming the decision is to go, move to the next phase.

DELIVERY OF PROGRAM BENEFITS

The actual work of delivering the benefits of the strategic plan begins:

> At this point in the program's life cycle, the program has passed another phase-gate review (G3) and the core work of the program-through its components-begins. The phase ends only when the planned benefits of the program have been achieved, delivered and accepted or a decision is made to terminate the program (PMI®, 2008, p.28).

Now benefits realization within the program benefits management process begins. The work on the strategic initiatives begins, which means that the program components are initiated. Many of the components will be managed as projects, and formal project management processes should be followed. Each component should create a charter that will formally recognize the component as being worked on at this time. A project manager should be assigned to each component, even if the organization has a different name for that role. Initiative Leader and Point of Contact are common titles. The role of initiative leader is a project manager role. That individual will need to manage initiating, planning, executing, monitoring and controlling, and closing the components for which he or she is responsible.

In addition, the leader will need to follow the governance process for reporting benefits realization, managing change requests, and communicating status. Change management, risk management, and control of issues become extremely important because of potential interdependencies with other components and the benefits realization expectations at the program level. The program manager, or some experienced project manager within the program team, may spend a great deal of time mentoring initiative leaders who lack project management knowledge and skills.

The program team has the responsibility to communicate any environmental changes to the component leaders, which may impact the benefits to be realized. In addition, the program team must assure that the component deliverables meet the requirements in order to fulfill the realization of benefits. Program status reports need to include the progress of meeting

deliverables but also must communicate if there are any additional actions required to realize benefits (even if it is just to communicate an estimated delay in benefits realization after the deliverables are met).

It is important to remember that the audience that will receive communication related to the strategic plan is much more extensive than it would be for most programs. Potentially, the program communications could go to all levels within the organization as well as to the Board of Directors, stockholders, customers, and other parties with an interest in where the organization is headed and what the progress is to get there. The use of a benefits register becomes important as the organization reports out based on the progress toward the long-term vision. In turn, the actual benefits realized need to be measured against what was anticipated. This measurement may initiative corrective or additional actions for the program.

Signoff on deliverables is important within the program itself. The components will complete deliverables, and the program governance needs a process for review, measurement, and acceptance of them. A unique characteristic for a strategic plan program is that the benefits realized through the component deliverables may rely on the market or other factors. Nevertheless, the program team must manage the deliverables but focus and report on benefits realized. This necessitates communications and interactions with the highest levels within the company. The program team must seek to influence and/or control factors normally outside of the realm of a typical program team.

Through an ongoing process while benefits are realized, the program team must transition the completed component work product to operations. The changes created through strategic initiatives now become the new norm for the organization. This transition necessitates that the program team be skilled in (or elsewhere purchase the skill) organizational change. The benefits realized from strategic initiatives and goals could be far reaching and extensive. In some cases, the organization will make a fundamental change in the way it does business, or the way things are done within the organization. Without an organizational change process, the new way of doing things will not get institutionalized and may have limited impact.

Typically, the strategic plan of an organization is written for a planning horizon of three-to-six years. This should not imply that the strategic planning process is static during that timeframe. Very likely, the plan will receive a significant review at least annually. Significant change or refocus will occur on a less frequent basis (perhaps at the end of the original

planning horizon). The program closure phase should formally occur only at significant rewrites of the strategic plan.

PROGRAM CLOSURE

In the area of strategic planning, program closure should only happen if the strategic vision changes and if the level strategic goals are replaced. This often will happen when companies merge or where there is a dramatic shift in the type of business the company undertakes. The program closure should happen much like any other program. More than likely, the executive team that creates the new strategy will have little interest in any part of the completed program. Their main concern along those lines will be to make sure that all work stops on the previous plan's initiatives. The program manager should work though the discipline of making sure all components go through a closing process. In addition, any benefits that are realized or partially realized should be documented, and a determination should be made as to the transition to operations based on the revised strategy (we do not want to transition anything that has no perceived value in light of the new organizational vision).

Certainly, lessons learned should be accumulated. The program manager and team should attempt to get a final review of overall progress with the executive oversight committee. Finally, the determination should be made regarding the program team and any role they will have in implementing the new strategic vision. The focus needs to be on how well the program was executed based on the vision and plan that was true at the time. A change in strategic direction should be viewed as a changed end-state vision and not be a negative reflection on the progress toward the old vision.

BENEFITS OF MANAGING THE STRATEGIC PLAN AS A PROGRAM

To the organization: it allows a value-added process to manage the strategic plan and the individual projects or initiatives within the plan. Having a best practices approach to communications significantly increases the

chances that more people within the organization will know about where the organization is headed and may allow more individuals to become involved in achieving the desired results. The strategic planning process now comes under the discipline umbrella of program management. Status reporting will increase the visibility of the progress and potential pitfalls along the way. A systematic process of reviewing the strategic plan can assist in determining if the plan is still valid for the organization.

Is anyone aware of a company that does not purport to do strategic planning? Most every organization proudly reports its mission and vision to employees, investors, and potential investors. Many will make public at least part of the strategic goals they are working toward to achieve their desired outcomes. How successful each organization is in reaching those goals may be another story. Corporations and other organizations will write about the accomplishments they have completed in their annual report. Not many will specifically report progress on the strategic plan previously prepared.

SUMMARY

Along with providing value to their customers, the most important work within an organization should be creating the future vision of the organization. Most major companies, as well as government and civic organizations, spend incredible planning effort to create their strategic plan, their outline on how they want the organization to look and act in the future. Many of these organizations never fully realize that vision. Using program management best practices, focusing on realizing the benefits outlined in the strategic plan, and having an experienced and knowledgeable program management team leading the effort will significantly increase the chances of implementing the vision created within the strategic plan.

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3

Change Management: The Good, the Bad and the Ugly

Kathleen M. Hibson, PgMP, Six Sigma Black Belt

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INTRODUCTION

Whether outsourcing back office functions for the corporation, implementing Six Sigma in a manufacturing plant, or leading an information technology (IT) consolidation effort for the government, today's program managers are faced with the complex challenges associated with change management. Change management, in this context, does not mean following the steps to deal with a change in project schedule, scope, or the program management plan. It does mean managing the people side of change to achieve the required outcomes of a change program or initiative, which includes policy, process, workforce, data, and technology. The underlying fundamental implication is that in change management initiatives, like the examples cited above, people are required to change how they do their day-to-day jobs. No big deal, right? Document the new processes and/or install the new equipment, train the employees, and declare success. Wrong! Most people are, to some degree, resistant to change. It is

this personal resistance to change that creates additional complexity for the program or project manager of a change management initiative.

In the last five years, more and more program managers are faced with leading organizations through large, complex change management initiatives to improve efficiencies in a struggling economy and must deal with the very difficult personnel emotional responses. Fortunately, there are many seasoned program managers that are willing to share their lessons learned and best practices.

This chapter will describe what is meant when people refer to a change management program or initiative, the top reasons employees are resistant to change, how program managers can deal with this resistance, the change management roles and responsibilities of the program players, and the challenge of measuring program success.

WHAT IS CHANGE MANAGEMENT?

When program managers hear the term change management, they usually think of program governance and the monitor and control of program changes. As discussed the Project Management Institute's (PMI®) *The Standard for Program Management*, Second Edition (2008), this is the "process that ensures the appropriate level of governance is applied to decision making regarding proposed changes to the program plan" (p. 267). It is understood that every program will encounter changes throughout the program life cycle or phases and therefore must establish some form of governance to handle those changes in a consistent and repeatable manner.

A change management program or initiative refers to a particular type of program. Typically, a change management program is initiated to cause improvements in the performance of the corporation or enterprise. It usually involves making changes to policies, processes, data, technology, and people (organization structures). A change management program often takes years to achieve success. It involves a change in the culture of the organization, a transformation from the current way of operating to an improved future state or better enterprise. As Kotter (1995) stated, the basic goal is the same in almost all change management efforts, which is to make fundamental changes in how business is conducted in order to help cope with a new, more challenging market environment.

While a change management program is a particular type of program, it still follows the major phases of the program life cycle as defined by PMI® (2008, p. 18): pre-program preparations, program initiation, program setup, delivery of the program benefits, and program closure.

However, the approach to implementing a change management program can be very different. The US government recently conducted a series of technical exchange meetings on the topic of Enterprise Transformation with several companies from the private and public sectors. The companies' management of enterprise transformations could be grouped into three broad categories: companies who had undergone transformations within their respective organizations, companies who developed a structured approach to change management and provided that methodology as a service to other companies wanting to transform, and companies who had undergone transformation and were now providing their methodology and expertise to other companies as an offered service. All company representatives discussed the program life cycle and several similar themes in how to attain a successful transformation:

- *Leadership Support and Endorsement*—it is essential that organization leadership enable and support the effort throughout the life cycle.
- *Mission Improvement*—regardless of the nature of the change, leadership must communicate how the primary corporate mission will be improved and how that in turn will benefit the employees.
- *Long-Term Commitment*—all companies pointed out that transformation takes a long time and that leadership's endorsement and support must be sustained.
- *Expected Outcomes and Performance Measures*—a performance management framework must be established to enable visibility as to how the transformation is proceeding and where additional attention might be needed.
- *Quick Wins*—it is critical to devise a strategy that achieves improvement results early in the program.
- *Establish a Change Management Team/Program Management Office*—an identified organization and specific individuals need to be responsible and accountable for the change management.

While the companies agreed on the above activities, they disagreed on approach. Some said a top-down approach was best, where leadership defines the end state or concept of operations with a strong focus on

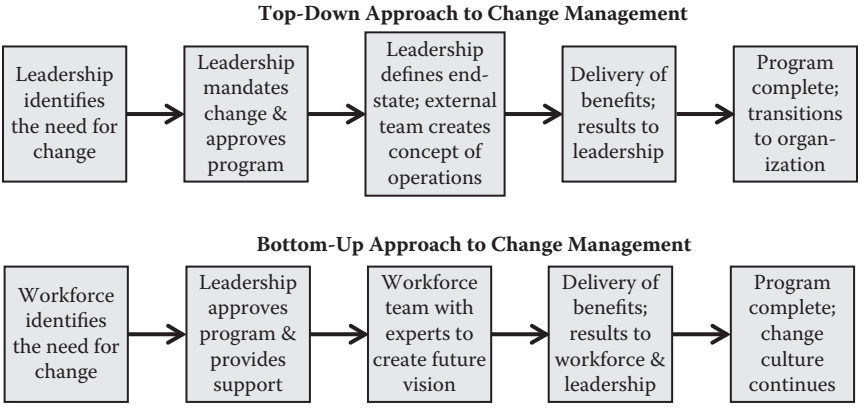


FIGURE 3.1
Approaches to change management.

deliverables. However, other companies believe a bottom-up approach is better, where the employees are more involved such as through "communities of interest" that foster the needed innovation. Then there was a third proponent that stated a combination of the two was most successful (Lewis and Brown, 2011). Figure 3.1 shows the differences between the two extremes.

The difference in approach can drive the success or failure of the change management program because the primary difference in activities is the involvement of the workforce. "Success depends on persuading hundreds or thousands of groups and individuals to change the way they work, a transformation people will accept only if they can be persuaded to think differently about their jobs." (Lawson and Price, 2003)

Therefore, it is no wonder that in Kotter (1996) in his foundational work in the field of change management revealed that only 30 percent of change programs succeed. After the publication of his book, there was a proliferation of articles and books published on this topic. Then over 10 years later, McKinsey (2008) conducted a survey of 3,199 executives around the world and still found that only one transformation in three succeeded. Despite the increased attention by researchers and academia in this field, the management of organizational change remains a challenge. It appears that whenever people and their emotions are involved, the level of complexity associated with the effort rises by an order of magnitude.

TOP TEN REASONS PEOPLE ARE RESISTANT TO CHANGE

Resistance is a natural and unavoidable reaction to a change situation. There are many reasons why people resist change; most people are reluctant to leave the familiar behind. They are concerned about how they will get from the current state to the new improved state. According to de Jager (2001) resistance is simply a very effective, very powerful, very useful survival mechanism. Assume, for example, that you have been asked to lead an effort to streamline your company's Human Resource (HR) business operations. For the most part the current HR policies, processes, systems, and HR organization have been in place for at least five years and have been doing a good job hiring new employees, managing employee compensation and benefits, etc. Essentially, you are being asked to implement a new, untested method of doing HR business, that may or may not require policy changes, that may or may not change the flow of work, and that may or may not require the same skills as the current HR workforce, etc. Furthermore, you have been told that senior leadership expects a 15% reduction in the total cost of HR operations over 24 months, for a system that you have not seen before. Not only are you skeptical, but the rumors in the HR department have begun with "you are expected to adapt or else."

In this scenario, the top ten reasons for resistance to change as identified by Schuler (2003) can be anticipated:

1. The risk of change is seen as greater than the risk of standing still.
2. People feel connected to other people who are identified with the old way of working.
3. People have no role models for the new activity.
4. People fear they lack the competence to change.
5. People feel overloaded and overwhelmed.
6. People have a healthy skepticism and want to be sure the new ideas are sound.
7. People fear hidden agendas exist among would-be reformers.
8. People feel the proposed change threatens their notions of themselves.
9. People anticipate a loss of status or quality of life.
10. People genuinely believe that the proposed change is a bad idea.

HOW TO ADDRESS CHANGE RESISTANCE AND MANAGE CHANGE?

Now that the reasons for change resistance are better understood, how can they best be addressed? Lawson and Price (2003) identified four conditions for changing the mind-sets of employees. Independently, but during this same time period, an automotive supplier was implementing Six Sigma throughout the corporation to improve quality and create efficiencies. The project was successful and will demonstrate a practical application for the theoretical concepts.

The first condition to altering an employee's mind-set is to create "a purpose to believe in. The implication of this finding for an organization is that if its people believe in its overall purpose, they will be happy to change their individual behavior to serve that purpose—indeed, they will suffer from cognitive dissonance if they don't" (Lawson and Price, 2003). In this situation, cognitive dissonance is a [mental] discomfort caused by holding conflicting cognitions (e.g., ideas, beliefs, values, and emotional reactions) simultaneously. In a state of dissonance, people may feel surprise, dread, guilt, anger, or embarrassment. The theory of cognitive dissonance proposes that people have a motivational drive to reduce dissonance by altering existing cognitions or adding new ones to create consistency (Festinger, 1957). The objective here is to describe the goal of the change program and what makes it worthwhile, so that everyone understands their contributions, and it makes sense to them as individuals.

At the automotive supplier, a core Six Sigma organization was established, and an in-depth communications plan was executed. It started with the Chief Executive Officer (CEO) traveling to several of the major locations (design centers, manufacturing plants, etc.) and conducting "town halls" to launch the Six Sigma program around the corporation. His message provided the imperative for why the corporation wanted to implement Six Sigma, what it was, how it would be implemented, and the performance goals that were established for the following 24 months. Videos of the town halls were posted on the internal corporate website so that everyone had an opportunity to hear the message. Subsequent forums were conducted throughout the program implementation, approximately once per quarter to provide an update on progress. In addition to the internal messaging, various external messaging channels were used such

as the corporate annual report (for the shareholders) and special meetings with the supply chain partners and customers.

The second condition for changing the mind-set of employees, as described by Lawson and Price (2003), is to ensure that the infrastructure, i.e., measurement systems, rewards and recognition programs, and operational processes, align with the desired behavior. B. F. Skinner's theories of conditioning and positive reinforcement are used as the basis of this condition. "Organizational designers broadly agree that reporting structures, management and operational processes, and measurement procedures must be consistent with the behavior people are asked to embrace. When a company's goals for new behavior are not reinforced, employees are less likely to adopt it consistently" (Festinger, 1957).

Within the first year of the automotive supplier's implementation of Six Sigma, several changes were made to the business operations to reflect the use of the methods, tools, and techniques associated with Six Sigma. A statistical analysis application was added to the standard suite of software loaded on employee workstations so that personnel working Six Sigma projects had easy access to the tools. A cost information system was developed to uniformly track and report Six Sigma projects and results. Several aspects of employee career development and performance appraisal process were updated: a policy was issued requiring all salaried employees to become "green belt" certified and to complete one Six Sigma project per year, annual performance evaluations were modified to include Six Sigma proficiency, and a career path specifically for Six Sigma professionals was established. Monetary rewards were also given quarterly for Six Sigma project work that achieved or exceeded a target threshold of cost savings.

According to Lawson and Price (2003), the third condition for changing an employee's mind-set is to provide employees the skills required to change. They make the case that it is unreasonable to expect adults to make relevant changes in behavior if they are not equipped with the skills needed. Lawson and Price (2003) reference David Kolb's four-phase adult learning cycle to make the point that learning cannot occur merely by listening to instructions; "they must also absorb the new information, use it in experimentation, and integrate it with their existing knowledge."

At the beginning of the automotive supplier's implementation of Six Sigma, it hired a consulting firm to assist in the rollout of the new methodologies, tools, and techniques. The approach the consultants used for

training seemed to follow the Kolb four-phase learning cycle. First they provided instruction for the Six Sigma methods, tools, and techniques including example projects over the course of a week or two depending on the participant's future role in the Six Sigma program, i.e., green belt, black belt or master black belt. As part of the training, each participant was assigned a project to work that was discussed during the initial training session. They coached each training participant while they worked on their project, over the course of a month or two, and then brought the class back together to review the projects as a group. After completion of the classroom instruction and the initial project, the employee was then asked to work with his or her supervisor to identify a project that would benefit his or her day-to-day job thereby enabling each person in the class to use his or her existing knowledge and expertise. Furthermore, the employee was assigned an experienced coach and given time to work the project over the course of the next year.

The last condition for changing employee behavior, described by Lawson and Price (2003), is to provide role models—seeing people they respect performing the new behaviors that are desired by the organization. They believe that people model their behavior on "significant others", other people they see in a position of influence. Role models can be at various levels of the organization and can deal with tasks differently, but the underlying values informing their behavior must be consistent. Additionally, role models should be associated with and supported by the groups that surrounded them, the groups with which people identify.

In the implementation of Six Sigma practical example, the company used a two-prong approach. First, it created a core group of professionals that would perform full time as a Six Sigma black belt for a period of two years. Employees were allowed to apply for the positions and given the opportunity to learn new skills that were quickly becoming highly coveted in the marketplace, with the understanding that a choice position would be available to them at the end of their temporary assignment. Of course only the best of the best were selected, as these individuals would be the role models of change. The second approach, done in parallel, was that each leader in the organization, from the CEO down, was to attend training and complete a Six Sigma project of his or her own. The leaders' project "storyboards" were posted on the internal website for all to see. So whether the role model was the Chief Operating Officer or the colleague who was on the fast track, the employees could see them "walking the talk".

By addressing employee resistance and creating the four conditions to change the organization mind-set, how did our automotive supplier perform in its implementation of Six Sigma? For several years following its company-wide roll out of Six Sigma, it showed significant cost savings, increased the number of flawless product launches, and reduced the number of product defects. Today, the company retains a strong position in the automotive marketplace and holds the number one or two position in its product lines.

PROGRAM ROLES AND RESPONSIBILITIES

Successful program managers of change understand that there are a number of players throughout the organization that must be actively engaged, fulfilling their specific role based on their unique relationship to change. Understanding the players and their roles will provide a better context for understanding the roles and responsibilities of the program manager. Each of the roles, presented in Figure 3.2 below, has a unique relationship to change, and thus has a unique role in change management.

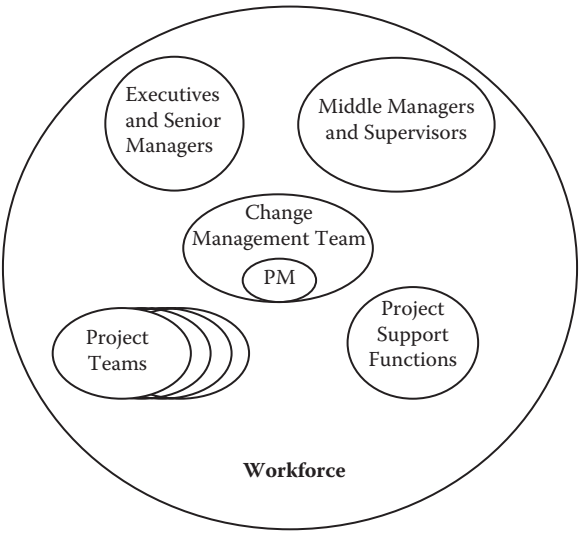


FIGURE 3.2
Roles and responsibilities in change management.

- ***Executives and Senior Managers*:** Leadership and support was one of the common themes cited as needed for success during the industry and government technical exchange meetings, discussed earlier in this chapter. Employees want to see and hear the executive's commitment to the change. The authority they provide carries over to other change management roles. Specific responsibilities include:
  - *Participate actively and visibly throughout the project*—sponsors must be engaged in the project and seen by employees.
  - *Build a collaboration of sponsorship and manage resistance*—the executives should create a collaborative environment for sponsors, managers, and leaders, who will make decisions and take the change back to their department, division, workgroup, program, etc. In more formal organizations, the executive sponsor may establish a steering committee, which meets periodically to discuss the progress and direction of the change effort.
  - *Communicate directly with employees*—employees want to hear the business reasons for the change from someone at the top; executives and senior managers are preferred senders of change messages.
- ***Middle Managers and Supervisors*:** Managers and supervisors are close to the action and the workforce—it is their people who must change how they do their jobs for the change to be successful. Whether a top-down or bottom-up approach is followed, managers and supervisors support their employees. The employees reflect the attitude and actions of a manager—whether the attitude is one of support or one of opposition. Responsibilities for this role are to be:
  - *A Communicator*—employees tend to believe messages about how the change directly impacts them and their team from the person who provides their day-to-day assignments.
  - *An Advocate*—if the manager opposes the change, chances are that his or her people will as well—in many cases, the opposite is also true.
  - *A Coach*—helping employees through their own personal transitions is the essence of change coaching by middle managers and supervisors. It is a natural role of the supervisor regardless of whether it is a change program or something else.
  - *A Liaison*—the role of liaison involves interacting with the project team, taking direction and providing input and feedback.

  - *A Resistance Manager*—as the immediate supervisor is closest to the employee, he or she can provide the best intervention to mitigate resistance.
- ***Project Team(s)*:** The project teams are tasked with managing the technical side of the change. They are responsible for producing the products, services, and/or results. The project teams ensure the overall goals, schedules, budget, and benefits of the program will be met. The project team also plays a role in ensuring that change management is part of the project. Responsibilities of this role are to:
  - *Design the actual change*—create the solution that ultimately impacts how people do their jobs.
  - *Manage the "technical side"*—with tools such as the business case, schedule, resources, work breakdown structure, budget, etc.
  - *Engage with the change management team*—work with the change management team to ensure that the technical side and the people side of the change progress is in unison.
  - *Integrate the change management plans into the project plans*—start change management at the beginning of the project and weave the change management strategy and plans into the technical side plans to create one seamless project plan.
- ***Project Support Functions*:** Project support functions bring expertise in a particular area—these groups include: Human Resources staff, Training Specialists, Communication Specialists, Subject Matter Experts, Solution Designers, etc. In some programs, these employees would design the future state vision (particularly if the program uses a bottom-up approach). At a minimum, these functions would provide the "as-is" documents. In general, their responsibilities are to provide:
  - *Experience and expertise*—project support functions bring experience from past changes, i.e., lessons learned and best practices that can be applied to the current change.
  - *Knowledge*—each of these groups has specialized knowledge that can help the project team and the change management team.
  - *Tools*—each of the areas may have specific tools that would support the change management activities.
- ***Change Management Team*:** Having dedicated resources for change management was also on the list of the overall greatest contributors to success from the technical exchange meetings. There is a growing

body of data that shows a correlation between the success of a change initiative and how well the people side was managed. The establishment of a Change Management Team/Program Management Office (PMO) is a critical signal to the organization that leadership is seeking significant changes and is willing to make the needed investment. Responsibilities of this role, in addition to the normal PMO responsibilities, are to:

- *Apply a structured change management methodology*—instead of operating in an ad hoc manner, approach change management with purpose and intent, following a process, and using standard tools.
- *Formulate strategy*—evaluate how large the change is and who will be impacted to develop a customized strategy.
- *Develop plans*—based on the strategy work, create a customized set of plans for moving people forward including a communication plan, a stakeholder management plan, a transformation roadmap, a training plan, and a resistance management plan.
- *Support other roles*—the change management team is the "focal point for change" and the go-to team for the other roles, particularly the executives, senior leaders, managers, and supervisors.

- ***Program Manager*:** The program manager is the leader of the Change Management Team/PMO. As such, he or she has a very challenging set of responsibilities and must wear a variety of hats, many at the same time. The importance of each role will vary depending what is happening in the program. The most critical roles for the program manager in this type of program are:
  - *Strategist*—every change initiative is different. The organizations are different. The imperative for change is different. The scope, cost, and schedule are different, etc. The program manager must take everything into consideration when creating a strategy. Additionally, it is almost a guaranteed that the parameters will change throughout the life of the program; therefore, the program manager should consider the strategy a living document that will be updated as required.
  - *Communicator*—because of the large number of stakeholders involved in the program, communications are key to the success of the program. It has not been stated that a program failed because there was too much messaging. However, it is important that the key messages are clear and consistent regardless of who

is giving them. The program manager is responsible for creating the key messages and executing the communication plan.

- *Integrator*—the program manager is the focal point for ensuring that all the moving parts fit together and are moving in the same direction. Unlike a typical IT program, the program manager also needs to ensure that the people side of the program aligns with the technical side of the program.
- *Overseer*—as the program progresses, the program manager is responsible to provide a periodic program assessment to the executives and senior leadership team, the steering committee, and other key stakeholders. This assessment includes an update on program progress, the risks and mitigation plans, as well as, how the change is impacting the performance of the organization. Performance measures should include incremental value delivered, i.e., quick wins, such that buy-in is achieved and sustained by the stakeholders.

MEASURING SUCCESS

One of the themes, *Expected Outcomes and Performance Measures*, was cited by government and industry professionals as a key contributor to the success of any change management program (Lewis and Brown, 2011). When this area was probed a little deeper, the experienced change professionals felt it was necessary to enable visibility and transparency as to how the transformation is proceeding and where additional attention might be needed. It is important for all stakeholders to see progress and/or impediments so that appropriate action can be taken. Assessments and measurement ties to another condition for success—*quick wins*; how do you know you have had a success? In fact, there are many who have studied the topic of performance measurement, as it is believed to be critical to the viability of a business. Some of the more notable scholars in this field of study are Kaplan and Norton (1996), who are credited with having developed the "balanced scorecard", a strategic performance management tool which can be used by managers to track execution of activities executed by their staff and the impact arising from these actions. Neely, Adams, and Kennerley (2002) felt that in order for a business to be

successful over time, they had to address all stakeholders. They proposed a performance framework, the performance prism, which is structured to throw light on the complexities of an organization's relationships with its multiple stakeholders. The list of scholarly works professing the necessity for performance measurements is quite substantial.

While many researchers and practitioners feel that performance of the organization should be measured in order to achieve success, one group of researchers identified negative assessment of progress to be one of the ten challenges or forces which oppose profound change. Senge, Kleiner, Roberts, Ross, Roth and Smith (1999) see the challenge associated with measuring progress on a transformational program as threefold:

1. There is a time delay between when most of the most important results show up and when the innovative behavior occurred. This delay could be several years.
2. Innovation is complex. In a change program there are a lot of things changing such as processes, technology, policy, etc. that give different results.
3. Many organizations continue to run their existing measurement systems, which may be inappropriate yet no one challenges whether the systems are useful.

Side affects from the initiative may appear as negative results on the traditional metrics.

Senge et al (1999) offer several strategies for addressing these issues:

- Learn to appreciate and account for the time delays inherent in profound change.
- Do not judge the success or failure of the efforts on early results. Manage stakeholder expectations and help them understand the reality of gestation periods. And do not promise better results than needed. It is better to under promise and over deliver than to over promise and under deliver.
- Build a partnership with executive leaders around assessing the assessment processes. As Ford's Quality Strategy Director Edward Baker notes conventional measurements present a trap that can kill change in learning initiatives by requiring them to report their results that can hamstring innovation.

- Learn to recognize and appreciate progress as it occurs. One of the most important tasks of teams involved in change is to demonstrate that they are making progress. To help people gauge their progress, establish interim short-term targets or utilize a progression model such as the one developed and used by several organizations within the Federal Government as shown in Figure 3.3 below.
- Make assessments as to the priorities for change.
- Learning to assess the consequences of significant change is a complex new territory often neglected by leaders of those changes. This implicitly forces those who may be negative toward those initiatives to bear responsibility for the measurement.
- Raise conversations early on about the criteria that determine success or failure. What is the appropriate amount of time before you see results? How will you know if you are successful? Managing up the hierarchy this way can lay a framework for partnership in assessing the project as it unfolds.
- Link business literacy to a new thinking about the metrics. A business literacy initiative can raise awareness of the many types of measurements required and how they fit the goals of the pilot group and the whole organization.

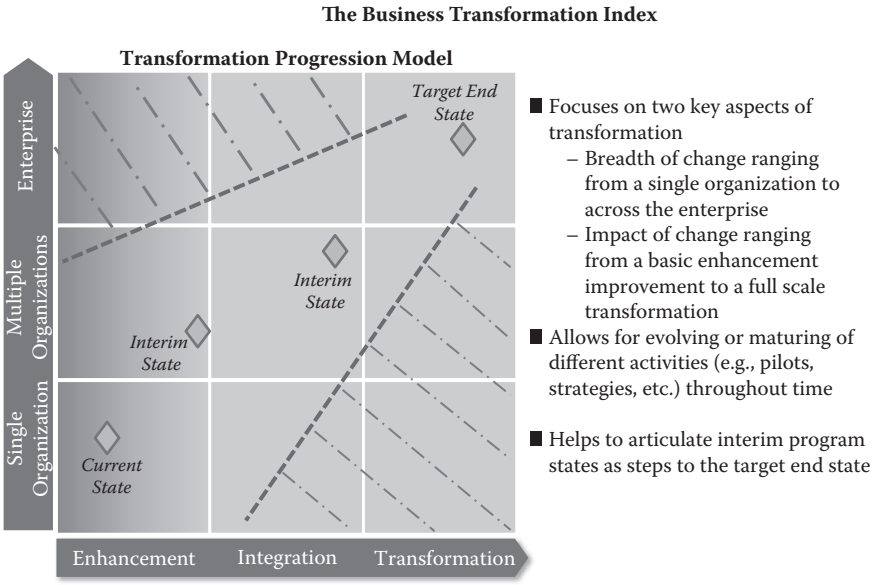


FIGURE 3.3
Transformation progression model.

SUMMARY

A change management program or initiative is very different from a traditional program because of the added complexity of managing the people side of change and the time required to achieve transformation. Resistance to change is a natural human response and a great risk to program success, however, there are methods, tools and techniques, as described by practitioners and experts alike, that the program team can employ that will lead to success.

The more pressing issue is understanding that program success is difficult to measure in change management efforts, and benefits may not be seen until years after the changes are implemented. In its 2008 Global CEO Study, that includes a survey population of 765 CEOs, business executives and public sector leaders from 20 different industries and 11 geographic regions, IBM reported that 61% of the respondents reported that they had successfully managed change in the past (IBM, 2008). So why is this rate of successfully managed change efforts reported in the IBM study double the rate reported in the McKinsey study, which was conducted in the same year? One reason is that there is not a one size, fits all standard methodology for measuring success of these large, complex transformational programs. Since both studies were based on the perceptions of the leadership, it reinforces the necessity for managing stakeholder expectations. In summary, program managers can and are managing change efforts successfully when using a more systematic approach, based on clear empirical lessons learned and best practices, while focusing on the people side of change.

> Change is inevitable. Change is constant.
>
> **Benjamin Disraeli (British Prime Minister and Novelist, 1804–1881)**

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Communication, Complexity Theory, and Programs

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INTRODUCTION

Communication and programs by their very nature are complex. Levin and Ward (2011) noted that program managers spend more than 90% of their time communicating internal and external to the program. A program normally expands a geographical boundary, which inherently makes it more complex. Programs by their nature invoke complexity theory because they are complex systems (Levin & Ward, 2011; Geraldi, 2008). Programs are not islands within the organizations. The outside environment, the individuals within the program, their interactions with each other and their dealings with the outside environment will affect the chaos and complexity on the program. These environmental factors create opportunities for the program manager to take advantage of the *butterfly effect* and *six degrees of separation*.

COMPLEXITY THEORY

Complexity theory has long been accepted in the world of hard sciences, such as math, biology and even the environmental sciences. Edward Lorenz found from his experiments in the realm of chaos that many things that do not appear to have order actually do. Scientists would have called this noise or randomness, but it is indeed chaos theory or complexity at work. Lorenz' attractor equation was able to clearly demonstrate order in the world of chaos (Wheatley, 1999).

Lorenz found that the atmosphere never reaches a state of equilibrium. Hence it is always in a state of chaos. When plotting the atmospheric conditions, it always plotted as butterfly wings or owl eyes. So, there was order in the randomness, or it could be said that the atmosphere is non-linear. In essence, the atmosphere disturbances were drawn to areas or attractors. Hence, it appeared as order in what previously was thought to be randomness.

Complexity theory acknowledges that humans by nature when living or working together are an open system. What makes complexity theory different than the traditional open systems theory is that the theory acknowledges that there are parts of the system that cannot be explained but acknowledges that there is normalcy in the randomness. Human beings like to break down the system into its smallest part to explain the whole. Western thought seems content to understand the universe as a discrete systems rather than a holistic interconnected system. By doing this and examining for example how a single ant works independently, it does not explain the dynamics of the colony. Or if we explain how the human heart works, it does not explain the interrelationship of the glands, brain, heart, blood, and so forth and what happens if one part is out of control. Or, how one part of the body will compensate for others (Curlee & Gordon, 2011)? A human body just like the ant has to adapt to its surroundings. There are many parts seemingly working independently but each depending on the other.

Hence, if complexity is introduced into the system should it be managed? Think about the ants that are away from the colony on a mission. If an unexpected situation is introduced into the army of ants on the mission or those in the colony, each section of ants begins to react no matter what the situation. Some would say it is instinct. Maybe it is. Without any central authority or predefined processes, the ants resume to their goal. Some

of the ants are more central to the goal, while others are more tangential, but all must perform as a team to ensure the queen's survival or the heir's survival will fail. Is a program any different?

Levin and Ward (2011) noted that programs were complex adaptive systems; self-organizing and learning from experiences. The program manager is the motivational force to drive programs to self-organize during complexity fringe times and to drive lessons learned. Lessons learned have to be dynamic, useful, and adapted instantaneously when necessary (Thomas & Mengel, 2008). The program manager must decide where standard program controls will function and must stay in place, and where complexity is allowed to take its course.

Seasoned program managers realize that a program is non-linear, and not all areas can be controlled. Most would not want to control the fringes of complexity or chaos, as this is where the creativity occurs (Curlee & Gordon, 2010). Those parts of the team that appear to be in total chaos may be doing the best work for the program; those work teams that have a catastrophic failure of some sort and are allowed to resolve it on their own, do so more quickly and efficiently. This approach appears to go contrary to standards suggested for the program environments.

One of the largest and arguable shortest programs in US history was the grounding of all air traffic following the terrorist attacks of September 11th, 2001. This is an excellent example of communication and non-linearity working together with a successful outcome. Once US leaders determined commercial aircraft were being used to attack buildings in the US, it was a matter of national security to have every plane in US airspace or heading toward US airspace land at the nearest airport. There was no procedure or process in place for all this to happen (Curlee & Gordon, 2011).

Academic and government researchers were interested to see if a procedure or process could be developed to address such a widespread domestic crisis. The researchers studied the data and examined how each set of air traffic controllers managed the situation. Ultimately, the study concluded that the best way to handle such a crisis would be to allow a non-linear approach. Each region had to dynamically manage the situation, only coordinating with the other regions when necessary. The study determined having established procedures or processes to handle such a situation would encumber the process and slow down the ultimate goal (Curlee & Gordon, 2011). This case study was a revelation to many in the project/program management industry because it demonstrated that a non-linear approach was better than a linear one in an industry that is process driven.

COMMUNICATION AND COMPLEXITY SUB THEORIES

The *butterfly theory* and six degrees of separation within chaos will help the program survive. These complexity sub theories can help the program manager decide where to focus the traditional best practices, where to allow complexity theory to take place, and when just to monitor progress (Curlee & Gordon, 2011; Cooke-Davies, Cicmil, Crawford, & Richardson, 2007). The program manager has to understand that the complexity theory is a part of nature and has to become comfortable with its effects.

The *butterfly effect* is the understanding that all forces are connected. When a program is moving forward, it is best to try to put all the forces working in the same direction. Just as the flapping wings of a butterfly in Japan can be a contributing force to the creation of a hurricane in Florida, it is necessary to understand that even a small impact can have a great effect when magnified over time and distance. Hence, a leader can motivate each individual project team, and program team members can assist in creating a controlled hurricane that can achieve complex tasks. Too often people do not realize that even small contributions can build to create something larger than their individual parts, and so the small contributions are ignored (Curlee & Gordon, 2011).

From the social networking perspective (six degrees of separation), complexity theory has made a quantum leap. The social networking site Facebook and the professional networking site LinkedIn are based on the sub theory of six degrees of separation from anyone within the network. Astute companies have allowed their program managers to establish program sites on internal "networking" sites or on external sites such as LinkedIn. The reasons are vast. Networking can happen almost instantaneously with an expert within your company for internal sites. Depending on the company's policy the brainstorming or problem resolution can be done quickly on a group site on LinkedIn. During the major Gulf Oil Crisis, a brain trust of academics and engineers were given a set of problems to resolve, which had been plaguing the clean-up efforts. This relatively inexpensive communication method provided numerous solutions that were forwarded to the US White House for consideration. This was done in one week.

Program managers need to harness technology to enhance the positive outcomes of the butterfly effect and six degrees of separation. The technology does not have to be state of the art. Using LinkedIn, Facebook, or

a company's social network would be a high-end solution. A lower-end solution, but just as effective, are Twitter, instant messenger, groupware, virtual meeting, web cams, and so forth. The imagination of the program manager and his or her team and the program manager's ability to lead and focus the team toward the program goals will harness the proper use of these tools in times of chaos.

LEADERSHIP, COMMUNICATION, TECHNOLOGY, AND COMPLEXITY

According to Jaafari's (2003) studies, which were supported by Leban's (2003) studies, a transformational leadership is the style best suited for the complex projects and programs. These research studies suggested that project management certifications and strong-armed processes and procedures did not help the complex project. The program manager needs to embrace chaos and change that are inherent on a program (Curlee & Gordon, 2011). Even as early as 1994, Overman and Loraine realized that complexity theory needed to be applied to complex projects and programs.

The ability for the program manager to encourage and accept change within the team on programs should be seen as encouraging creativity and growth; whereas, the need to control and maintain onerous processes and procedures encourages the *as is on a project*, which research suggests does not work on complex environments such as programs (Cooke-Davies, Cicmil, Crawford, & Richardson, 2007; Singh & Singh, 2002; Overman & Loraine, 1994). Singh and Singh suggested the project manager should focus the team leaders on "dynamic instability" (2002, p. 31); which could be inferred to the program manager instructing his or her project managers.

When examining the elements of leadership, power, managers, and the team, one finds these considerations require effective communication. Without communication, these elements are simply ineffective at best, and in the worst scenario cease to exist. Program managers that cannot communicate will not be able to perform effectively. The power relationship is often more about the communication relationship. A leader must understand the more rudimentary the form of communication that is available to the group, then the greater the limitation upon the tasks that the team will be able to perform. Just as in war, the radio gives the

individual soldier the orders necessary to complete the task; communication gives the leader the ability to have the individual worker complete his or her task. If communication is more robust, then more complex tasks can be communicated. Effective communications occurs when the message is transmitted in such a manner that the barriers to communication are marginalized, and the redundancy of the communication is increased.

Communication studies have shown that the actual words of the communication account for only a small portion of the message which is transmitted. The tone, body language, and demeanor account for the majority of the communication package. When communicating with someone from another culture, the tone, body language, and demeanor are going to almost always be incorrect for the cultural setting of the communication if the communicator is not versed in the culture. Furthermore, the actual words of the communication, which account for the minority of the message, probably are not the native tongue of one or both of the people communicating. Other studies show when people are communicating in stressful or dangerous situations they almost always revert to their native tongue for immediate communications. In times of stress, people have a predisposition to communicate in their native tongue, then is it any wonder that global organizations in distress have a difficulty communicating?

Lines of communication are critically important in complexity theory as it is the representation of command and control. It also represents the fluidity of how information is exchanged. By understanding how this impacts a program, there is a certain level of strength that develops from this form of communication. Just as the arteries carry blood throughout the body, the lines of communication carry information through the program team up to the sponsors and down to the projects. Taking this metaphor one step further, one can see that any blockage in an artery will have catastrophic effects—just as communication blockage would have a catastrophic effect in communication.

This limitation of communication technology has restricted leadership, power, and the relationship of managers and the team. Once this restriction has been lifted, and native, real time translations are available to individuals that could interact virtually, this process would then alter organizational growth. While this real-time technology is still one or two decades in the future, the program manager must understand the importance it has during a nonlinear event. Programs by their size and complexity will have a virtual aspect.

The first place this translation technology should be available should be through virtual teams. Virtual teams are already limited in their communication, via the medium of exchange. However early translation technology, will allow virtual organizations to communicate with others while maintaining their virtual communication in their own native tongue. For example, as bandwidth and data transmission technology are increasing in power, simple voice communication through the internet will have the capability to harness unused processing power to power translations of transmissions in this medium. Text transmissions could be translated instantly from short, direct text communications, while bundled e-mail, which included text, could be translated in route to the native language of the receiver of the e-mail. This cipher-link meta-program would then put all people on equal footing in multi-cultural, multi-national mega corporations. The early adapters of this technology would allow individuals to expand their corporate dimensions into areas and complexity previously not considered. A leader's influence would increase, as the program manager would then be able to lead greater numbers of diverse individuals. Key organizations would be able to expand past traditional national boundaries without the traditional exporting of personnel, culture, and processes. Other organizational processes could be controlled without adaptation and limited learning. Organizational knowledge would no longer be limited by language or culture. Technology is in transition, and teams and organizations are evolving. If leaders and power work best when there is physical proximity, then the relationship of the managers and the employees must utilize technology that will simulate physical proximity. When technology can replicate physical proximity, then teams, power, and the relationship between leaders and followers will have gone full circle.

THE FUTURE

Program management is a relatively young discipline, and it continues to evolve and develop. Complexity is part of the world, and the more that the program manager can leverage these dependencies and interdependencies, the greater that program manager can harness the strength of small groups, large groups, and even communities. Complexity is all around, and the program manager needs to accept that these interactions may not be

understood but needs to move toward understanding the ones that can be comprehended so that those can be used to achieve the program's goal. Once those few are harnessed, then the team, with guidance as needed from the program manager, needs to continue to expand upon the known to move toward the unknown in order to create a more precise method of handling all sizes of nonlinear situations with appropriate reactions.

Chaos and complexity have only been recognized in the past few decades as a viable field of business research and study. In the past, human and scientific study and research have been obsessed with finding the one and only answer to one question. Empirical research has been based upon finding one answer to one question. When one examines scientific study, there has always been a quest for the single variable universe. For too long, science has tried to reduce everything down to a single variable mathematical expression. One of Einstein's greatest achievement, e = mc2, was an attempt to explain energy in only one possible way. Unfortunately, the universe is not normally this tidy. One only has to look out the window to see that complexity is everywhere.

Complexity is not about knowing but about not knowing. About understanding that people and human systems are complex and fluid, these kinds of systems cannot be described by a single variable representation. In some cases, a leadership or team model might describe how it works, but it lacks the 100% repeatability and replication necessary to create an immutable law of nature. It turns out there are fewer laws of the universe than expected (Curlee & Gordon, 2011). The view of the universe is that there should be order and organization to everything, yet there is now reason to believe there are fewer laws, and even those laws are subject to revision. Programs are about people and their interactions. From one day to the next no one knows how a person will react to a similar situation. Did this person have a fight the night before with a significant other? Is the person coping with an illness? Did the person recently receive good or bad news? Is the person emotionally unstable? All these may or may not affect the dynamics of the events of the program.

As there is more research in the world regarding complexity, there is more to understand, but there will always be mysteries that are not fully understood and accepting that fact allows us to leverage those complexity driven systems in order to better handle a program. It is necessary to understand that people do not always behave like a machine nor should

that be the manner to treat them. To some degree there is always a degree of unpredictability in any human system, after all humans do not operate under the 100% or 0% productivity model like machines, humans can range in productivity from 0–100%.

People are some of the most complicated natural systems with so many related and interdependent systems that science has no good explanation for why everything interacts with such precision. Humans may have explanations for how these interdependent systems have been able to become so effective together, yet these interactions are still not fully understood. Even the human mind is not fully understood, although it has been studied for millenniums. There are different models to understand how electro-chemical reactions occur, yet it is not understood where the mind even resides. Additionally, human society, which has been under development since the first humans banded together for self-preservation, has long been studied, yet no definitive explanation has been forthcoming (Curlee & Gordon, 2011). Human society is still one of the vast, unexplained arenas of complexity and will likely remain that way.

Moving forward, the only clear reality is to consider this a world of complexity waiting to be understood. Program managers might not totally understand all of the interactions and interdependencies, but can use the ones that they do understand and can use the ones that can be seen. Ultimately, the goal is to find more complexity so that it can be leveraged to one's advantage in life, in business, and in a program to achieve its goals.

Complexity is everywhere, and complexity can assist business in achieving greater results with fewer resources. The more program managers and project managers can apply complexity, the better that they will be able to lead others. Complexity is about understanding the small in a way that it can be applied to the large. As programs will only become larger and more complex, the program managers that learn to leverage complexity will be able to handle larger mega-projects or programs (McKinnie, 2007).

SOME PARTING THOUGHTS

The Project Management Institute (2008) recognizes communication as the most important competency for a program manager. Levin and

Ward's (2011) program management complexity competency model has eight personal competencies. The first competency is communicating. The next seven personal competencies all involve communication.

Competency two is leading. Transformational leadership and its characteristics of mentorship and learning, adapt well to complexity within a program. According to Jaafari's (2003) studies, which were supported by Leban's (2003) studies, transformational leadership was the style best suited for the complex environment.

Building relationships is competency three. The program manager is communicating at all levels: Chief Executive Officer, stakeholders, program members, project members, and clients and in various mediums (written, verbal, formal, and informal). The program manager must realize that in this complex environment it is more about social interaction and the natural interest to understand each other and adjust our perceptions and requirements (Cicmil, Cooke-Davis, Crawford, & Richardson, 2009).

Negotiating follows building relationships. A good negotiator knows the constituency, the politics, and the interpersonal dynamics. The program manager will take advantage of the butterfly effect to negotiate and promote the program. Remember it may only take one strategic stakeholder to ensure the program stays visible.

Thinking critically demands that the program manager embrace the concepts of complexity, but at the same time articulate options, recommendations, and delegate tasks clearly. The program manager clearly has to define for him or herself what areas of the program can be touched and driven by chaos and what areas demand somewhat standard linear processing.

Facilitating is competency six. The program manager in most cases should be a transformational leader. The transformational leader is not laissez affair; however, the transformational leader expects responsibility and performance. The program manager as a transformational leader should know when to step in and help or when to step aside and let the work flow. The program manager keeps the team focused on the goal and removes the roadblocks (Levin & Ward, 2011).

Program managers should see themselves as mentors. To be of value to a protégé, the program manager must develop a social relationship (Cicmil et al., 2009). The social interaction must be mutual, or the mentorship will not be successful. Levin and Ward (2011) recommend a formal mentorship program; informal programs work as well and may be more meaningful since one of the parties sought the relationship. For the mentorship

to work, each side must be willing to give, take risks, and communicate effectively. For instance, should the protégé come to the mentor with a work situation, the mentor should be willing to provide examples of similar situations he or she encountered, what he or she did, and what happened. The protégé then must be willing to work with the mentor to see how the resolution worked and what could have been done differently.

Complexity cannot be engaged unless the program manager is willing to accept change. Change is counter intuitive to a project management culture; hence the program manager will have to effectively show with metrics, a benefits realization plan, and some persuasive discourse why delaying a project is beneficial for the program and the corporation's strategic goals.

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Program Initiation

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INTRODUCTION

Program initiation is a process where a program's foundation is laid, and the beginnings of its scope are framed and defined. And, although the Project Management Institute (PMI®) states that the Initiating Process Group "defines and authorizes the program or a project within a program, and produces the program benefits statement" (PMI®, 2008b, p. 40), the reality of initiating a program, the thing that gets it going, occurs way before this point. Before organizations are going to commit the "what" of a program, i.e., providing resources for defining, authorizing, and generating benefits statements, organizations will want to know the "why's" of a program. Specifically, "Why is this program necessary?," "Why is this work a priority?," "Why should I take risks on this opportunity?," etc.

Initiate means according to the Merriam Webster dictionary "*to cause or facilitate the beginning of or to set going.*" This definition is of paramount

importance in order to truly understand how to construct a solid foundation of success for your programs. And, for purposes of this chapter, program initiation means its broad, dictionary meaning, not to be confused with PMI® terminology or its processes. First, as the definition indicates, programs require a catalyst, something to facilitate their start or to set them going—hopefully in the right direction. This organizational catalyst is known as a business mandate.

PMI® defines two key processes within its *Program Initiating* process group of the program life cycle: "Initiate Program" and "Establish Program Financial Framework" (PMI®, 2008b, p. 41). While these two PMI® management processes contain extremely important aspects of setting up your program correctly, initiation of your program actually starts in a phase mentioned only briefly in the PMI's® *Standard for Program Management*, Second Edition entitled "Pre-Program Preparations." (PMI®, 2008b, pp. 22–23) Arguably, it is here, in the tasks that precede the PMI® initiating process group where the business mandate is defined, risks and benefits are understood, and, more importantly, where would-be programs are born. The execution of the processes thereafter is important in commemorating the agreements, needs, and benefits stemming logically from a well-developed business mandate. After all, the business mandate or case is an input to the PMI® initiating processes (PMI®, 2008b, p. 43).

Consequently, because program initiation provides the foundation of the business needs, begins to frame the entire program scope and define the benefits, and because it commemorates authorization to commit resources, it is, arguably, the most important process in your program. Consequently, it is imperative that it you understand it!

WHAT IS A PROGRAM?

Before we can begin to learn what is necessary to initiate a program, it is necessary to have an understanding of what a program is. Is a program simply a really big project? Is it a bunch of projects cleverly managed by one very skilled project manager? Many programs may be extremely large. Programs may often be expensive and can contain multiple complex projects. But, despite the many myths on what it is or is not, a program is really much more precise.

A program is a strategic method of managing two or more related, but temporary, endeavors. Each endeavor typically creates a unique product, service, or result (PMI®, 2008a, p. 5), and is integrated with the other endeavor(s), to bring about a common outcome or collective capability that would not have been otherwise available from managing the efforts individually. Moreover, the relationship among the endeavors must be more than that of a common client, seller, technology, or resource. Consequently, when managed well, the benefits delivered from a program will be greater than the sum of the benefits delivered from managing each endeavor separately (PMI®, 2008b, pp. 5–6).

Program endeavors are commonly known as the program's components. Components not only consist of the individual projects residing under the program but can also include future ongoing operations, other programs, and the program's infrastructure. Most of the components in a program are created after the program is initiated; however, it is not uncommon for programs to inherit existing components and resources. When this occurs, it is important to remember that the program also inherits all of the associated risks, costs, and other "baggage" that the component previously had. In addition, each and every component must be initiated, integrated, planned, executed, controlled, transitioned, and closed at the program level, if overall success is to be achieved. And, to end successfully, a program, and all of its components, must be initiated successfully.

While identifying what a program is may be the application of pseudo-scientific and, perhaps financial principles, initiating and managing your program is an art that will take great finesse, rigor, skill, and experience. To make a simple analogy, just because you have the carpentry skills to build a piano does not mean in the least you will have the talent and ability to play it; likewise with programs. Just because you can identify what a program is or that one needs to be created, does not mean in the least you will have the talent and ability to initiate and lead it effectively.

PROGRAM OR PROJECT MANAGER, WHO CARES?

Project managers should beware! Project management skills, though required, are never enough to successfully handle programs, which are distinct from projects in both their complexity and purpose. And generally

speaking, for reasons to be discussed later in this chapter, project managers may not always make good program managers.

Too often, companies are quick to say that they do not have, or need, for that matter, program management. They often think, albeit incorrectly, that program management is merely an advanced level for the project manager to reach. And, relying on success with the smaller, "everyday" type projects familiar to one's organization, complex mega-projects (or huge infrastructure modifications, for example, usually are termed projects, but may be better suited if managed as a program) and/or programs that infrequently arise often turn out benefits late and are over budget. Unfortunately in public companies, these programs impact the shareholders the most. Consequently, because of the infrequency of failure, many companies fail to make a business case for the necessary resources to obtain the training and skill sets necessary to be successful on the large, complex efforts. Instead, these companies often revert to the use of their plethora of well-skilled project managers to try to manage the complexities of a program through the individual management of separate and distinct component(s).

While in principle this approach seems logical, several questions should come to mind, such as, "Who is looking after the interdependencies?", "Who is managing change and ensuring strategic/organizational alignment?", and "Who is considering the integration of the schedule or risks?" Even with a well-trained, talented project manager at the helm of the individual components, the likely answer to these questions is "no one." Consequently, these efforts are akin to a ship with an underwater hole in her hull, where to the untrained eye, she seems to set sail in the right direction, but in reality, she continually takes on water until her demise. And, like a ship with a hole, programs managed with only project management principles are too often doomed efforts from their beginning and are at a high probability of delivering benefits late and being over budget.

Even more unfortunately, many organizations get to the end of an unsuspecting program they unsuccessfully managed as a project and never really know "why the boat sank." They immediately conduct lessons-learned sessions, they often blame poor risk and issue management, and often there is a finding that the "project" manager ran into unexpected things that he or she had "no way" of knowing. In other cases, issues affecting one section of the program ripple out of control and end up affecting many other pieces of the individual and related projects; moreover, no one seemed to ever anticipate the scope and magnitude of these changes. The real cause

for the failure was simple lack of program management. But because they fail to identify the true root cause, the cycle is prone to start all over again.

Program management is, therefore, not an option! Instead it is an essential skill that all companies executing complex projects and programs must understand well to be successful.

CAUTION: PROGRAM MANAGERS REQUIRE SPECIAL SKILLS!

There are many skills necessary to be a successful program manager, and, many of these skills, though similar in name and principle, are distinct from the project manager's skills. Consequently, not all project managers make good program managers.

First, program managers must fully understand the organization's project management methodology. They should have had a successful track record of managing projects, and it should be second nature to them. Building upon this elementary foundation, however, is the concept that programs, unlike projects, change often. Consequently, change is an expected and planned part of the program manager's daily routine. This change, occurring naturally, is difficult for senior management to grasp and understand. Most companies want certainty and consistency; they do not have the processes, and often the patience, in place to deal with change that should be an expected part of the execution of complex mega-projects and programs. Consequently, communication is a crucial part of program management.

And, while both project and program management require excellent communications and leadership skills, the program manager's skills in these areas usually function within some form of political arena. The most common political venues are at an organization's senior management or Board of Directors (e.g. for resources) and at the city, state, and federal government levels for permits, funding, zoning, exemptions, etc.

Although both management disciplines require technical expertise, the program manager has to excel at being a high-level strategic thinker, akin to a good chess player, knowing the exact role of each of the pieces in the game and how to play the game without all the pieces. Similarly, program managers are always looking at the strategy from the "forty-thousand foot view," rarely, if ever, getting too deep in the weeds. Moreover, a program manager must remain benefits focused. If the program manager gets too

deep in the weeds and loses the focus on benefits, no one is left watching the high-level view necessary to manage the program and for which only the program manager is accountable.

DO NOT ACCIDENTALLY IMMEDIATELY JUMP INTO PLANNING OR EXECUTING!

Deadlines for the project, the demand of the sales and business teams, the past experiences you have as a project or program manager all contribute to one key fact—it is easy to get trapped into doing planning and executing tasks before you get through initiation!

The planning process is designed to generate specific deliverables. The Program Management Plan, including its subsidiary plans, for example, is the primary output of the planning process. *Executing* on the other hand is all about executing this plan. Unfortunately, many effective program and project managers get confused. They think that the program management plan is all about the planning phase. In reality, just because the planning phase solidifies the steps necessary to complete the program management plan, i.e., it must be completed before you can execute your program, a significant amount of the information needed for the plan is gathered during the initiating phase.

Before you commence field work, programming, engineering, getting quotes, etc., you will have to decide if your organization has the capacity to manage what you are contemplating pursuing. Do the program's benefits align themselves with the objectives of the organization? Who is going to advise the program when organizational objectives change? Is the program financially smart? Can your organization afford it? Could the failure of the program or any one of its components damage the reputation of the company in any way? And, can the program meet the commercial *requirements*? Although technical questions are important to solidify the scope and help identify possible candidate components, with program initiation it is these strategic questions that must be answered before you start planning and executing.

The correct answers to each of these key questions are critical if companies are going to be successful in initiating and ultimately managing their programs well.

"TO BE OR NOT TO BE, THAT IS THE QUESTION..."

Previously, it was noted that a business mandate was the catalyst that gets the program started. The mandate is a directive that instructs another to take action. In the case of a business, this directive is usually a high-level, simple statement. Consider for a moment the following two examples: "Company XYZ shall be the first company to market to produce a purple widget with new features A, B, and C" or "Within two years, Company ABC shall have the safest transportation system for moving 100 units of product from point A to point B." Each of these may be catalysts for the inception of a program. To make the determination, it is imperative to evaluate the number of components required, the benefits the components will produce, and their alignment with the organization's strategic goals.

Consider the latter business mandate as an example: "Within two years, Company ABC shall have the safest transportation system for moving 100 units of product from point A to point B." This one statement has infinite solutions. Many of the solutions are correct, many are wrong, but only one solution is the best! Initiating a program is about providing this one solution from the infinite possibilities. With programs it is important to remember that the one correct answer may be that the program should not be undertaken. The following are two very elementary examples related to our mandate.

The mandate provided many things that have to be done. The first one is that the primary objective must be accomplished in two years. However assume during initiating, you learn that points A and B each require a special permit to accommodate transportation of your product, and the statutory time frame to get your permits is three years before you are even allowed to commence construction on your method of transportation. Simply, you cannot complete the program no matter how you set it up—it is not feasible. No program solution can achieve the objectives—the commercial requirements, as presented, simply cannot be met! Unfortunately, not all of your decisions are so objective or clear.

Consider this next example. Imagine that Company XYZ specializes in the high-pressure transportation of Nitrogen, an inert gas; i.e., it does not react with anything. It is, therefore, non-flammable and makes up the majority of our atmosphere. Your company has the safest record in the industry. And, despite being non-flammable, your company knows that the

high-pressure transportation of any gas has risks and requires extreme care. But, Nitrogen sales are on the decline, and your company wants to find another use for its system of assets. Therefore, with limited market research Company ABC learns that the Acetylene market is booming. Your company now proposes a new program to transport Acetylene. But transporting Acetylene requires the company to take on the same risks associated with transporting other high-pressure gasses, with one notable exception, Acetylene is a nasty, hot burning, highly explosive gas when present in the right environment.

This decision is not so easy. First, you are engaging in a program that is new—the organization is likely out of its comfort zone. And, if something does go wrong, and there is an explosion, the entire Company's reputation is damaged, and even its primary business could be jeopardized. Notice, we are not saying that we cannot meet the objective, or, for that matter, that something will go wrong. In fact it might not. And, from the technical side, we could even consider letting an expert third party move the Acetylene for us. The issue to recognize is that Company ABC's good name and reputation are at stake. And, the company's risk tolerances must be well understood before taking on such a program.

Programs that potentially jeopardize the reputation of a company are some of the most difficult to manage, particularly if this issue was not identified at the program's inception. For this reason, understanding a program's scope definition, risks, and financial impacts is crucial early in the program.

When these situations do arise, do not be surprised, however, that companies are not pleased when you recommend cancelling a program because the company's risk of a damaged reputation outweighs the potential benefits. Organizational response will vary to this news. In less mature organizations that lack program management skills, a common response of senior management is "Why did we have to spend thousands or even millions of dollars only to learn the program was infeasible?", "Shouldn't we have known the program was infeasible before we spent this much money?", etc.

What senior management often misses is that the information gained from the program initiation effort is the very asset realized from the capital expense. Consequently, this information should be codified as organizational process assets (OPAs) that support the company's lessons learned libraries, technical libraries, and other data bases, for example.

These OPAs help obviate the necessity of repeating this work on future programs, thereby reducing future costs. That is, only if the OPAs are kept and can be easily accessed. And, typically, OPAs are only maintained in more mature organizations that have written processes in place for program management. Too often, companies lacking the processes to deal with the volumes of information often learned during these due diligence exercises simply discard the fruits of their efforts, and, consequently, have nothing to show for the toils of their efforts.

EXECUTIVES ALSO HAVE EXPECTATIONS

Because programs are large, they are often very expensive. Unlike projects, programs usually require a significant financial commitment up front whereas the capital returns usually occur much later. On a mega-project, for example, millions of dollars may be spent investigating the feasibility of the program only to learn that the program is infeasible. Because of this fact alone, a repeatable process to investigate programs should be in place. This process will help manage expectations when you have to tell your executive committee or governance board that you spent an exuberant amount of money only to have to recommend that the program be discontinued.

On another note, however, it is important that you adequately estimate how much your efforts are going to cost your company before you spend the money. Let me repeat that… BEFORE you spend, or commit for that matter, the company's money. Make sure your senior executives know exactly what the program initiation efforts are going to cost, and what is to be delivered at the end of the program initiation effort. Senior executives are generally not program managers. In their mind, they may develop a detailed elaborate vision of what the program is going to deliver. They see it working flawlessly in the time frame they have crafted. They see the resources they need and know how much everything will cost. They see the balance sheets and have already planned on spending and/or utilizing the benefits from your program. In fact, most executives have every detail precisely pictured except for one—actuality. Consequently, managing and engaging your stakeholders early is paramount if you are going to get started out in the right direction.

ESTIMATES AND GUESSES ARE SYNONYMOUS

Once you have estimated what your initiation effort is going to cost your organization, your stakeholders love the deliverables you are going to produce, and the timeframe you are going to produce them within, what are the next steps? First, you will have to focus on estimating the total costs for the program, which includes the initiation effort costs, and how you are going to pay for them.

However, an estimate is a guess, albeit an educated guess, but a guess nonetheless. Unless you have a crystal ball, no one knows what the final cost of a program will be until the end of the program. And while this may seem elementary or obvious, what it means to the program or megaproject may not be well understood within your organization.

During program initiation, the estimate is a range of collective component and program costs bounded by some upper and lower limit. This range is determined by the level of scope definition and the understanding of the risks, known at that time, to the program. The Association for the Advancement of Cost Engineering (AACE) defines different estimate class ranges. These ranges are outside the scope of this chapter, and too often companies use this information incorrectly. They target a particular class that they believe suits their needs rather than letting the definition of the scope dictate the class of the estimate. For example, a company can close a deal with ±10% of costs versus ±50% so they want a Class 3 estimate, in which low is 10% to –20%, and high is +10% to +30% and 10%–40% scope definition (AACE, 2011). The error in this logic is that the Class 3 estimate also requires that the scope definition be 10–40% known, with 40% necessary to achieve the tighter ends of the range. Rarely is 40% of the scope known when initiating a program. This leads to the paradox in most organizations: companies need to know what a program is going to cost to make deals and get financing. How can they do so with a range of numbers?

The correct way for organizations to handle this problem is to place contingency and management reserve on the estimates to address the unknowns. The contingency is based upon a mathematical model, which predicts the probability that a particular risk will occur. Collectively these risks are integrated together to arrive at a range (S-curve) of numbers where the project will turnout. The base estimate has an accuracy defined by the scope definition, and then there is a contingency that is calculated based upon the probability of risk occurrence; e.g., Monte Carlo

simulation. In this manner senior management can now select a number that has a high probability that can be achieved.

Once costs are estimated, the next step is to determine how to pay for your program. Bonds, stock, financing, joint ventures, capital reserve, etc. are all valid methods. The method, however, is not as important as the framework. Once the method is in place solidified by a valid agreement, it is important to determine the terms of your financial framework and how it affects every area of your program. The financial framework could affect your reporting, your cash flow, schedule, governance, software, etc. The most important takeaway is to integrate your financial plans into your overall program charter and preliminary program management plan so you can present your findings to your governance committee or Board of Directors for approval!

SUMMARY

Once your program is ready for approval, what remains is to document the items discussed in your Program Charter:

1. Identify a business need
2. Identify a program and its potential components
3. Identify a Program Manager
4. Evaluate the program's feasibility and organizational capacity
5. Define the scope
6. Identify the benefits
7. Identify the risks
8. Estimate the costs and deliverables to initiate
9. Estimate the overall program costs
10. Define the financial framework
11. Codify items 1–9 in the Program Charter

Remember, managing a program is an art, but building the program and gathering the information to frame it correctly is a science. And, the foundation you have prepared during program initiation will lay the ground work and set the direction for the future planning, executing, and ultimately future success of your program. Consequently, program initiation is the most important part of the program life cycle!

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6

Benefits Management

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INTRODUCTION

Programs are considered to be finished after all deliverables are completed and formally accepted, and all formal closure procedures are performed. However, it is becoming clear to many organizations that the quality of the program and its associated project deliverables and the quality of the execution in terms of budget and schedule compliance and customer satisfaction is not by far any guarantee of project success. While project success is measured by "product and project quality, timeliness, budget compliance,

and degree of customer satisfaction" (PMI®, 2008, p. 11), the success of a program is measured by "the degree to which the program satisfies the needs and benefits for which it was undertaken" (PMI®, 2008, p. 11). Many programs and projects lack the clear definition of what exactly is a benefit, how to measure its value and, most importantly, how to assure its sustainment within the performing organization.

The purpose of this chapter is to clarify some aspects of the benefits management, establishing a relationship between the benefits life cycle and the program life cycle.

A benefit is an "outcome of actions and behaviors that provides utility to the organization" (PMI®, 2008, p. 5), and in most cases contributes to at least one organizational goal, which is derived from the strategic map. The organizational strategy is a result of the strategic planning cycle and should be a reflection of the company's vision, mission, and cultural aspects that are translated into a strategic plan or strategic map. The strategic plan should then be translated into an enterprise portfolio, which is a set of prioritized programs, projects, and other work, and is the link between the organization's strategy and the company's investments and initiatives. The ultimate goal of linking the portfolio with the organizational strategy is to establish a balanced and executable plan that will allow the organization to achieve its objectives. The management of the expected benefits begins with its proper identification and planning, provides an appropriate set of tools for tracking the realization of the benefits, and also assures that actions are taken in order to guarantee that the resources to sustain the benefits are in place after their realization.

There are many reasons why programs and projects fail, and the causes go beyond the traditional budget, schedule and quality problems. Shenhar & Dvir (2007) stated that even if we adhere to a project plan, we may not achieve the project's long-term business goals. A program—and in fact, any enterprise investment—should be ultimately evaluated by how successfully the intended benefits are delivered and effectively turned into business results. One of the main reasons projects and programs fail is the inability to deliver and/or sustain the expected business benefits that justify the investment of company resources in the program. Although the project management maturity level in organizations has showed a significant improvement in the last decade, recent research shows that only 15% of senior-level project and program managers keep track of programs and projects benefits realization (ESI International, 2011).

BENEFITS CATEGORIES

In order to facilitate and support its identification and further analysis, benefits can be classified into key categories. Some benefits are easily determined and quantified, for example, increases in revenues or cost reductions. There are some benefits, though, that are more difficult to define because their contribution to business results are not direct and easily measured. Williams & Parr (2004) defined three main categories of benefits:

- Direct or Tangible Benefits
  - *Financial Benefits*: Benefits that can be measured into currency quantities, such as increases in revenue and cost reductions.
  - *Non-financial Benefits*: Benefits that are measurable, but not in currency or financial terms, such as client retention and lower staff turnover.
- Indirect or Intangible Benefits
  - Benefits that are not easily quantified and measured, such as customer satisfaction, corporate image, and access to new markets.

BENEFITS MANAGEMENT LIFE CYCLE

In order to provide a predictable and coordinated manner to manage the expected program benefits and to assure compliance with governance standards, it is useful to establish a set of "processes and measures for tracking and assessing benefits throughout the program life cycle" (PMI®, 2008, p. 20). The delivery of benefits that in some level provide new capabilities or that improve existing ones is one of the main critical success factors of an investment, whether it is carried out as a project or as a program.

The identification, qualification and further quantitative analysis of the desired business benefits—aligned to the business strategy—should precede and direct the decisions to proceed with the program efforts along the program life cycle and also establish the baseline for measuring the program progress and success.

There are four phases for the benefits management life cycle, running in parallel with the program life cycle. It is important to emphasize that

at the very beginning of the benefits management life cycle there should be a link to the company's strategy plan in a way that it provides a clear identification of the desired business benefits and in order to allow the prioritization of the program initiative within the context of the enterprise portfolio. Determining how the proposed benefits are aligned to the business strategy and also how relevant those benefits are in the enterprise environment is an important tool to clarify the justification for investing in the program.

The benefits management life cycle proposed by the Project Management Institute (PMI®) flows in a manner that the level of information and maturity regarding the benefits management process increases along with the development of the program life cycle, from the very early defining and planning stages throughout the benefits realization, transition to operations and final program closure. The next sections will provide some clarification on the four stages of the benefits management life cycle.

Benefits Identification

At the early stages of the program life cycle, most of the efforts are directed to the identification and qualification of the expected business benefits. The program business case or the program mandate should clarify the external and internal forces that drive the organization to the need for a change, which may lead to a program being created. During the identification of the expected benefits, it is important to establish a "clear definition and agreement among stakeholders on the factors contributing to these identified benefits" (PMI®, 2008, p. 20). Some factors are critical for appropriate benefits identification at this stage of the benefits management life cycle:

- Understanding the business strategy
- Mapping each of the expected benefits into the strategic plan and goals
- Quantifying the benefits (estimates)
- Determining the *core* expected benefits
- Comparing the current state to the expected post-program scenario
- Comparing the current state to the projected scenario in case the program is not implemented, if appropriate
- Determining the premises for estimating the benefits

Strategic Map					Program			
Customer Outcome	**Strategic Objective**	**Key Performance Indicator**	**Current Value**	**Goal for KPI**	**Estimate Program Contribution**	**Cumulative Reductions/Year**		
						Year 1	**Year 2**	**Year 3**
To be perceived as a more eco-friendly company	Reduce the CO2 activity emissions	Total CO2 emissions/ year	1.5 ton/ year	0.8 ton/ year	Reduction of 0.5 ton/year	0.1 ton	0.3 ton	0.5 ton

FIGURE 6.1
Example of benefits identification and mapping.

The benefits identification phase should strongly take into account the organization's strategic plan in order to establish a clear alignment with the company's long-term objectives. Ideally, each of the expected benefits should be mapped into the company's strategic plan. At this stage, there is probably not much data supporting the quantitative analysis for the benefits, so it is most likely that order-of-magnitude estimates are being used. Figure 6.1 presents an example of a benefit identification and strategic mapping for a CO2 emissions reduction program.

Figure 6.2 below is a graphical representation of the comparison between the program's contribution to the corporate Key Performance Indicators (KPI) and a projection of the expected scenario if the program is not undertaken.

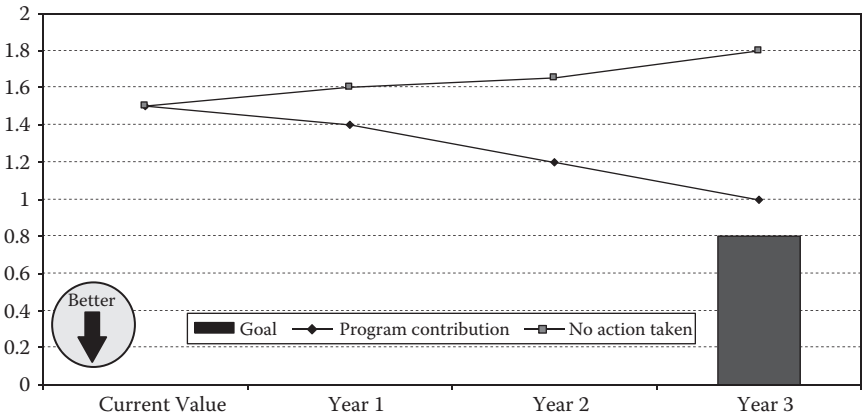


FIGURE 6.2
Example of benefits identification.

It is important to emphasize the link between the benefits and the business strategy is dynamic and is affected by changes to either or both. Any changes in the company's strategy should serve as a trigger to review the program goals and expected benefits and that could potentially cause its early termination. On the other hand, changes to the program that affect its capacity to deliver the planned benefits within schedule, budget and capacity should be monitored and escalated to the appropriate governance structure in order to assure the necessary alignment to the business strategy.

Benefits Analysis and Planning

After the expected program benefits are identified and agreed upon, the ground work for defining the tactical means by which the benefits are to be achieved takes place. The analysis of the program's expected benefits should result in a supportive basis for planning the benefits realization, providing information that will support further planning decisions. The benefits planning process is iterative and should be revisited at pre-defined check points, such as program phase-gate reviews; at points where there are scope changes; or when risks occur. Some relevant information to take into account during the benefits planning process includes:

- The prioritization of the expected program benefits and the estimated contribution from each component in achieving the program benefits. This information will support the planning decisions regarding the priorization of the program components and the definition of the program scope
- The benefits metrics and quantitative analysis that will support the monitoring of the benefits realization
- The benefits measurement and completion criteria
- The roadmap for delivering the expected benefits

There are four main activities for the benefits analysis and planning phase (PMI®, 2008):

- *Derive and prioritize the program's components*—to identify each component's contribution to the expected program benefits and prioritize them accordingly
- *Derive benefits metrics*—in order to allow its further measurements during the program's execution and after its transition to ongoing operations

- *Establish a benefits realization plan and methods to monitor it*—to support program execution and the benefits realization tracking and reporting with an emphasis on resources needed, benefits interdependencies, realization premises, and constraints
- *Map benefits into the program plan*—to establish a correlation between the program's expected benefits and those of its constituent components.

Prioritizing Program Components

In order to derive and prioritize the program components, it is necessary to determine the contribution from each component to the overall expected program benefits. A *Component* × *Benefits* correlation matrix is proposed below in Figure 6.3.

Once the contributions from each component are determined, it is possible to prioritize the components using a weighted decision matrix. Each benefit is associated with a weight, according to the program benefits prioritization criteria determined previously and agreed upon with the program sponsor and the main program stakeholders. For each individual component, it is possible then to calculate the overall contribution to the program objectives as follows:

$$Score \rightarrow \sum_{i=1}^{\#benefits} Contribution_i * Weight_i$$

For the example illustrated on Figure 6.3, the weights for each proposed program benefit were determined as follows as shown in Figure 6.4.

	Expected Program Benefits		
Component	**Reduction of CO2 Emissions**	**Cost Reduction**	**Operational Safety Improvement**
Project A	0.5 MM ton/year	USD 1.5 MM/year	15%
Project B	2.5 MM ton/year	USD 0.4 MM/year	25%
Project C	1.5 MM ton/year	USD 3.5 MM/year	0%
Project D	1.5 MM ton/year	0	5%
Program	**6 MM ton/year**	**USD 5.4 MM/year**	**45%**

FIGURE 6.3
Component × benefit analysis.

Benefit	Weight
Reduction of CO2 emissions	5
Cost reduction	3
Operational safety improvement	1

FIGURE 6.4
Example of weighted benefit matrix.

Taking, for example, the contributions from Project "A" to each benefit represented in Figure 6.4, and applying the formulae to the weights determined in Figure 6.5, we have the following results:

Applying the same calculations to projects B, C and D on Figure 6.5, the result is a program weighted Component × Benefit Matrix, represented in Figure 6.6.

In the example above, based on the results of the weighted component × benefit matrix, the prioritization of the program components should be (1) Project B, (2) Project A, (3) Project C, and (4) Project D. The component prioritization analysis will guide future decisions during the program

Benefit	Benefit Weight	Project Contribution	Weight
Reduction of CO2 emissions	5	0.5	2.5
Cost reduction	3	1.5	4.5
Operational safety improvement	1	15	15
Total Project Score			**22**

FIGURE 6.5
Calculation of project score.

	Program Benefits			
	Reduction of CO2 Emissions	Cost Reduction	Operaitonal Safety Improvement	Component Score
Weight	**5**	**3**	**1**	
Project A	2.5	4.5	15	**22**
Project B	12.5	1.2	25	**38.7**
Project C	7.5	10.5	0	**18**
Project D	7.5	0	5	**12.5**

FIGURE 6.6
Weighted component × benefit analysis.

execution and is especially important when it comes to decisions regarding the allocation of shared or conflicting resources.

Note that the program components are prioritized according to their individual contributions to the overall program benefits. Other factors, however, should be taken into account when sequencing the components for program execution, such as resource availability, funding constraints, regulatory demands and components interdependencies, which are not considered in this example.

Developing a Benefits Realization Roadmap

In order to provide a baseline for monitoring program execution and to serve as a monitoring parameter, a roadmap for the benefits realization is required. Once the program components are prioritized, and a high-level program schedule is developed, it is possible to establish a time frame in which the benefits are going to be delivered and realized.

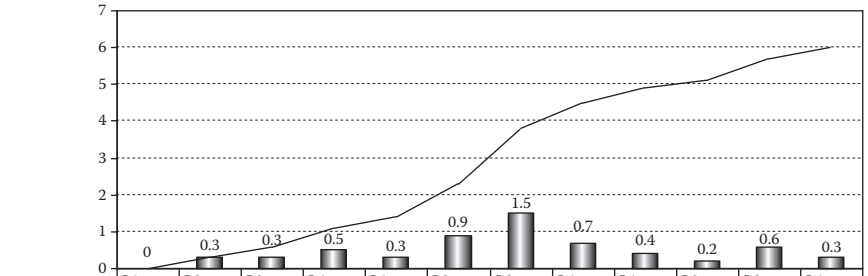
Based on each individual component contribution for the benefit "Reduction of CO2 Emissions," from the example of the Component × Benefit matrix represented in Figure 6.6, a time frame for the realization of the overall program benefits can be developed as follows and shown in Figure 6.7.

Figure 6.8 shows the graphic representation of the quarterly and cumulative benefits realization roadmap, based on the distribution represented in Figure 6.8.

A benefits realization roadmap as illustrated above is an important tool to keep track of the benefits delivery, and it also serves as an effective communication tool in order to clearly set the stakeholder's expectations for

	Year 1				Year 2				Year 3				Total Component Contribution
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	
Project A			0.3			0.1		0.1					0.5
Project B				0.5			1.5			0.2		0.3	2.5
Project C					0.3			0.6			0.6		1.5
Project D		0.3				0.8			0.4				1.5
Total	0	0.3	0.3	0.5	0.3	0.9	1.5	0.7	0.4	0.2	0.6	0.3	
Cumulative	0	0.3	0.6	1.1	1.4	2.3	3.8	4.5	4.9	5.1	5.7	6	

FIGURE 6.7
Program benefits roadmap.



	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Quarterly	0	0.3	0.3	0.5	0.3	0.9	1.5	0.7	0.4	0.2	0.6	0.3
Cumulative	0	0.3	0.6	1.1	1.4	2.3	3.8	4.5	4.9	5.1	5.7	6

FIGURE 6.8
An example of a graphic representation for the benefits roadmap.

both the program and individual components. Program managers should assure agreement on the benefits roadmap with the program sponsor, customer, and other relevant stakeholders as appropriate. The roadmap should be part of the program and individual component's business cases, and project managers should have it as an input for setting up their project plans. Once agreed upon, the roadmap serves as a baseline for tracking and reporting the benefits realized during the program execution and should be used later during the life cycle to compare the actual performance to the plan.

Performing Benefits and Risk Analysis

Another important factor to be taken into consideration during the benefits analysis and planning phase is the benefits versus risk analysis, which is performed in order to assess the risks affecting the delivery of the program's benefits. One approach that is often overlooked is to establish a correlation between the program risks and the program benefits, in addition to mapping the risks to the program components (PMI®, 2008). A correlation matrix that allows mapping and assessing the impact of identified program risks into each expected benefit is proposed in Figure 6.9 as follows:

The Benefit × Risk correlation matrix can help the elaboration and prioritization of the program risk response plans because it assesses the impact of each identified risk to the realization of the expected program benefits. This assessment, combined with the program benefits prioritization

	Expected Program Benefits		
Program Risks	**Reduction of CO2 Emissions**	**Cost Reduction**	**Operational Safety Improvement**
Risk 1	High	—	—
Risk 2	Medium	High	—
Risk 3	—	Low	High
Risk 4	Low	High	—

FIGURE 6.9
Benefit × risk correlation matrix.

criteria, is a powerful tool to guide the allocation of contingency reserves to program components.

Performing Benefits/Cost Analysis

Whether a benefit is measurable in monetary terms or not, an assessment of the benefits versus the cost of each of the program's components is useful in order to help the program manager prioritize the components in the program and also in order to establish a parameter for performance measurements in the later program life cycle phases.

The most easy and traditional way to measure the benefit versus cost ratio is to simply divide the component cost (or the overall program cost) by the expected benefit, as illustrated below in Figure 6.10.

In the example, what is being calculated is the ratio between each component cost and its contribution to the overall program benefit. Note that, for example, the component "Project B" has a benefit/cost ratio—also

	Expected Program Benefits		
Component	**Component Cost**	**Reduction of CO2 Emissions**	**Cost/Benefit Ratio**
Project A	USD 2.0 MM	0.5 MM ton/year	USD 4.0 mm/(ton/year)
Project B	USD 8.0 MM	2.5 MM ton/year	USD 3.2 mm/(ton/year)
Project C	USD 6.0 MM	1.5 MM ton/year	USD 4.0 mm/(ton/year)
Project D	USD 9.0 MM	1.5 MM ton/year	USD 6.0 mm/(ton/year)
Program	**USD 25.0 MM**	**6.0 MM ton/year**	**USD 4.2 MM/(ton/year)**

FIGURE 6.10
Benefit/cost ratio calculation example.

called *specific cost*—of USD 3.2 MM/(ton/year), which means that, for "Project B," the reduction of one ton of CO2 per year costs USD 3.2 MM. The same criteria may be applied to any quantifiable benefit.

The benefit/cost ratio should also be considered when determining the cost variance tolerances for the program and its components. For example, consider the component "Project D" in the example above. The component has a calculated benefit/cost ratio of USD 6.0 MM/(ton/year), which is the worst ratio of the project in comparison with the other three components, being 50% higher than the second worst ratio. Although a cost variance of, for example, plus 10% might be acceptable for the program as a whole, when the individual component's benefit/cost ratio is taken into consideration, program governance might consider it to not to be an important variable. This information, however, may be used to select program component candidates as well as to decide whether to approve component initiation or to terminate an existing component.

Benefits Realization Monitoring Plan

In order to establish a framework for agreement on the benefits realization measurement criteria, the program manager should establish a plan for benefits measurement after the program implementation. The plan should refer to any pre-existing KPIs for future reference, if one already exists, and clearly determine who is responsible for the benefits measurements and communication. Some benefits might be difficult and expensive to measure, so any resources needed to conduct the benefits measurements should be determined, such as human resources, new equipment, or facilities. The plan should be formally registered as a deliverable at the program level and communicated and agreed upon by the main stakeholders.

For each benefit, the plan should determine the criteria and requirements for measuring the benefits realized and should contain information such as the following:

- Benefit identification
- Measurement units: In order to allow a clear understanding of the measurements and to allow the further comparisons to the current KPI values, such as monetary units, meters, tons, etc. The measurement unit for the benefit should be the same as the KPI to which it will be compared.

- Date (or event) to start the benefit measurements: It is important to determine when the measurements are going to start, whether at a pre-determined date, or after a specific program event, such as a new equipment ramp-up period or a regulatory demand.
- Frequency of measurements (monthly, quarterly, etc.)
- Measurement criteria and methods
- Resources needed for measurements: Any resources needed in order to perform the measurements should be estimated and planned. Some benefits might demand extra resources to be tracked and measured, and it may be necessary to acquire measurement equipment and facilities or contract for specialized services in order to measure the benefits.
- KPI previous value (if one exists): Any KPI affected by the program implementation and related to the benefit being measured should be tracked before the program implementation for future comparisons.
- Expected KPI value: The new value expected for the KPI after the delivery of the benefit.
- Communication methods: How the benefits measurements are going to be communicated to the stakeholders—a monthly report, a meeting, etc.
- Measurement responsibility

Benefits Realization

In addition to monitoring the performance of the program and its constituent components in terms of budget, schedule and quality, an effective governance structure should be in place to assure periodic monitoring of the expected benefits delivery. In some cases, benefits will be delivered incrementally during the program execution, while others will be delivered only after full implementation of the program's scope. In both cases, a set of procedures and methods for monitoring and reporting benefits should be in place. Also, the program's business case should be revisited at the periodic performance reviews. Using the business case as a constant reference during the benefits monitoring activities allows the program manager to periodically check the program alignment with the original expected benefits.

Depending on the nature of the program, the delivery of its intended benefits could fall into one of the following categories (Williams & Parr, 2004):

- Sudden—Program benefits are delivered at once or after a short ramp up or stabilization period.
- Incremental—Program benefits start to be delivered before program conclusion, and each program component's contribution adds to the overall program benefits being delivered.
- Transient—Benefits have a time frame during which they can be realized. After a certain time period, the benefits realization starts to fade or is minimized. This could be related to a commercial window of opportunity, a regulatory demand, or a technology issue.

There are three main activities for the Benefits Realization phase of the benefits management life cycle (PMI®, 2008):

Monitoring Components

Monitoring the execution of the program components provides program managers with the necessary information to forecast the future realization of the expected program benefits. Special attention should be devoted to program changes that could affect the benefits realization or viability. Also, deviations on components schedules or budgets might cause delays in realizing benefits, which might even cause the program to be canceled.

Figure 6.11 illustrates a deviation in a benefit realization forecast because of delays in a component schedule:

Figure 6.12 illustrates a deviation in a benefit realization forecast because of a component scope or capability reduction:

As an example, Figure 6.13 illustrates a program's benefit realization forecast against the benefits realization plan baseline. The updated forecast for the contribution from each program component is compared against the expected contribution stated on the program and project business cases. Negative deviations on the program benefits forecasts should serve as a trigger to perform a root cause analysis and subsequent corrective actions in order to bring the benefits realization back to the original roadmap. These corrective actions should be implemented by the components' project managers and followed up by the program management team and the program manager.

Maintaining a Benefits Register

Data collection regarding benefits realization should be performed periodically, in order to provide the program sponsor and stakeholders with

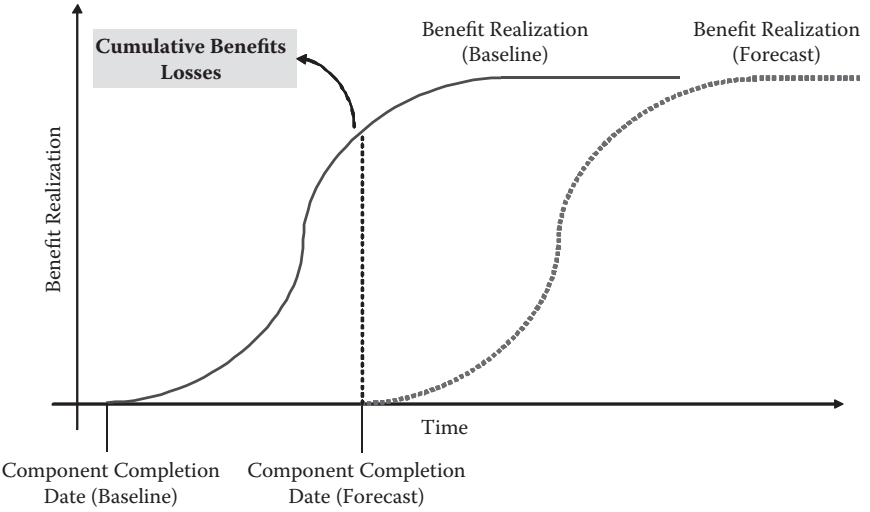


FIGURE 6.11
Benefit forecast deviation because of a component schedule delay.

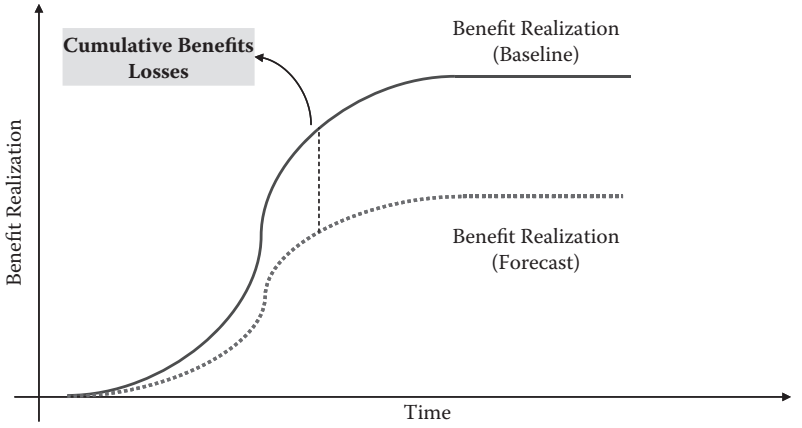


FIGURE 6.12
Benefit deviation because of a component scope or capability reduction.

the actual benefits realized versus the planned benefits. For those programs whose benefits are delivered before the formal program work is completed, the measurements for benefit realization should be performed in conjunction with the program periodic health checks and program performance measurements. The early program benefits realization measurement will support future governance decisions regarding the program's viability. There are even cases in which the program depends on those early

	Expected Program Benefits				
Component	**Planned**	**Forecast**	**Deviation**	**Cause Analysis**	**Corrective Actions**
Project A	0.3 MM ton	0.5 MM ton	0.2 MM ton		
Project B	1.5 MM ton	0.0 MM ton	(1.5 MM ton)		
Project C	0.5 MM ton	0.4 MM ton	(0.1 MM ton)		
Project D	1.0 MM ton	1.5 MM ton	0.5 MM ton		
Program	3.3 MM ton	2.4 MM ton	(0.9 MM ton)		

FIGURE 6.13
Forecasting program benefits.

expected benefits to help fund other program components or to adjust the program's scope and budget according to the actual realized benefits.

Keeping track of the actual program benefits achieved should take place during program execution and/or after program completion, depending on the nature of the program. Program managers should maintain a register of program benefits actually delivered by the program in order to evaluate the benefit's delivery performance against the benefits realization plan (PMI®, 2008). In that sense, a standardized set of benefits metrics should be established earlier in the benefits management life cycle in order to prepare a coherent and cohesive program benefits register. In order to allow future comparisons and analysis between planned and actual benefits, the metrics for measuring and registering realized benefits should be the same metrics used to set the benefits baseline and also the same as those used to define the goals for corporate KPIs. This approach will allow the program team to communicate the program results in terms of their contribution to the overall organization's goals.

Figure 6.14 illustrates an example of a register from a program component's benefit measurement. Note that the measurements are periodical, and for each measurement, there is a comparison with the planned benefit value expected for that particular period and an analysis of the deviations, with their respective cause analysis and corrective actions.

The benefit deviation analysis could be complemented with an assessment of the cumulative values expected to date and a comparison with the global expected KPI related to the benefit, as illustrated bellow in Figure 6.15:

Program Name:
Component: Component A
Benefit: Reduction of CO_2 emissions

Date of Measurement	Planned	Actual	Deviation	Cause Analysis	Corrective Actions

FIGURE 6.14
Component benefit register.

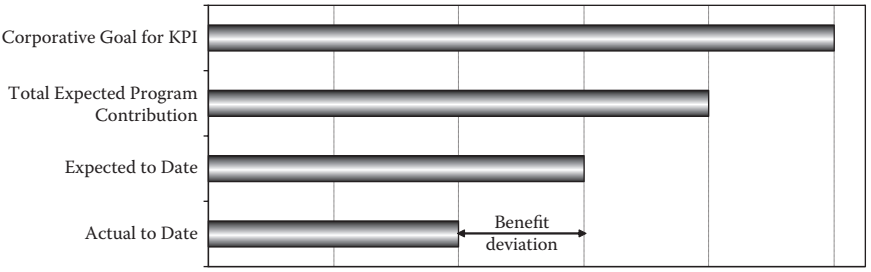


FIGURE 6.15
Benefit measurement assessment example.

Program managers also should, within the context of the program governance structure, assess the benefits realized in relation to the overall program performance. The aspects involved in the benefits realization assessment should include, but not be limited to (PMI®, 2008):

- Program resources spent to date as compared to the actual benefits achieved
- Updates on the resources needed in order to deliver the remaining expected benefits
- Governance decisions that impact the benefits realization, whether negative or positive
- Strategic alignment of the expected benefits to the organization's goals and objectives
- Updates on the status of any risks associated with realizing the benefits
- The overall program and its constituent components performance, in terms of budget, schedule, quality, and resource allocation

When assessing the benefits realization performance, one piece of information that is often overlooked is the actual benefit versus cost ratio for the program benefits. The traditional approach is to monitor the cost performance for the program components and its deliverables, so there is a budget control that operates within a pre-determined and approved tolerance range. But, what if there is a cost variance that falls within the tolerance range but affects the benefit versus cost ratio in such a way that makes the program or one of its components no longer viable? Or what if there is not a cost overrun, but the actual benefits delivered by the program is below the expected benefits, affecting in the same fashion the benefit versus cost ratio?

In order to allow a more effective and benefit-driven approach to program cost control, the assessment of the actual benefit versus cost ratio for each of the program benefits and components should be performed during the delivery of the program benefits phase. Governance decisions regarding component initiation approvals, program scope changes, and program go/no-go decisions should consider the benefit versus cost analysis.

For the example illustrated on Figure 6.16, although there are some significant cost variances for each component, the actual benefits achieved by the components either kept the benefit versus cost ratio within the planned ranges or made an improvement on the component's ratio—except for the component "Project C". When the overall program ratio is calculated, the benefit versus cost ratio in terms of USD MM per ton/year is better than originally planned.

	Expected Program Benefits				
Component	**Planned Cost/ Benefit Ratio**	**Component Actual Cost**	**Actual Reduction of CO2 Emissions**	**Actual Cost/Benefit Ratio**	
Project A	USD 4.0 MM/ (ton/year)	USD 2.5 MM	0.5 MM ton/year	USD 5.0 mm/ (ton/year)	Worse
Project B	USD 3.2 MM/ (ton/year)	USD 7.0 MM	3.5 MM ton/year	USD 2.0 mm/ (ton/year)	Better
Project C	USD 4.0 MM/ (ton/year)	USD 8.0 MM	1.3 MM ton/year	USD 6.2 mm/ (ton/year)	Worse
Project D	USD 6.0 MM/ (ton/year)	USD 11.0 MM	1.8 MM ton/year	USD 6.0 mm/ (ton/year)	Same
Program	**USD 5.4 MM/ (ton/year)**	**USD 28.5 MM**	**7.1 MM ton/year**	**USD 4.0 MM/ (ton/year)**	Better

FIGURE 6.16
Actual benefit versus cost assessment example.

Benefits Reporting

Program benefits may be realized before the program work is completed (PMI®, 2008). In order to keep the sponsor and stakeholders' expectations about the program benefits within a realistic range, program managers should periodically assess and report the actual realized program benefits. Among other factors, benefits reporting should take into account the following:

- Program Business Case
- Benefits Realization Plan
- Benefits Roadmap
- Actual Benefits to Date
- Program Stakeholder Analysis
- Program Communications Management Plan
- Communications Strategy
- Program Communications Log
- Program Master Schedule

Benefits Transition

The final step in the life cycle is to formally transition the benefits to the program's customers, end users, or a product or support group within the organization. At this time, the program has closed, and its benefits have been realized successfully according to its stakeholders, the governance board, and the program sponsor. The program's transition plan has been executed, and stakeholders who now are responsible for sustaining the benefits have been active participants in the transition process.

SUMMARY

This chapter has described a key aspect of program management, if not the most important part of program management—benefit realization. It has presented through the use of examples the components of the program life cycle so the program manager has guidelines to follow as he or she plans, executes, monitors, and closes his or her program to ensure the program's stated benefits are realized and hopefully exceeded.

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7

The Earned Benefit Method for Controlling Program Performance[*]

Crispin ("Kik") Piney, BSc, PgMP, PMP

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[*] Please note that the chapter is based on the companion paper to the presentation delivered at the PMI® EMEA Congress in Dublin (May 2011) that has been updated accordingly and is reprinted with permission from PMI®.

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INTRODUCTION

PMI®'s *Standard for Program Management* (Project Management Institute 2008a) refers to benefits management and provides a diagram of the benefits management life cycle. However it does not provide a coherent view of how to apply benefits management in an integrated way across the life cycle for managing programs. This chapter addresses this lack. It describes how the life cycles should correspond to each other and proposes a new technique—Earned Benefit Management—for planning and tracking the realization of program benefits. All quotations are from PMI's® *Standard for Program Management*—Second Edition (2008a).

In the same way as for Earned Value (Fleming and Koppelman, 2000) there is the need for an organizational approach to make the Earned Benefit technique effective (PMGS, 2011). This is addressed in the first part of the chapter (*Current Life Cycles* and *Modified Benefits Realization Life Cycle*). The second part explains the Earned Benefit technique in detail (*Toward the Earned Benefit Method* to *Conclusion*), followed by a worked example (*Appendix: Example of Earned Benefit Calculations*).

The starting point, therefore, is an overview of the program management phases as defined in the *Standard for Program Management*—Second Edition.

CURRENT LIFE CYCLES

The Program Management Phases

Figure 7.1 is adapted from the *Standard for Program Management*, Second Edition:

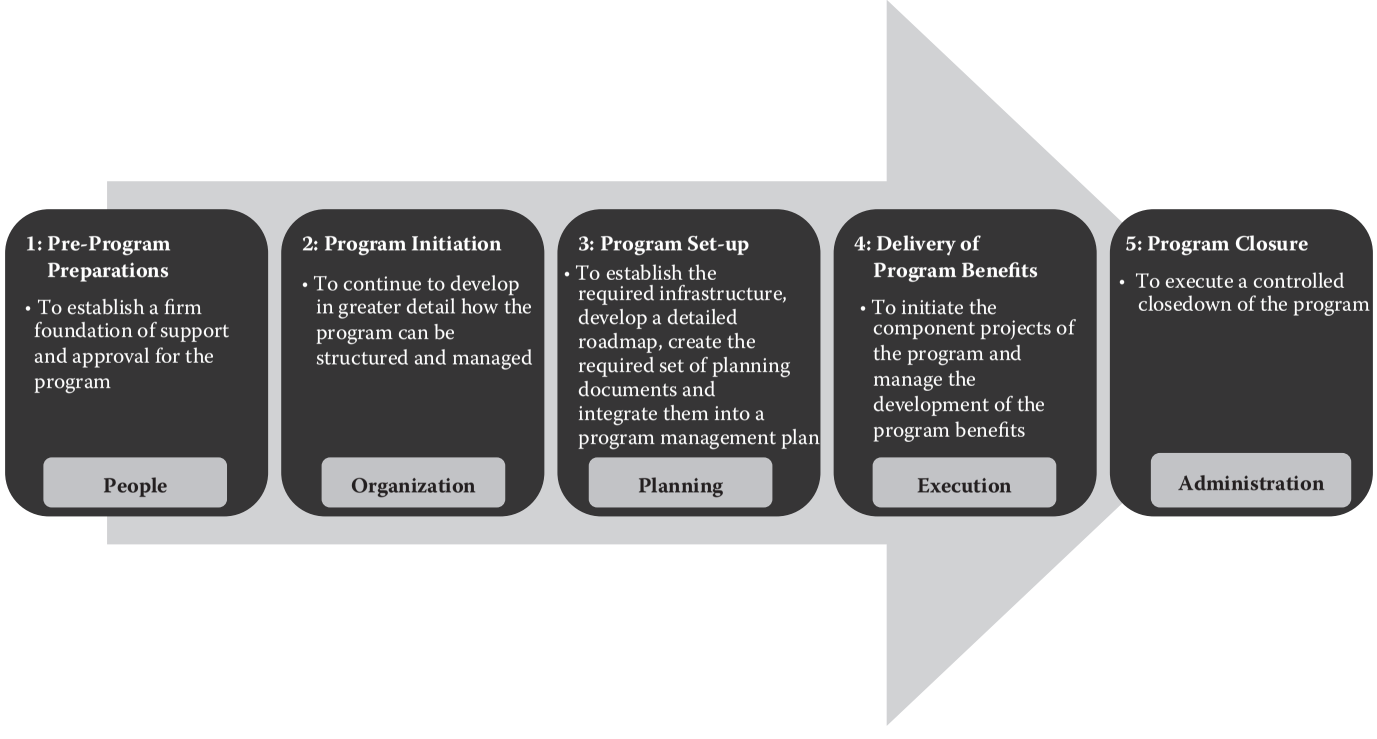


FIGURE 7.1
Program management life cycle.

- Pre-Program Preparations: The goal of this phase is to establish a firm foundation of support and approval for the program.
- Program Initiation: "To develop in greater detail how the program can be structured and managed …".
- Program Setup: To establish the required infrastructure, develop a detailed roadmap, create the required set of planning documents and integrate them into a program management plan.
- Delivery of Program Benefits: "To initiate the component projects of the program and manage the development of the program benefits …"
- Program Closure: "To execute a controlled closedown of the program."

The Second Edition does not have a phase-end checkpoint to the program closure phase!! It should be: "Approval by the Program Board based on input from the sponsor and client". Without a gate, there is no effective control on the quality of a phase, so the loss of this gate appears to encourage an incomplete and unprofessional closure to programs—a situation that occurs all too often in practice, without the need to make it still easier.

Just as for the project management life cycle, the program management life cycle is designed to provide control over the work and the use of resources to accomplish it. It is not directly concerned with the technical aspects of the work to create the deliverables associated with the product scope. For programs, however, there is a layer that fits between the program scope and the product scope, since programs use the products to deliver benefits: this therefore requires is own, *benefits management* life cycle as described in the next section.

THE BENEFITS MANAGEMENT LIFE CYCLE

As can be seen in Figure 7.2, adapted from the PMI® *Standard for Program Management*—Second Edition, the "benefits management life cycle" as shown only caters for the realization of the benefits and not the long-term operational delivery. The term "benefits *realization* management" would be a better description of this life cycle.

The PMI® Standard does not provide a definite indication of the relationship between the two life cycles—and the benefits management life cycle was modified between the first and second editions of the Standard. The following analysis addresses this problem, by taking the tasks within

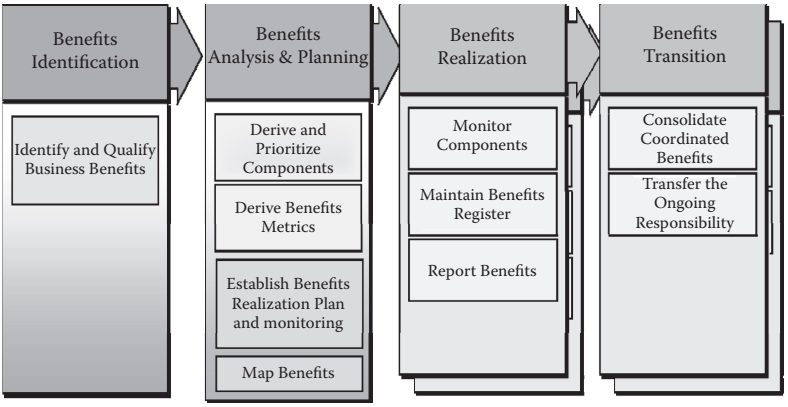


FIGURE 7.2
The PMI® standard benefits management life cycle.

the phases above and reallocating them into a modified benefits realization life cycle aligned with the program management phases.

MODIFIED BENEFITS REALIZATION LIFE CYCLE

Defining the Modified Life Cycle

Approach and Scope

The approach taken here is the opposite to that taken in the PMI® Standard: we will start with the Benefits Realization Management life cycle: benefits should drive programs not vice versa, since programs are run in order to deliver benefits. This is therefore a bottom-up approach starting with the definition of the sequential benefits realization processes and then grouping them into phases aligned as closely as possible to those defined in the PMI® Standard.

Note also that the goal is not to define the entire life cycle of managing benefits, but only the part that the program is concerned with—i.e., the realization of the benefits: their creation and transition into the operational environment. The longer-term delivery and exploiting of these benefits is the operational responsibility of the organization and is outside the scope of a program. Within the program, it is important to define a clear set of steps for achieving the benefits-related objectives. The key steps are described next.

Benefits Focus Steps

A program has to take into account the following five levels of focus:

1. Strategic focus: Providing ***vision***
2. Business focus: Ensuring ***viability***
3. Benefits focus: Achieving ***value***
4. Program focus: Creating ***benefits***
5. Project focus: Delivering ***capabilities***

A life cycle then needs to be defined to lead the program though these focussing steps, from vision to capabilities. The resulting life cycle is shown in Figure 7.3. The first phase of PMI's® Benefits Management life cycle (Benefits Identification) has been modified to cover identification and assessment; the second phase (Benefits Analysis and Planning) has been split into two parts: Benefits Realization is structured to indicate the potentially staged approach used in many programs; the final stage has been renamed Completion to indicate its goal more clearly. These phases are explained in more detail below.

BENEFITS ASSESSMENT

This is adapted from the PMI® Standard "Benefits Identification" phase. It is launched when a vision has been elaborated.

It is then up to the business change manager to help translate the vision into a set of benefits to be achieved in order to achieve the vision. There are three main steps:

- Develop Mission Statement: The first step, however, which is not mentioned in the PMI® life cycle, is to translate the vision into a more concrete description of the organizational change required in order to achieve the vision. This is the responsibility of the business change manager and will take the form of a mission statement.
- Identify Benefits: The goal of this step is to determine the relevant benefits that contribute to the overall goal, as well as their inter-dependencies and any "dis-benefits" that could occur as side-effects. This step can be developed in the form of a "benefits map": a network diagram showing how outputs, capabilities, outcomes and benefits are interrelated (OGC, 2007).

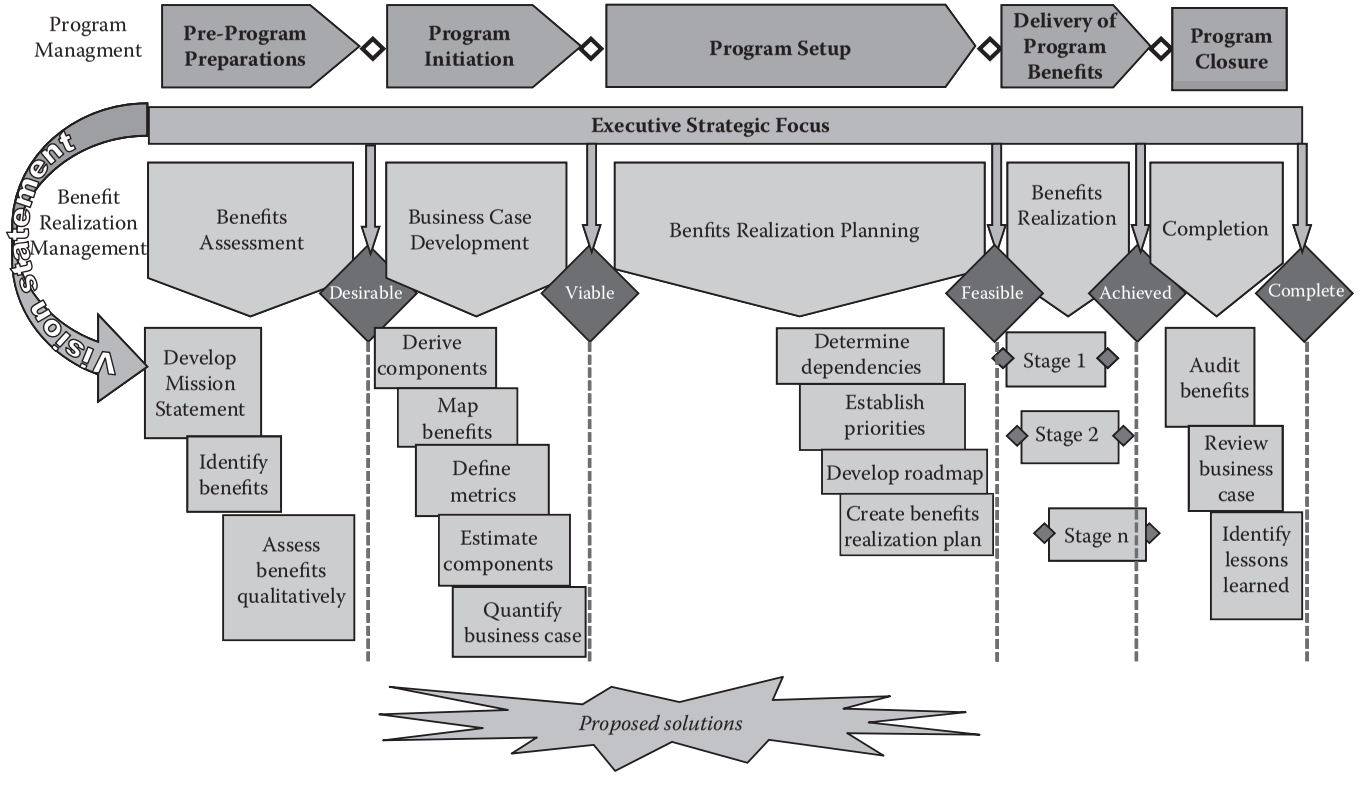


FIGURE 7.3
Aligned program management and benefits realization life cycles.

- Assess Benefits Qualitatively: At this point there is not enough hard data for the viability (i.e. the business case) to be assessed numerically. However a qualitative analysis can be carried out in order to decide whether the idea is sufficiently promising to pursue. This is the draft business case and is used as an input to the Initiate Program process. If it is decided to pursue it further, the qualitative analysis is accepted, and the subsequent phase is launched.

BUSINESS CASE DEVELOPMENT

The goal of this phase is to develop the first part of a business model: a numerical estimate of the benefits.*

This requires the following steps to be carried out:

- Derive components: Decide on the projects and non-project work that is needed in order to achieve the organizational change described in the mission statement
- Map benefits: Provide the interdependency diagram between components and benefits: the component-benefit matrix described later in this chapter
- Define units: Benefits can only be measured if the criteria and the corresponding metrics are defined (e.g. a balanced scorecard).
- Derive metrics: Define completion criteria and the value of completion with respect to the relevant units.
- Estimate component costs
- Quantify the business case: At this point the quantified benefits can be added to the draft business case to provide a financial feasibility analysis. This is the basis for approval of phase completion and the go/no-go decision for the next phase.

Once the business case is accepted, the next step—in fact, the next phase—is to plan in detail how to achieve it.

* Linguistic note: The term *benefit* (in the singular) refers to the total, integrated amount, whereas the term *benefits* (in the plural) corresponds to the individual outcomes. That is why the method, which addresses progress toward the integrated outcome, is called Earned Benefit (in the singular).

BENEFITS REALIZATION PLANNING

The goal of this phase is to produce the benefits realization plan. This is built as follows:

- Determine component interdependencies
- Prioritize components: Based on a chosen set of criteria such as time, value, etc.
- Derive initial roadmap: This roadmap sequences the components and the benefits milestones (Figure 7.9)
- Create benefits realization plan:
  - Link the roadmap to the component duration, cost and value estimates
  - This plan allows the cumulative Benefit curve to be developed (see Figure 7.7): Establish benefits realization monitoring
  - This defines how Earned Value, Earned Benefit and the cumulative Benefit curve are applied for the specific program (see *Toward the Earned Benefit*)
  - This benefits realization plan is the basis for the go/no-go decision to start to create the capabilities and realize the benefits, so it first needs to be approved.

Benefits Realization Plan Review

PMI® does not mention any benefits-specific phase gates. However, once the life cycles have been aligned, the review of the benefits realization plan should form part of the gate review prior to the Program Setup Phase, to ensure an on-going and effective link between the management of the program and the management of the business.

BENEFITS REALIZATION

This phase is composed of one or several, serial, overlapping stages, each of which delivers incremental benefits.

The steps in any stage are as follows, in overlapping cycles. Once these are complete, only the final tidying-up will then remain.

BENEFITS REALIZATION COMPLETION

In theory, once the final stage reaches completion, all of the integration and transitioning actions will have been executed. However, since programs can be large and complex, they need a specific focus to ensure the final result has reached a stable operating state and no longer needs support from the program team.

This phase completes with the official approval for program closure.

Now that a clear and consistent benefits realization life cycle has been developed, it is important to ensure that tools are available in order that it provides the required level of control. The way in which this control is set up and managed across this life cycle will now be described. This is where the Earned Benefit technique is used.

TOWARD THE EARNED BENEFIT METHOD

This section uses the newly-developed life cycle (Figure 7.3) to show how the Earned Benefit concepts are developed, planned for, and applied within programs.

BENEFITS ASSESSMENT

The key output of this phase is a clear definition of each of the benefits required from the program**.** The first step (see Figure 7.4) is to clarify and agree upon the mission.

Define the Mission

Before defining the various benefits, an overall vision of the desired outcome of the program needs to be translated into a mission statement.

The mission statement says what needs to be done (not how to do it) and includes the mechanisms for defining completeness. The mission statement

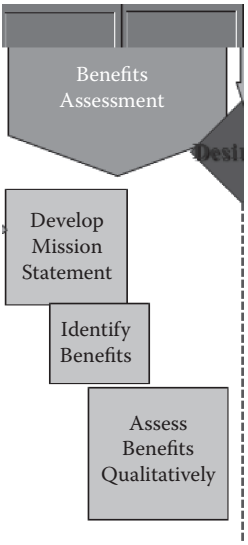


FIGURE 7.4
Benefits assessment steps.

provides a high-level definition of the capabilities that need to be created, as well as the realization strategy to be defined—i.e., what approach should be taken for realizing the benefits (e.g. quick wins, minimal cost exposure, high-risk first, etc.). The corresponding benefits can then be determined.

Identify the Benefits

The benefits description is based on an analysis of what will have changed (for the better) from the current state to the state described in the vision. Once the benefits have been identified, they need to be assessed.

Assess the Benefits

These benefits should be described in purely qualitative terms: the benefits criteria should be defined along with a definition of the meaning of qualitative assessment terms (such as "high," "medium" and "low").

Once the benefits have been identified and assessed in line with the vision and mission, they provide the basic building blocks for the Earned Benefit technique in parallel with developing the business case as explained in the next section.

BUSINESS CASE DEVELOPMENT

Derive Components

Once the set of required capabilities has been defined, these have to be investigated in order to determine the set of projects (and non-project work)—i.e., components—required in order to deliver these capabilities. Prioritization will depend on the contribution of the component to achieving the strategy. This requires the component-benefit matrix to be developed as explained next. See Figure 7.5.

Map Benefits

It is unlikely that each component contributes to a single benefit, so a "*component-benefit matrix*" needs to be developed at the same time.

Each cell of the matrix indicates the relative contribution of a component (row) to a benefit (column); a value of zero indicates that the component does not contribute to that benefit; ideally, the values are then normalized so that each column sums to 1, as shown below (Figure 7.6).

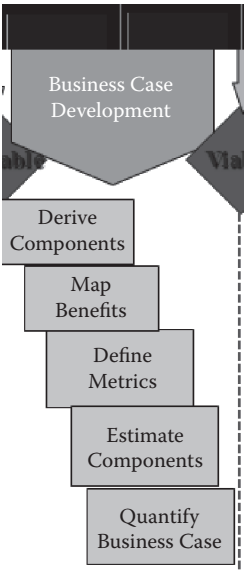


FIGURE 7.5
Derive components steps.

Benefit / Component	B1	B2	B3
C1	1	3	
C2	2		
C3		1	5
C4		4	
C5	1	1	
C6		3	3

Benefit / Component	B1	B2	B3
C1	0.25	0.25	
C2	0.5		
C3		0.083	0.625
C4		0.333	
C5	0.25	0.083	
C6		0.25	0.375

FIGURE 7.6
Unnormalized and normalized examples of a benefit-component matrix.

Define Benefits Metrics—Part 1: Units

In order to allow tracking and consolidation, the qualitative analysis in the previous phase needs to be transformed into a quantitative forecast; this entails defining the units in which the Benefit will be measured as explained in *Business Case Development*.

Define Benefits Metrics—Part 2: Quantities

For each benefit, the following must be defined:

- Benefit *capability completion criteria*: i.e., how to determine if all of the capabilities required to achieve the benefit are in place
- Benefit *value* measured in the predefined units.

Estimate Components

This step implies estimating the cost and duration of each component using standard project management estimation tools (PMI®, 2008b and PMI®, 2010).

Quantify the Business Case

Developing a quantified business case is beyond the scope of this document (but see for example The International Institute of Business Analysis, 2009), but is required in order to obtain approval to start planning on how to achieve it.

BENEFITS REALIZATION PLANNING

Although the overall business case has been developed, we do not yet have a clear idea of how to achieve it. That is carried out in this phase. See Figure 7.7.

Determine Dependencies

The way in which the components work together (e.g. the output of one is the input for another) defines constraints on the order in which the components can be implemented. Given these constraints, the overall plan will need to apply a priority order for the components. There are a number of options as shown as follows.

Establish Priorities

The Benefit-Component matrix (Figure 7.6) is a useful basis for component prioritization: the question to be answered is: how much does each component contribute individually to the total program Benefit?"

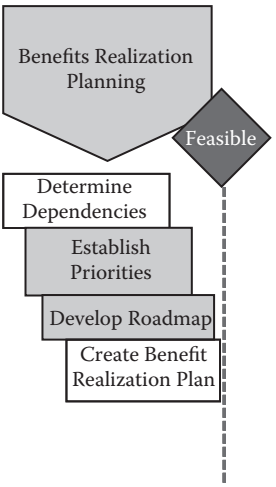


FIGURE 7.7
Benefits realization planning steps.

$$\mathbf{CCB_j = \text{sum over columns } j \text{ of } \{V_{i,j} * \text{value of Benefit}_j\}}$$

Where $V_{i,j}$ is the value in cell (i,j) of the Component-Benefit Matrix)

FIGURE 7.8
The component contribution to benefit formula.

One can calculate the component contribution ("component contribution to benefit" [CCB]) as follows:

The prioritization can then be determined by sorting the components based on their CCB value (Figure 7.8).

The strategy adopted for prioritization must be documented and agreed upon within the program core team. It can be modified during the life of the program based on a similarly formal decision.

Once the priorities have been determined, the benefits realization plan, starting with the Program Roadmap, can be established taking into account all constraints (dependencies, resources, etc.).

Develop the Roadmap

The roadmap provides a high-level view of the order in which the benefits will be realized along with the schedule of executing the program components to deliver of capabilities required for realizing these corresponding benefits (as shown in Figure 7.9).

The planning algorithm is simply:

A: Component sequencing: In priority order, list all components for which all precedence requirements are satisfied.

B: Benefit milestone determination: For each component from step A, determine if it completes the work on a benefit.
If so, define the corresponding "benefit realization stage complete" milestone.
A2, B2… repeat from A until all components have been handled.
The last benefit milestone corresponds to "all benefits realized"; stop.

This approach will provide an initial roadmap for sequencing the work. However, operational and strategic constraints then need to be factored in before a realistic realization plan can be established. Examples of such constraints are:

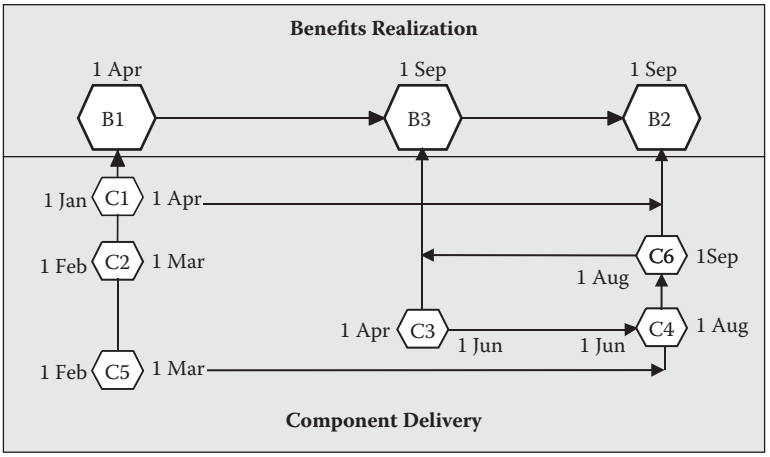


FIGURE 7.9
Program roadmap based on the example in the appendix.

- Operational constraints
  - Resource limitations
  - Budget limitations
- Strategic constraints
  - Maximum number of projects of a given type at any time
  - Cumulative risk exposure.

This roadmap provides a guide to establishing the benefits realization plan, described next.

Create the Benefits Realization Plan

This planning is carried out in close collaboration with the *Program Setup* phase. The planning will subdivide the *Delivery of Program Benefits* phase of the Program Management life cycle into successive stages. Each stage normally corresponds to the delivery of all of the components required for a given benefit. If all of the benefits are only achievable once all of the components are complete, the *Delivery of Program Benefits* phase may be composed of a single stage.

Although the roadmap should not be changed arbitrarily during the realization phase, the detailed plan needs to be reviewed and as necessary updated as the operational and strategic environments evolve—hence the need for effective monitoring as described next.

… and Monitoring

The monitoring technique should be defined: this is where Earned Benefit, as described in the forthcoming section, comes into its own.

It then provides all of the information required for tracking the Realization Phase.

BENEFITS REALIZATION

All of the analysis and planning elements defined in the benefits management phase will contribute to the evaluation of benefits realization progress. That is the domain of the Earned Benefit method described below.

THE EARNED BENEFIT METHOD

The concept of "Earned Benefit" for a program is a natural extension of the project management Earned Value method into program management.

The approach is to recognize that projects aim at deliverables, whereas programs aim at benefits. For a program, therefore, the goal is to translate from progress on delivering the scope of the projects, into progress on realizing the benefits. This is described below and then explained by use of a worked example in the Appendix, which helps to demonstrate how Earned Value on its own can give a misleading view of genuine program progress. The corresponding curves are also shown in that Appendix along with a glossary of Earned Benefit terms and abbreviations, plus the value of all each formula with respect to the example.

BASIC EARNED BENEFIT PARAMETERS

The Component-Benefit Matrix

The CBM was defined in *Map Benefits* and then used in *Establish Priorities*.

In this part, it is shown to be the core of the Earned Benefit method. See Figure 7.10.

Benefit / Component	B1	B2	B3
C1	V11	V12	V13
C2	V21	V22	V23
C3	V31	V32	V33
C4	V41	V42	V43
C5	V51	V52	V53
C6	V61	V62	V63

FIGURE 7.10
Benefit-component matrix for calculating earned benefit.

Calculating Earned Benefit

As we saw in *Establish Priorities*, completed component(i) contributes CCBi to the total benefit, so when partially complete, it contributes a correspondingly reduced amount (the "Component Earned Benefit" [CEBi]). See Figure 7.11.

To calculate the total Earned Benefit, just sum all of the Component Earned Benefit contributions, as in Figure 7.12.

Planned Benefit

The Planned Benefit at any point in time is the forecast value of Earned Benefit up to that point. It can be plotted against time in a Cumulative Benefit curve (Benefit values on the Y-axis, Dates on the X-axis—see *Benefits Realization Planning* and a sample curve in Figure 7.13).

Earned Benefit at Completion

The Earned Benefit at Completion value of a stage is the value of the Planned Benefit at the end of that stage.

$$CEBi = \%complete[component(i)] * \sum_{cols\ j} (Vij * Bj)$$

FIGURE 7.11
The component earned benefit formula.

$$EB = \sum_{rows\ i} \left(\%complete[component\ i] * \sum_{cols\ j} (Vij * Bj) \right)$$

FIGURE 7.12
The total earned benefit formula.

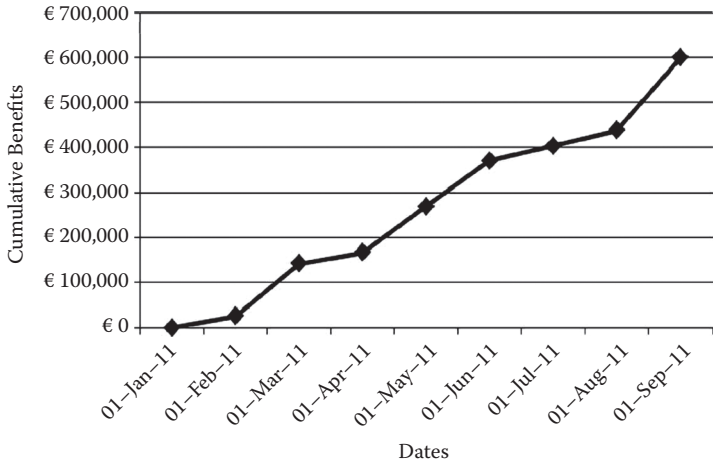


FIGURE 7.13
The planned benefit curve.

EARNED BENEFIT PERFORMANCE CALCULATIONS

It should be noted that Earned Benefit can be measured in any units (financial or non-financial) that best suit the situation, so they may not be the same as those used for Earned Value. This is allowed for in the definitions illustrated in Figures 7.14 through 7.19.

EARNED BENEFIT FINANCIAL CALCULATIONS

The Benefit-Value Curve

In order to track performance with respect to costs, a Benefit-Value curve has to be developed as follows:

- Start with the Cumulative Benefit Curve (see *Benefits Realization Planning*)
- Take the program Cumulative Cost curve (a deliverable of the program planning process—an example is shown as Figure 7.20)
- Replace the dates on the X-axis of the Cumulative Benefit Curve by the corresponding *Planned Value* at that date.

$$PC = \frac{Earned\ Benefit}{Earned\ Benefit\ at\ Completion}$$

FIGURE 7.14
The percent complete formula.

$$BPI = \frac{Earned\ Benefit}{Planned\ Benefit}$$

FIGURE 7.15
The benefit performance index.

$$\text{BV} = (Earned\ Benefit) - (Planned\ Benefit)$$

FIGURE 7.16
The benefit variance formula.

$$EBED = (the\ elapsed\ time\ by\ which\ that\ benefit\ should\ have\ been\ earned)$$

FIGURE 7.17
Earned benefit equivalent duration.

$$BSV = (Earned\ Benefit\ Equivalent\ Duration) - (Actual\ Duration)$$

FIGURE 7.18
The benefit schedule variance (a negative value indicates: behind schedule).

$$BSPI = \frac{Earned\ Benefit\ Equivalent\ Duration}{Actual\ Duration}$$

FIGURE 7.19
The benefit schedule performance index (a value below 1 indicates: behind schedule).

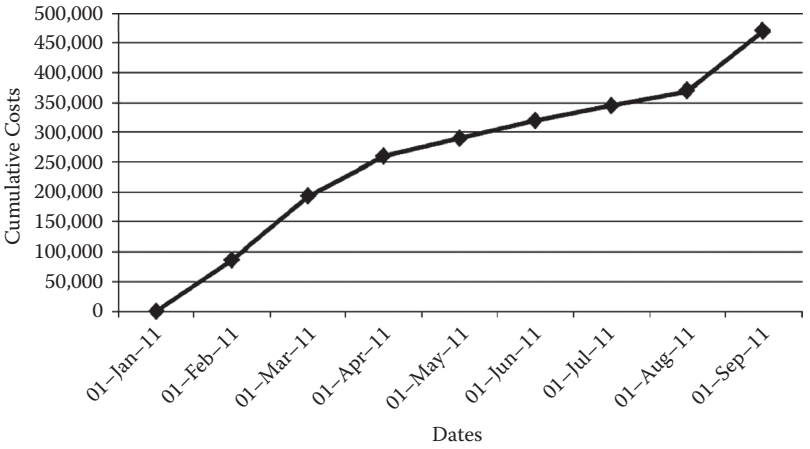


FIGURE 7.20
The planned value (cumulative cost) curve.

An example is provided as Figure 7.21, which shows two curves plotted against the forecast spend:

1. The Planned Benefit curve
2. The Planned Value curve—obviously it is simply the straight line represented by *(X-value) = (Y-value)* since the Planned Value at any point is defined to be the cumulative cost. The example used the same (financial) units for EB and EV. Note: this curve can only be included if EB and EV use the same units.

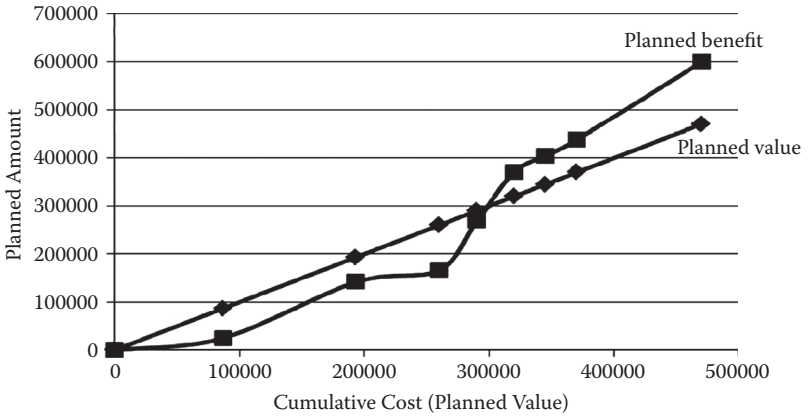


FIGURE 7.21
A benefit-cost curve showing planned benefit and planned value (= cumulative cost).

The reason for showing the two curves together where possible is to underline the point that the cumulative costs at certain times during the program can exceed the potential financial benefits that have been realized up to that point, even though the program is on-schedule, on-budget and has a valid, profitable business case. It is important to make sure that the sponsor and other decision makers are aware of this possibility so that they do not erroneously take this benefits measure as a valid reason for cancelling the program at that point.

The Equivalent Benefit Cost (EBC)

The Equivalent Benefit Cost is the Planned Cost for achieving a given benefit value. It is the X-value on the Benefit-Cost curve that corresponds to the given value of the Benefit (Y-value). Note that this EBC can be higher than the PB part of the way through the program, as shown in Figure 7.21. The converse of this measure is the Value Equivalent Benefit, which is explained next.

The Value Equivalent Benefit (VEB) and Value Equivalent Date (VED)

This is the value of EB for a given spend (or the actual cost AC)—i.e., the Y-value on the Benefit-Cost curve (see Figure 7.21) corresponding to a given X-value. It can then be used to determine the *Value Equivalent Date* based on the AC in the same way as for the EBED (see *Earned Benefit Equivalent Date (EBED)*).

The Benefit Value Schedule Variance, Benefit Value Performance Index

This is a more abstruse measure but one which provides a combination of progress and spend in a single number.

1. Take EB determine the EBED (see *Earned Benefit Equivalent Duration* (*EBED*)).
2. Take AC to determine the VED (see *The Value Equivalent Benefit* (*VEB, VED*))

The *Benefit Value Schedule Variance* (see Figure 7.22) indicates schedule variance in achieving the benefit value corresponding to the actual cost.

$$BVSV = (Earned\ Benefit\ Equivalent\ Duration) - (Value\ Equivalent\ Date)$$

FIGURE 7.22
The benefit value schedule variance.

$$BVPI = 1 - \frac{BVSV}{Actual\ Duration}$$

FIGURE 7.23
The benefit value performance index.

Negative values are bad news: lateness and over-budget conditions make the value progressively worse.

You can also calculate the Benefit Value Performance Index, as illustrated in Figure 7.23.

EARNED BENEFIT REVIEWS

At each progress review, calculate the Cost Performance Index (see Figure 7.24)—as in the standard Earned Value cost tracking approach.

The following index values, which were defined earlier, give additional useful information:

- Benefit Performance Index.
- Benefit Schedule Performance Index
- And, possibly, the Benefit Value Performance Index

Any value less than 1.0 in any of these index values indicates a slip in either cost or time—or both—which will need to be explained.

$$CPI = \frac{Earned\ Value}{Actual\ Cost}$$

FIGURE 7.24
The cost performance index.

Communicating the Information

At first sight, just as for Earned Value, the concepts and formulae may seem excessively complex or involved. However, it should be remembered that the approach provides a coherent link across the full life cycle and, as such, directs and adds value to all of the steps in the benefits realization process and becomes easier to understand the more one applies it. That is not to say that the program manager should expect the management chain or the customer to understand the finer points of the technique. On the contrary, with a good understanding of what the numbers really indicate, the program manager will be able to translate them back into concepts linked to the relevant stakeholder's domain of interest.

SUMMARY

A consistent benefits realization life cycle has been defined, along with the main processes for planning and tracking the benefits from inception to termination. The planning and tracking technique builds on the concepts of Earned Value, with the addition of the recognition of the potentially complex contribution of the separate components to the overall benefits of the program. The example in the appendix demonstrates the EV and EB can provide different images of actual program status.

The revised Benefits Realization life cycle puts the focus of program management back where it belongs: into managing the realization of the required benefits. It also helps to explain the main responsibilities of the key roles in the program.

Although different program environments will have different constraints and objectives, the framework shown above is universally applicable in its broad lines.

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Note: this paper provides a basis for extending program Earned Benefit as discussed above toward a portfolio Earned Strategy technique, but it has just been published so it is not discussed here by reason of time and space constraints.

APPENDIX: EXAMPLE OF EARNED BENEFIT CALCULATIONS PLUS ABBREVIATIONS

Reminder

The formulas in Figure 7A.1 and Figure 7A.2 for Earned Benefit are:

$$CEBi = \%complete[component(i)] * \sum_{cols\ j} (Vij * Bj)$$

$$EB = \sum_{rows\ i} CEBi$$

Sample Situation

Your program is aiming at three Benefits (B1, B2 and B3). The way in which the components (C1 to C6) contribute to them is shown below in the normalized Component-Benefit table (Figure 7A.3).

$$\boxed{CEBi = \%complete[component(i)] * \sum_{cols\ j} (Vij * Bj)}$$

FIGURE 7A.1
The component earned benefit formula for component i.

$$\boxed{EB = \sum_{rows\ i} CEBi}$$

FIGURE 7A.2
The total earned benefit.

Benefit / Component	B1	B2	B3
C1	0.25	0.25	
C2	0.5		
C3		0.083	0.625
C4		0.333	
C5	0.25	0.083	
C6		0.25	0.375

FIGURE 7A.3
The normalized component-benefit table.

The monetary value of the benefits is forecast to be:

B1 € 100,000
B2 € 200,000
B3 € 300,000

i.e. total benefit of € 600,000

The estimated cost of the components is:

C1 € 200,000 from 1 January to 1 April
C2 € 40,000 from 1 February to 1 March
C3 € 60,000 from 1 April to 1 June
C4 € 50,000 from 1 June to 1 August
C5 € 20,000 from 1 February to 1 March
C6 € 100,000 from 1 August to 1 September

i.e. total cost of € 470,000

The program starts on 1 January 2011 and is composed of three stages, aligned with the realizations of benefits:

Stage 1: (B1) completion of components C1, C2, C5 planned for 1 April 2011
Stage 2: (B3) adding components C3, C6. B3 to be realized for 1 September 2011
Stage 3: (B2) adding component C4. B2 to be realized for 1 September 2011

It is now 1 July and the following has been reported:

- C1, C2 and C5 are complete.
- C3 and C4 are 75% complete
- C6 is not yet started
- Spend to date (Actual Cost) is € 370,000

The Earned Benefit Curves

The Planned Value Curve

This curve (Figure 7A.4) is composed of the summed planned values of the components—here cumulated on a monthly basis.

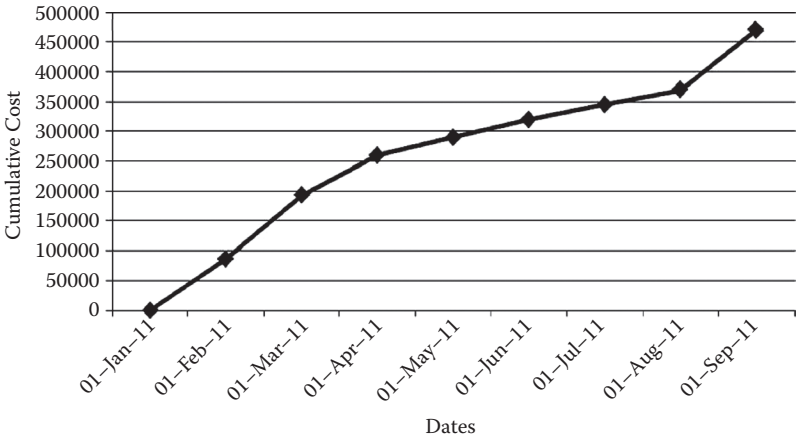


FIGURE 7A.4
The planned value (cumulative cost) curve.

The Planned Benefit Curve

This curve (Figure 7A.5) is composed of the summed planned benefits—here cumulated on a monthly basis based on the Earned Benefit formula (see *Reminder*).

The Benefit-Cost Curve

As explained in *The Benefit-Value Curve*, this graph (Figure 7A.6) shows two curves plotted against the forecast spend:

a) The Planned Benefit curve
b) The Planned Value curve

Some Calculations

Earned Benefit and Percent Complete

Using the component-benefit matrix above, calculate

1. the Earned Benefit,
2. the % Benefit realized for the program

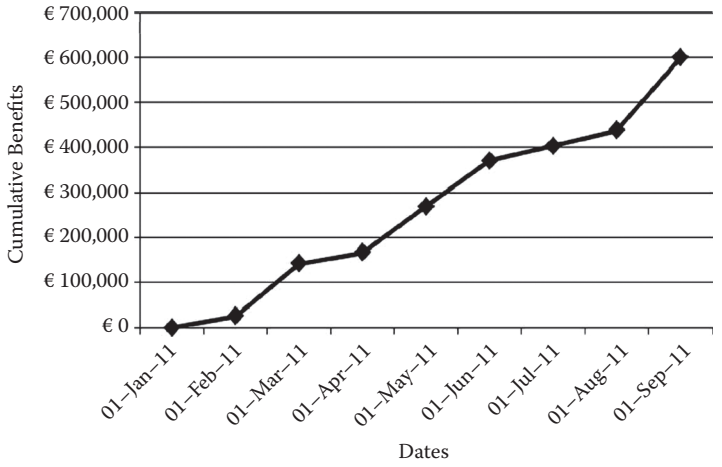


FIGURE 7A.5
The planned benefit curve.

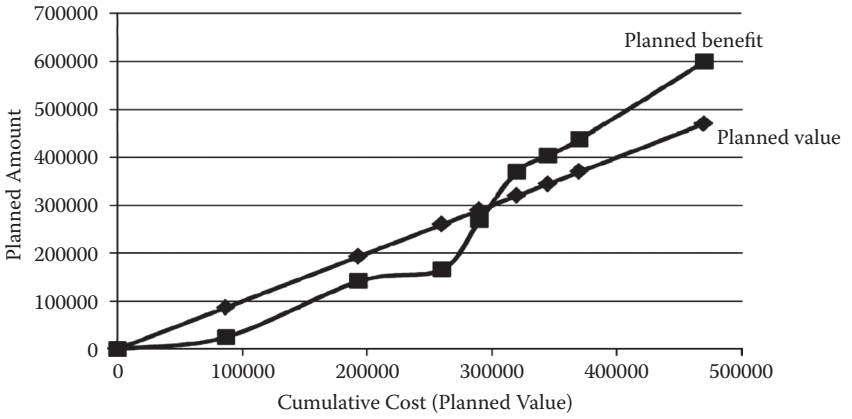


FIGURE 7A.6
A benefit-cost curve showing planned benefit and planned value (= cumulative cost).

The worked solution is as follows (showing the unnormalized Component-Benefit Matrix; normalization is carried out on-the-fly in Excel)

Benefit Performance Index

The PB (EB if we were on-plan) is € 404,000, giving a BPI of 91% and a Benefit Variance BV of –€ 34,300.

	€ 100,000	€ 200,000	€ 300,000		CCB	CEB
100%	1	3			€ 75,000	€ 75,000
100%	2				€ 50,000	€ 50,000
75%		1	5		€ 204,167	€ 153,125
75%		4			€ 66,667	€ 50,000
100%	1	1			€ 41,667	€ 41,667
0%		3	3		€ 162,500	€ 0
	4	12	8			
				Earned Benefit		**€ 369,792**
				Benefit at Completion		€ 600,000
				% Realized		**62%**

FIGURE 7A.7
Worked solution showing earned benefit and % benefit realized.

Benefit Schedule Variance; Benefit Schedule Performance Index

The benefit schedule variance is the difference between the data date and EBED: the date at which the current Earned Benefit was planned to be achieved. This can be read off the Planned Benefit curve, and shows we are approximately 1 month late.

Looked at another way, the program has been running for 6 months and has slipped by 1 month, so the *Benefit Schedule Performance Index* (BSPI) is 5/6 = 83%.

Benefit Value Schedule Variance, Benefit Value Performance Index

A simple analysis might say: the Actual Cost is no greater than the Earned Benefit, so we may have slipped a bit; what is more interesting is that EV and PV are virtually identical so: we are not doing too badly, are we? A closer (benefit-related) analysis puts a less optimistic view on the matter.

The AC (€ 370,000) corresponds to the PV for 1 month *later* (the VED), whereas the EB corresponds to the PB for one month *earlier* (the EBED), so we are, in essence 2 months adrift after 6 months—so going at 4/6, i.e., a 67% Benefit Value Performance Index. For comparison, the BSPI is (6-1)/6 = 83% at this point, since it ignores the budget overrun.

All of the values from this example as well as a number of EB indicators that have not been explained above have been provided in the following table for any reader who might like to check their understanding of the concepts (and of Excel!)

Earned Benefit Abbreviations and Values

The following is a list of the Earned Benefit abbreviations, names, and values from the example.

The Earned Value Abbreviations, Names, Formulae and Values from the Example

Abbreviation	Names	Description	Value from Example
AC	Actual Cost	Total spend to date	€ 370,000
AD	Actual Date	Date of data	1-Jul
ADD	Actual Date Duration	Days since start	181 days
BAC	Budget At Completion	Total Budget	€ 470,000
BCPI	Benefit Cost Performance Index	EBEV/AC	86%
BPI	Benefit Performance Index	EB/PB	92%
BSPI	Benefit Schedule Performance Index	EBEDD/ADD	83%
BSV	Benefit Schedule Variance	EBEDD – ADD -	30 days
BV	Benefit Variance	EB – PB	-€ 34,000
BVPI	Benefit Value Performance Index	EDD – (VEDD – EBEDD)/EDD	66%
BVSV	Benefit Value Schedule Variance	EBEDD – VEDD	-61 days
CBM	Component-Benefit Matrix	See example	
CCBi	Component Contribution to Benefit	sum over columns j of {[CBM(i,j) * B j}	
CEBi	Component Earned Benefit	% complete i * CCBi	
CPI	Cost Performance Index	(EVM Formula): EV/AC	93%
EB	Earned Benefit	The sum of all the CEBi	€ 370,000

The Earned Value Abbreviations, Names, Formulae and Values from the Example (continued)

Abbreviation	Names	Description	Value from Example
EBAC	Earned Benefit at Completion	Total forecast benefit value	€ 600,000
EBEC	Earned Benefit Equivalent Cost	The PV for a given EB	€ 320,000
EBED	Earned Benefit Equivalent	Date Planned date for current EB	1-Jun
EBEDD	Earned Benefit Equivalent	Date Duration Days since start	151 days
EBEV	Earned Benefit Equivalent Value	The EV that corresponds to the EB	€ 320,000
EDD	Elapsed Duration	AD – PSD	181 days
EV	Earned Value	Sum of component Earned Values	€ 342,500
PB	Planned Benefit	The EB expected at a given date	€ 404,000
PPC	Program Percent Complete	EB/EBAC	62%
PED	Planned End Date	Program or stage completion date	1-Sep
PEDD	Planned End Date Duration	Days since start	243 days
PSD	Start Date	Origin for calulating durations	1-Jan
PV	Planned Value	Sum of component Planned Values	€ 345,000
SPI	Schedule Performance Index	(EVM formula): EV/PV	99%
TCPFx	To Complete Performance Factor	• Time: TCPIT/BSPI	178%
		• Cost: TCPIC/BCPI	173%
		• Benefit: TCPIB/BPI	128%
TCPIx	To Complete Performance Index	• Time: (PEDD – EBEDD)/(PEDD – ADD)	148%
		• Cost: (BAC – EBEC)/(BAC – AC)	150%
		• Benefit: (EBAC – EB)/(EBAC – PB)	117%
VEB	Value Equivalent Benefit	The PB for a given AC	€ 437,500
VED	Value Equivalent Date	Planned date for spending AC	1-Aug
VEDD	Value Equivalent Date Duration	Days since start	212 days

8

Demystifying Stakeholder Management: The Science and the Art

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INTRODUCTION

What do you think of when you see or hear the term stakeholder management? And if you are a practicing program manager, how good do you think you are at it?

The words stakeholder management are referenced widely in portfolio, program, and project management literature and journals. A Google® search provides over seven million results (covering all sorts of uses of the phrase, not limited to use solely in program management). Stakeholder

management is frequently talked about in our profession; it is generally accepted as belonging to the remit of communications management, yet there is no universally agreed and published definition of what it is.

The UK's Association of Project Management (APM) defines stakeholder management, within the context of a project, as follows:

> Stakeholder management is the systematic identification, analysis and planning of actions to communicate with, negotiate with and influence stakeholders. Stakeholders are all those who have an interest or role in the project or are impacted by the project.

One could replace the word "project" with "program" in this statement, and it would encapsulate the meaning of stakeholder management in relation to a program of work.

Even if there was a universal definition for stakeholder management at a program (or indeed a project) level, there is no universal method of actually managing stakeholders. The identification, analysis, and planning actions to communicate with, negotiate with, and influence stakeholders is performed by people in different ways based on our personal experiences and the situation we are faced with at the time. What is universally accepted is that stakeholder management is key to achieving program success. As this chapter will discuss, it is important to put in the "hard yards" to carrying out actions from a well-thought out plan for program stakeholder management. It is *particularly important* to remember that it can often be little subtleties in one's actions that make the difference between a good or bad stakeholder outcome for a program of work.

This chapter provides critical thinking on some concepts of managing stakeholders (if, indeed, stakeholders can be managed). Done well, stakeholder management is a powerful contributing factor to a program's success. Done poorly, it makes the successful delivery of your program significantly harder.

Think of stakeholder management in a nutshell as:

1. A communications toolset for managing relationships
2. Involving science and art in equal measure

Remember that all actions one take with ones stakeholders must at all times be:

1. Purposeful
2. Targeted
3. Monitored for effectiveness (and methods changed if necessary)

SHALL WE CONTINUE TO CALL IT "STAKEHOLDER MANAGEMENT"?

Let us begin the chapter with a review of the term stakeholder management. Can stakeholders be managed? Should they be? Or should they be *engaged*?

The term stakeholder engagement is fairly common in our profession. Given the nature of program management, which is more strategic than at a project level, it is perhaps more appropriate to use this term.

THE "COVERAGE" OF STAKEHOLDER ENGAGEMENT

Stakeholder engagement at a program and a project level is closely associated with, and is generally considered part of, communications management.

The Project Management Institute's (PMI®) *A Guide to the Project Management Body of Knowledge* (PMBOK® Guide) Fourth Edition (2008a) focuses on stakeholder engagement (it is referred to as stakeholder management) in the section dedicated to Project Communications Management (pp. 243–271). The PMBOK® covers a framework and the core processes at a project level of identifying stakeholders, planning communications, distributing information, managing stakeholder expectations, and reporting performance.

Similarly, the PMI® *Standard for Program Management*, Second Edition (2008b) provides a similar framework for program communication management (Chapter 10, pp. 141–156). The Standard states that "program communication management is the Knowledge Area that includes the processes for ensuring timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of program information" (PMI®, 2008b, p 141). It further states program communication management is different from project communications, in that it affects a wider array of stakeholders.

Most program practitioners would consider it true that stakeholder engagement is part of communications management. It is important to remember the impact that stakeholder engagement has on many other aspects of running a program. Benefits management is a particularly important linkage with stakeholder management because, in order to ascertain realistic and tangible benefits and then be ready to deliver them when the artifact(s) from the program go into use, the program manager must ensure everyone has been brought along the journey and is ready to sustain them.

The take-away message then from a program perspective is that the coverage of stakeholder engagement is more than following processes for planning communications, distributing information to interested parties, and reporting on performance. In order to be effective at program stakeholder engagement, hard work in the mechanics of communications control must be interwoven with subtle ways of understanding stakeholder needs, knowing how to influence others, and recognizing how to empathize with differing and competing views, which inevitably exist on most programs.

HOW TO EXERT THE RIGHT LEVEL OF INFLUENCE

Acknowledging that the remit for stakeholder engagement falls within the domain of communications management, consider this statement:

> In order to excel at program stakeholder engagement you need to be artful and skilled at influencing people, and to achieve this, you need a high degree of emotional intelligence.

Do you agree?

When you consider stakeholder engagement, do you ask yourself the following:

> How can I, the program manager, ensure I keep everyone involved and informed at the right times about this program (not too much, not too little), so that all identified parties know what they need to know, feel they are being listened to (to the degree their influence permits), and are clear on how we are moving forward?

The above statement is indelibly linked to ensuring effective communications, yet it is more than that: it is about influencing others. The program manager needs a keen antenna to assess people's positions with regard to the program and be skilled at influencing people. The key to influencing others is ensuring that your message is being understood and accepted. Carnegie (1936, updated in 2006) wrote that: "He who can do this has the whole world with him. He who cannot walks a lonely way" (p. 32). Carnegie puts forward the premise that you need to understand what people want to get what you need. He provides an example of fishing, putting it to the reader that, while people will not find worms an attractive food, fish do, and that is why fishermen bait their hooks with worms to catch fish and not strawberries and cream. The point is as a program manager, one needs to bait hooks with things people want. So, to start with, do you know what they want? If not, find out. The bait you use may not be what you would choose for yourself, but that is beside the point. Invest the time to find out what your stakeholders are interested in about your program by thinking about it through their lens. If you are not sure what they need, ask around and think about what they do as their main job and how your program impacts it.

Another important aspect to communicating with people is to get on the same wavelength as them. Carnegie (1936, updated 2006, pp. 205–206) notes "Twelve Ways to Win People to Your Way of Thinking":

1. Avoid arguments (constructive debate is fine).
2. Show respect for the other person's opinions. Never tell someone that he or she is wrong.
3. If you're wrong, admit it quickly and make it clear you are doing so.
4. Begin discussions in a friendly, not aggressive, way.
5. Start with questions to which you feel the other person will answer Yes.
6. Let the other person do most of the talking.
7. Let the other person feel an idea discussed is his/hers.
8. Concentrate on seeing things from the other person's point of view.
9. Sympathize with the other person.
10. Appeal to noble motives.
11. Give your ideas body and mass (e.g. by telling compelling stories).
12. Don't talk negatively when a person is absent; be positive."

Consider the work also of Goleman, Boyatzis, and McKee (2002) referring to primal leadership, which argues that a leader's emotions are contagious:

> If a leader resonates energy and enthusiasm, an organisation thrives. If a leader spreads negativity and dissonance, it flounders (p. 2).

Goleman et.al write:

> Both good and bad moods tend to perpetuate themselves, in part because they skew perceptions and memories: when people feel upbeat, they see the positive light in a situation and recall the good things about it, and when they feel bad, they focus on the downside (p. 12).

Part of your role in engaging with stakeholders is to understand the mood of the moment when you are dealing with them and handle the situation accordingly. Bear in mind that at times this may require you to change or cancel an update of some sort, if the environment is not conducive to your executing it.

By successfully applying some basic concepts to engaging with people, you will have a fair chance of success in your stakeholder engagement. You know what you want, and you know what you want to achieve with your program. Other people will have a different view, because the program will have a different level of influence on them than it does on you. Sometimes they will not know what advantages it may bring them; if this is the case, as the program manager, you may need to uncover them in some way. Some will care about it more than others, and some will help you more than others.

PLANNING PROGRAM STAKEHOLDER ENGAGEMENT EFFECTIVELY

A stakeholder management/engagement technique to use in program and project management is stakeholder mapping. A stakeholder map is a mind map of information on who (individuals and/or groups) has a bearing on your program. Mind maps were popular in the 1980s, with people such as Buzan (1995) providing guidance on how to effectively map out your thinking in a radial way. Buzan refers to the "natural architecture" of

nature (think of trees with their trunk, branches and twigs) and how this can be likened to the way the human brain functions (p. 26). Buzan writes:

> Every time you have a thought, the biochemical/electromagnetic resistance along the pathway carrying that thought is reduced. It is like trying to clear a path through a forest. The first time is a struggle because you have to fight your way through the undergrowth. The more times you travel that path, the less resistance there will be (p. 29).

Buzan continues to by describing what he calls "radiant thinking", whereby the brain's thinking pattern involves lines of thought radiating from a virtually infinite number of data nodes (p. 56).

Buzan's description of the way the brain works is helpful because a little understanding of our cerebral patterns will help develop an effective stakeholder map—one that will stay in your mind and hopefully those of your team as well. You need to consider the spheres of influence that exist. Your program will have different spheres of influence radiating out from the inner core. People who are close to the center will have more influence than those on the periphery, but you cannot ignore those people who are in the outer circles for they may have connections into those much closer that could prove to be influential.

Roberts (2007) describes stakeholder maps as follows:

> From the project at the center, lines are extended to the stakeholder groups, subgroups and individuals. For instance, the technology department may be large and contain many people who will not have an interest in the project….the individuals in software development have been identified, one of whom may be the department head who has skills especially useful for this project (p. 57).

You will undoubtedly find it beneficial to draw up a stakeholder map with your program team, since you will as a team identify more stakeholders and their spheres of influence than you can as an individual. By engaging your team in the process you are also bringing them along the stakeholder journey as well.

Other techniques for identifying and categorising stakeholders exist, such as using an onion diagram of concentric circles to show stakeholder positions, see Figure 8.1.

Another way to think about and categorize your stakeholders is to draw up a stakeholder matrix. This may be a natural next step from drawing up

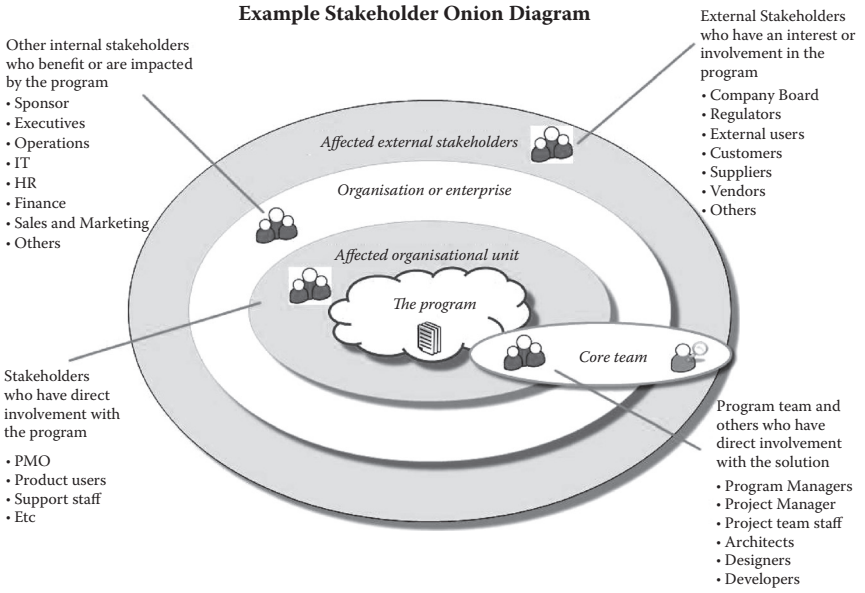


FIGURE 8.1
Example of a stakeholder map using an onion diagram.

a stakeholder map or an onion diagram. Once you have identified your stakeholders, you can categorize them by their level (real or perceived) of power and influence. A variety of 'four by four' matrices exist to provide such matrices; they generally adhere to a principle of Power or Influence (High/Low) on one axis and Support (High/Low) on the other. You will never have everyone in a position of being a Supporter. Do you know why they will not be supporters (the underlying reasons)? Is there an opportunity to turn them into supporters by undertaking certain actions? See Figure 8.2 as an example.

What you need to consider most carefully is those stakeholders who have a high degree of power on your program. If they are not supporters of it, be prepared to spend a lot of energy on these power players who you need to get on your side. Remember also that a person's level of power and support can change through the duration of a program. Additional guidance on this area is provided later in this chapter.

Remember also the ripple effect akin to ripples in a pool. The way you interact with your stakeholders is key to ensuring they then tell the next ten people about the program in the right way. To draw an analogy, think about the last plane journey you took on which you experienced poor customer service. Chances are you told many people about it, probably

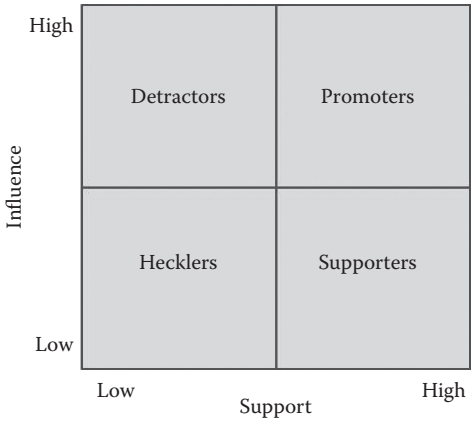


FIGURE 8.2
Stakeholder matrix categorization,

quoting the name of the airline involved and maybe highlighting particular aspects. Think about the effect your words may have on others who will be faced with a choice in future of taking that same airline or another one. Reputation really is key. It takes hard work to maintain and can be lost quickly through the viral network.

While all this planning is good, you need to turn successful application of your planning into real actions to reap positive results. Your behavior will be the key to successful stakeholder engagement. If you have a positive attitude and a willingness to put in the time to talk with people in order to get on the their same wavelength, to listen to their needs, and to be clear about what you are going to achieve, chances are you will succeed.

Take advantage of information that exists about your program to help achieve clarity on approach. For example, the scope statement is an invaluable tool in explaining to stakeholders what the program is about, what is in scope, and what is out of scope (and why). The same is true for your cost, schedule and program management plans. All these artifacts can help your discussions with stakeholders.

THE IMPORTANCE OF A COMPELLING VISION ON STAKEHOLDER ENGAGEMENT

To maximize the effect of planning, controlling, and managing your program communications to your stakeholders, you need a compelling vision

that is succinct and, as Heath (2007) suggests, is a message that "sticks", with six characteristics:

1. It should be simple
2. It should have an element of the unexpected in it (think "surprise")
3. It needs to be "concrete" (and be in plain language)
4. Ensure it is credible
5. Use emotion wisely
6. Tell stories

The relevance to these suggested pointers for crafting a message on stakeholder engagement is in order to excel at working with your stakeholders you need to express the meaning of your program in a way that will "stick" with them. And you will need several different takes on this message. Think of it as similar to how people have different musical preferences. Different musical styles resonate differently with people, and you need to find the styles that your stakeholders will latch on to and use them appropriately.

Having an effective message that is simple, concrete, and "sticky" will make the task of communicating your goals, your progress, and everything else much easier, so take the time up front to think hard about a compelling vision. Be prepared as well to adapt and change it along the way, but try to keep it reasonably constant. Ensure you have a few different lengths and versions for communicating your vision, and a summary about the initiative. You will need your 'ten second elevator pitch'; a larger (but not too large) summary, which you update regularly and use for general communications; and more detailed information for specific aspects of the program that matter to specific stakeholders.

NAILING YOUR COMMUNICATIONS

PMI® (2008a) describes the 'communications theory' of a message being encoded by a sender and decoded by a receiver. The core concept is that messages can and will be interpreted in different ways by different people, so it is vital to check that your message has been received in the way that you intended it to be.

The brain filters and distorts communications as perceptions—what you think you have communicated to someone might not be what they have received as the message.

According to studies by Mehrabian (2010) just seven percent of the delivery of a message when it is delivered face to face is in the words used. Some 38 percent (on average) is in the tone of voice, and approximately 55 percent of the message is conveyed in the body language used. While these statistics are an average based on research, the message is clear: for face-to-face discussions remember these statistics when you are engaging with your stakeholders.

To ensure your communications are clear, consider the following:

1. Who is important in your program at this point in time?
2. Why are they important?
3. What do they need to help you keep your program on track?
4. What are their expectations? Are they engaged?
5. What is the purpose of what you communicating to them?
6. How are you communicating to them—face to face, oral, written formal, or written informal?

It is worth bearing the following points in mind as well when you are communicating with others:

- People are irrational in their decision-making—both as individuals and groups
  - Do not expect all responses to your communications to be rational
- We can be, and often are, affected by all or any of the following:
  - Overconfidence (e.g. overt faith in a tight schedule with many interdependencies only to find that risks, which were brushed aside turn into issues)
  - Confirmation bias (seeking out proof that supports our own position)
  - Expert bias—going with the view of an expert without sufficiently challenging his or her judgment
  - The recency effect (looking only at recent events as a guide, not the long term)
  - Anchoring too early (e.g. people using ballpark or order-of-magnitude estimates they are quoted early in a program's life)
  - Hindsight bias—"why, it is obvious that I would not have done that if I was in that position"

REPORTING AND STAKEHOLDER ENGAGEMENT

Earlier, this chapter noted stakeholder engagement exists within the domain of communications management, and reporting also is part of this sphere of activity. What purpose do reports serve? Are they read by all stakeholders who receive them? Are they read by the stakeholders who really need to read them? Are they effective at getting across the message you want to convey?

Your program reporting must:

1. Contain useful information that is accurate and honest
2. Provide a feeling of comfort to the recipients that they can see what is happening

Bear in mind the following:

- Remember that different stakeholders need different levels of information in different formats—one size does not fit all
- Broadcasting is not communication—you cannot ask a report questions
- Remember that there is no guarantee that your report will be read, understood, or that any actions will be acted upon—a report is a leader for a discussion
- Ask periodically during meetings and phone calls whether the reporting being provided to stakeholders is useful to them

TRACKING YOUR STAKEHOLDER MANAGEMENT ACTIVITIES

How much time should you spend on stakeholder engagement as a program manager? Ten, 20, or 50 percent? There is no one right answer to this question, but you will need to spend a significant amount of your time working with stakeholders during the entire program. It is arguably your most important activity as a program manager. Your simple rule should be: if you see too much confusion and misconceptions about your program, you are not doing enough.

Do you track your stakeholder activities in a register? You may find it helpful to use a program-level customer relationship management register to keep track of everyone involved, their level of power/influence and support, the main activities undertaken with them, the approximate frequency of keeping in contact, and when you next need to contact them in some way, shape, or form. Whether it is in an electronic form or hard copy is a moot point—the point is that, as a program manager, it is well worth keeping track of who you are speaking to and when and review it periodically to make sure that you do not overlook anyone. This is particularly true for stakeholders who are the key influencers in your stakeholder matrix. Make sure you spend enough time with those who have a high degree of influence and are not supporters.

WORKING IN A GLOBAL ENVIRONMENT OF STAKEHOLDERS

Many programs of work involve teams and stakeholder groups who are based in many countries. It is well known that different nationalities around the world have different styles of working, and communicating with each other one is based on cultural norms and values that exist in society. Managing a global program and having a broad mix of nationalities in your stakeholder net can be extremely rewarding and interesting to the program manager, and it is a great opportunity to learn about working with people from other cultures. Remember that it requires a greater degree of emotional intelligence to understand how to get your message across and ensure you have a common understanding.

DO YOU HAVE THE KEY COMPETENCIES FOR EFFECTIVE PROGRAM STAKEHOLDER ENGAGEMENT?

This is the crunch question. As discussed earlier, effective stakeholder engagement requires you to put in the 'hard yards'; there are no two ways about it. It underpins your activities and those of your project teams. If you are not prepared to constantly be in a stakeholder mode, you will not fulfill the needs of the role.

As well as putting in 'hard yards', you also need acute sensitivity and perceptiveness to your environment, and you need good influencing skills. Effective timing of communications to stakeholders is a skill, not a mechanical process. If you bombard people with too much information, it will not work; too little and they will not feel involved.

FIVE RULES FOR SUCCESSFULLY WORKING WITH YOUR STAKEHOLDERS

To summarize, consider the following take away points on stakeholder engagement at a program level:

1. Identify your stakeholders and understand their needs
2. Prioritize your stakeholders (in influence and support)
3. Take the time to understand their needs (particularly your power players)
4. Develop an engagement strategy, then work that plan
5. Monitor changes over time as changes take place in your stakeholder community, particularly at major milestone points in the program

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9

Closing the Expectations Gap: Setting and Managing Expectations

Amy Baugh, MBA, PMP, PgMP

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INTRODUCTION

According to *Merriam Webster*, an expectation is defined as "a belief that something will happen or is likely to happen." While there are many important roles and responsibilities in program management, none is more important than managing expectations. In this chapter, we are going to explore why managing expectations is so critical, how expectations are originated and managed, and why this is the most important set of duties for a program manager.

We will start with a discussion of overall skills required for success in managing expectations and then move into more specific discussion of what is required at each phase in the program management life cycle. For each phase, we will cover:

- Expectations that need managing (and why)
- How to manage those expectations—specific skills needed and related tips
- How expectations management ties in to a program management methodology

PROGRAM MANAGEMENT SKILLS NEEDED TO MANAGE EXPECTATIONS ACROSS ALL PHASES

There are many skills required to be a strong program manager; some of these are specific to particular phases of a program, but there are a few that are essential throughout the course of the program. The most critical skill needed to consistently and successfully manage customer

expectations is communications. This covers everything from being able to have an open and honest face-to-face conversation, sending relevant and timely written communications, being able to facilitate large group sessions, presentation skills, and even being able to manage off-site and/or global staff. You can be the most organized program manager in the world, but without strong communications skills you will fail. You must talk to your customer, constantly. Over-communication is far better than not communicating enough; a lack of communication will lead to perhaps unfounded assumptions, and assumptions lead to missed expectations.

In order to have strong communication skills, you need to know when it is appropriate to communicate, who the right audience is, and their expectations as to the level of detail of each communication. This requires having good "organizational savvy." In order to build organizational savvy, time must be spent building relationships. It is through informative conversations and spending time learning about the organization that you will build this necessary knowledge base.

Only with meticulous expectations management will you be able to close the gap between expected results (which really define program success) and delivered results. Going into a program armed with strong communication skills and practices along with a network of solid business relationships will set the stage for running a successful program, see Figure 9.1.

SETTING EXPECTATIONS DURING THE PRE-PROGRAM PREPARATIONS PHASE

Almost every program begins with a conversation; it could be a formal "pre-kick off" meeting, or it could be as casual as a hallway conversation. That conversation is the first chance a program manager has to set expectations. Usually, the initiator of the conversation has something he or she wants to get accomplished; in this initial conversation people ask general questions such as how big of an effort it would be to accomplish their goal—is it a "house or a mouse?"

The expectations that are most important to manage at this stage are:

- Scope
- Effort
- Cost

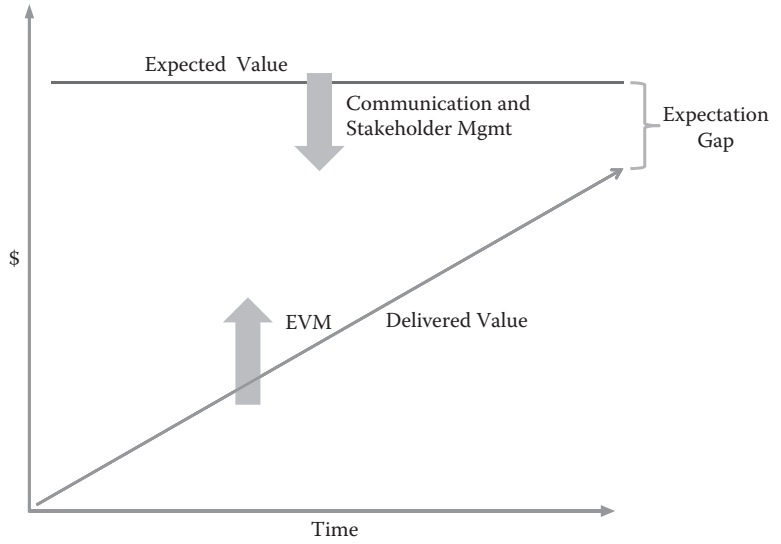


FIGURE 9.1
Closing the expectations gap.

Scope

The program manager needs to determine the scope of the request and check it for reasonability. While it is good customer service to always have an open mind and think creatively about solutions to meet customer goals, it is equally important to carefully think through what may or may not be feasible and provide honest feedback. If this is not done, the customer may assume you agree, and expectations are already set, whether or not they are reasonable ones. For example, a business customer may desire to integrate multiple complex legacy systems in a few months to meet a future business need. It is most likely not feasible to do this in the time frame requested. Instead of just saying no, however, a better answer is to discuss the scope and take some time to consider the potential for an incremental approach.

Effort

In most cases, the customer will not only have a goal it wants to accomplish, but it is likely the customer has a time frame in mind, as in the example above. It is important to determine at a high level how intensive the effort will be required to meet the program objectives. Is the request a relatively minor, or will it be a multi-year effort? How complex is the work?

Cost

Often customers will ask about feasibility of a program, and it is easy to respond that "anything is possible with time and money". Even if agreement is reached on scope and a general timeline, when it comes to cost, everything changes. In many cases, customers will talk all about wanting the moon, when their budget will only support buying a chunk of cheese. It is necessary to include a discussion on program budget, even at this early stage, to avoid disappointment later. In relation to the budget, as a program manager you should be able to provide an overall idea of the cost—not even a rough order-of-magnitude (ROM) estimate at this point. If you do not know this information, seek it out, and schedule a follow-up conversation with your customer. What you say here is going to set the base expectations around cost.

PROGRAM MANAGEMENT SKILLS AND TIPS

To manage expectations successfully through the Pre-Program Preparations phase, several key program management skills are required, most importantly:

- Understanding the Business
  - TIP: If you do not know, do not guess; ask for time and gather input from the appropriate subject matter experts (SMEs) so you may provide an educated response.
  - TIP: Take the time to learn the business—any hands on experience you can get to help gain perspective is worth the time invested.
- Dealing with Ambiguity
  - TIP: Do not try to be overly scientific at this stage—a 'rough' feel is sufficient.
  - TIP: Be sure to be clear that the responses you provide are based on the limited information available and get acknowledgement of this limited information from your customer.
- Creativity
  - TIP: If a request seems unreasonable, consider alternate approaches. Could a phase approach be considered? Could scope be reduced? (Consider musts versus wants, etc.)

RELATED PROGRAM METHODOLOGY

Expectations become formalized through the various pieces of program documentation. In the Pre-Program Preparations phase, there are a couple of key documents that detail the expectations that are discussed in these early meetings:

First, the *program mandate* lists the strategic objectives and benefits that a program is expected to deliver (PMI®, 2008). With this formalized document, an organization then proceeds to the Program Initiation phase for further discovery.

Another document commonly used at this phase is a *high-level business case*. Business needs, benefits, feasibility, and justification can be consolidated in this document. The business case is the starting point, and from here you will be able to progressively elaborate the program details as you move through the remaining phases.

SETTING EXPECTATIONS DURING PROGRAM INITIATION

Once a program concept has been approved during the Pre-Program Preparations phase, business stakeholders have deemed it worthwhile to do additional discovery around the proposed program. At this phase, there is a shift to more formal communications to a larger group of key stakeholders around scope, effort, and cost. As such, it becomes important to have more refined data points. In this phase, the key expectations to manage are:

- Definition of success
- Refined ROM estimates for scope, cost, and time
- Skills and resource types needed

Definition of Success

In the Pre-Program Preparations phase, high-level business goals and objectives were defined. Now, in the Program Initiation phase, those goals and objectives need to be further defined in a way that articulates what success is to the customer and your organization. If you have a list of deliverables, and

you complete them all on time and within budget, you may still miss the mark if there is not agreement with stakeholders on their definition of success.

Refined ROM Estimates for Scope, Cost, and Time

Scope should be broken down into specific deliverables, and an estimating session should be held to validate the initial estimates. As more and more people become involved or informed about the program, and the estimates start being circulated, the more concrete those estimates become in people's minds. As such, taking the time to refine estimates at this early stage is an important step.

Skills and Resource Types Needed

In this phase, as a program moves from concept to a more concrete form, it becomes important to begin thinking through what roles, responsibilities, and specific skills will be needed for successful program delivery. Do you have the skills in house, or are there certain skills that you will need to outsource? If you have the skills in house, are there competing programs? What is the availability of these key resources? At this stage, you will not be at the point where you have named resources, but you should be able to articulate the type and quantity of resources you need and have an estimate for how long you will need them.

PROGRAM MANAGEMENT SKILLS AND TIPS

- Communications
  - TIP: Holding a program kick-off meeting with all key stakeholders is a good way to ensure everyone understands and agrees upon the goals and objectives. You may also use this meeting as a venue for defining success measures.
  - TIP: Pay attention to informal communications from your customer; pay attention not only to what they say, but to body language. If you see signs of discomfort, (for example, lack of eye contact, uncomfortable shifting, etc.), ask probing questions to identify areas of conflict, and talk those pieces through in more detail. Working out those areas of discomfort will help ensure customer buy-in to the program.

- Organizational Savvy:
  - TIP: A good way to determine resource needs is to talk to people who have run similar programs; there is a wealth of historical information available, and it is worth the time to seek people out and learn from their experiences.
  - TIP: Putting together a program organizational chart listing the needed functional roles helps communicate visually to stakeholders what the overall resource needs are for the program.
  - TIP: Give your customers options. In talking through deliverables, if a customer is unrealistic, asking for deliverables not in line with budget for example, chart out options demonstrating the scope, timeline, and cost for each option; consider expectations such as a full blown solution at full cost/long timeline, a short-term fix at low cost/shortest timeline, or a hybrid solution at medium cost/time.
- Business and Technical Knowledge:
  - TIP: Pull together appropriate SMEs and hold an estimating session. Taking this step helps build confidence in the reliability of the estimates.

RELATED PROGRAM METHODOLOGY

From a program documentation perspective, much of the information discussed above should be incorporated into the program charter. The charter will serve as a reference document for stakeholders and team members, incorporating information on deliverables, resources needs, and timelines, in addition to tying the program back to goals and objectives. The charter then becomes the baseline set of expectations to which you will manage the program.

SETTING EXPECTATIONS DURING THE PROGRAM SETUP PHASE

With an approved charter, an organization is providing approval to move forward with the program and is committing resources (PMI®, 2008). With this charter in place, the focus shifts away from defining the program

to putting a program structure in place in anticipation of moving to the delivery phase. Expectations to be managed here are a little different than in the first two phases; during the Program Setup phase, emphasis is on:

- Program Structure
- Program Methodology
- Roles and Responsibilities
- Program Requirements

Program Structure

Stakeholders need to have expectations set around how the program will be executed. You should be able to provide an outline of program structure that will include:

- The governance process—how often does governance meet? Who is on the governance board? What is the role of the governance board? How will escalations be handled from the program manager to the governance board?
- Reporting/metrics—what information will be collected and shared to show progress of the program and in what format?
- Communications plan—what types of information will be communicated, to whom will information be communicated, in what format, and how frequently?
- What key meetings will be held outside of governance, and what is the purpose of those meetings, who is the audience, etc.?

Each stakeholder will have different past experiences and given those experiences may have pre-conceived ideas around program structure. The program structure should be shared with stakeholders; it is beneficial to ask for feedback to ensure the structure will fully meet customers' expectations from a communications perspective and then adjust it accordingly.

Program Methodology

The specific program methodology will vary from one program to another; some may have a simple waterfall structure, while others may be handled with an agile or other iterative program methodology. It is important to ensure your customers understand what model you will be using, and

what that means to them, especially if it is a new way of doing things for them. For example, how will your program methodology impact governance reviews?

Program Roles and Responsibilities

With program approval, discussions around resources move from general to specific. It is necessary to articulate the various program roles and responsibilities. Of particular importance is the role of the program sponsor; the active participation (or lack thereof) can make or break a program. Having a sponsor by name only seldom has a good result. When it comes to managing expectations in this area, it is just as much about confirming your own expectations of the program sponsor as it is about confirming the program sponsor's definition of his or her own role.

In addition, the Program Setup phase is the appropriate time to articulate the program manager's responsibilities to the program sponsor and reach agreement on those responsibilities. Without taking this step, as a program manager you might find yourself in a position where you think you are doing what is expected only to find out from your program sponsor's view you are failing. This has happened personally to the author (fortunately just once)—it was not fun, and it emphasizes how important it is to have this conversation early in the program.

Program Requirements

Having previously come to agreement on key deliverables in the earlier phases, during the Program Setup phase, those deliverables are further detailed as program requirements. Before moving to execution, there must be formal agreement on these requirements. This additional level of detail ensures clear definition of what will be delivered by the program.

PROGRAM MANAGEMENT SKILLS AND TIPS

- Organizational Skills
  - TIP: Create a central repository for program documentation; include details of the program structure as part of this repository.

Once again, borrow best practices in this space—consider what has been done for other major programs in your company that has worked well?

- Communication Skills
  - TIP: Have a one-on-one conversation with the program sponsor. Clearly ask what his or her expectations are of you, and take the opportunity to share your expectations of the sponsor and confirm understanding.

RELATED PROGRAM METHODOLOGY

There are several key documents put together during the Program Setup Phase that formally documents decisions and expectations around program structure; these include a program-level requirements document, a responsibility chart or a responsibility, accountability, consult, and inform chart, and a communications plan.

SETTING EXPECTATIONS DURING THE DELIVERY OF PROGRAM BENEFITS PHASE

As a program moves into the Delivery of Program Benefits Phase, the emphasis moves from defining expectations to managing expectations. No one likes to be surprised with negative news; a strong program manager will always be aware of the health of the program and will ensure proper communication is happening at the earliest point possible to avoid those types of surprises. Identifying any "red flags" and finding a way to address them is required in order to stay aligned with customer expectations. Given this emphasis, the expectations that need to be managed in this phase are:

- Time and cost
- Prioritization
- Scope (change)
- Risks and issues management

Time and Cost

Expectations around time and cost were set with the program charter in the program initiation phase. Maintaining metrics around progress and spending, and communicating those metrics along with an explanation of ramifications from and plans to address any deviations from projections is essential.

Prioritization

Business priorities change, which may then impact the sequencing of work within a program. It is therefore important to ensure that all stay in alignment when it comes to prioritization. If there is a change in priority, an impact analysis should be done to understand how the priority shift impacts other deliverables and the overall timeframe and budget for the program.

Scope Change

One of the most important functions of a program manager is to monitor and control scope change. It is natural that expectations change over the course of a program, most notably impacting scope. Scope change can hit from a number of directions such as from a change in strategic direction of the company, from missed requirements, or from unanticipated issues. A formal review and acceptance process should be used for changes, and if a scope change is accepted, it should be incorporated into the schedule and budget. It is essential to ensure stakeholders know that increased scope will likely mean an increase in time, and increase in cost, or both. If these types of changes are not closely controlled, the gap between the actual value delivered and the perceived value of deliverables will grow.

Risks and Issues Management

One good way to avoid "surprises" is to anticipate and plan for risks and issues. Watch the program metrics closely; deviations from schedules and cost baselines may indicate a higher probability of an identified risk becoming reality. Stakeholders should be included in a regular review of risks, as well as included in determining related risk mitigation plans. The more times a message is conveyed, the more it will sink in; you do not want the first time a stakeholder hears about a risk to be when it is actually

happening; identify major risks up front, and have a plan ready to implement them.

PROGRAM MANAGEMENT SKILLS AND TIPS

- Financial Acumen
  - TIP: Maintain a program level view of costs that also allows you to drill down to see the detail for each project in the program. Showing actual spend versus forecasted spend allows you to spot trends and deviations early.
- Scope Management
  - TIP: When a customer asks for additional scope, discuss the impact to the other factors—time and cost. A good tool for doing this is to use an illustration of the "triple constraint" to demonstrate the impact of changing one of the three "legs" (time, scope, and cost).

RELATED PROGRAM METHODOLOGY

Successfully managing scope, risks and issues, cost, and timelines requires a structured methodology and careful monitoring. Program management documentation that may be helpful in organizing and analyzing data as a means to identify when further communication is needed with stakeholders include:

- Scope management plan
- Risk management plan
- Program status reports showing time and cost
- Issues log

Maintaining these documents ensures you as program manager have a handle on the overall health of the program. While all of these documents are an excellent way to stay organized and watch trends, the real key to managing stakeholder expectations is appropriate communications of relevant information, as well as communicating and reaching consensus for how any deviations to the plan will be handled.

MANAGING EXPECTATIONS DURING THE PROGRAM CLOSURE PHASE

Once the program has been executed, the expectations management focus shifts to program transition and closure. Was the program successful in the eyes of the customer? Did the program deliver what it was supposed to deliver? How will benefits be maintained moving forward? The two main areas of expectations needing management at this phase are:

- Definition of Success
- Transition/Ongoing Support

Definition of Success

At the end of a program, it is a best practice to hold a post mortem to review the program. A central piece of this discussion should be to revisit the earlier defined "picture of success". One piece of this review is on-time and on-budget delivery. Even more importantly were the goals and objectives met? Once again, scope management comes into play. If you have done a good job of stakeholder management, and of constantly communicating what the deliverables are and the progress toward those deliverables, this review will hopefully be a "check the box" discussion.

As many programs will span multiple years, it is common to have changes in stakeholders mid-stream; with new stakeholders come new ideas and frequently different definitions of success. The goals and objectives, along with success criteria, should be managed in the earlier phases, with each introduction of a new stakeholder.

Transition/Ongoing Support

The other area related to expectations are more forward looking: how will benefits from the program be sustained? What should stakeholders expect from a transition perspective? Areas included in this are:

- Resource management—who will be responsible for ongoing support? What are roles and responsibilities moving forward, and what is the timing of the transition?
- Training—if training is required, who is responsible for training, and what is the required time commitment and investment?

- Budget—who is funding the program once it is in an operational state?
- Change management—does the program result in change that will impact the organization and need to be communicated?

Depending on their role, stakeholders will have expectations around all of these areas. Having a thorough transition plan will ensure these expectations are met. This will help ensure the last impression of the program is a good one, so when a customer looks back on his or her experience, the customer will feel that the program was successful, and you were successful as the program manager.

PROGRAM MANAGEMENT SKILLS AND TIPS

- Facilitation
  - TIP: Hold a post-mortem session and discuss any lessons learned. For a productive session, make sure everyone who attends understands the purpose of the session—it is not a time for finger pointing, but for honest, open feedback. Be sure to not just collect what could have gone better; also discuss what went well. This feedback will then help future programs run more smoothly.
- Team Motivation
  - TIP: Celebrate! Even if it is something as simple as a pizza party, people appreciate recognition, and it will go a long way in helping build effective working relationships for the future. A celebration is a good opportunity to highlight successes and provide recognition at the same time.

RELATED PROGRAM METHODOLOGY

As discussed above, holding a post-mortem/lessons-learned session is a critical step in program management that can easily be overlooked. There is a lot to learn from every program, and these data can help not only yourself but other program managers in your organization.

In addition to a lessons-learned session, holding a program review with all key stakeholders is an effective venue to confirm that goals and objectives were met (and benefits have truly been achieved).

SUMMARY

In summary, expectations need to be managed beginning with the first breath of an idea. To manage customer expectations, you must be constantly communicating. It is critical to talk to your customers, whether you are in the setting expectations stage or in the monitoring and controlling expectations stage. While there are various pieces of program management methodology used to help manage expectations, and a different emphasis by phase, the common thread comes always points back to strong communications. Hopefully the tips provided in this chapter will help guide you as a program manager to know what to watch out for when and how to avoid some of the common pitfalls.

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10

Communication and Its Power at the Program Level: Managing Power Brokers with Effective Communication

Oluwatosin Agbetusin, PMP, PgMP

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INTRODUCTION

Communication management is one of the key skills required for a successful program. It is important for a program manager to master the art and practice of effective communication to succeed in the field. The management of projects involves 70% to 80% communication, and its value is even more significant at the program level where

stakeholders, complexity, and delegation often increase geometrically. If program managers spend most of their time communicating, then it is critical to ensure this skill is used to manage the program power brokers effectively and most importantly to bring them to support the program and its plans.

With the explosive growth of information and communication technology in the last ten years, the channels and challenges of communication have also taken on additional dimensions, which has reduced the time that is available to pass across a message in a world where many stakeholders think in tweets, slides, simulations, and podcasts.

Program managers should spend time thinking about the influencing opportunities they have with their stakeholders when communication and how to evolve from sharing information to communicating effectively and stimulating action in a desired direction. Below are a few thoughts for consideration:

- What use is an excellent 50 page program report document sent to a sponsor who never reads it?
- How effective is a well-structured program presentation to the program team members who either are not paying attention or do not understand the purpose of the presentation?
- What value is a brief summary report or document to a detailed and technically inclined program stakeholder? He or she obviously wants more information!
- How do we pass across the right message using the right medium for each stakeholder?
- How do we provide an effective communication strategy that ensures that each stakeholder is involved sufficiently in the program with a sense of purpose to drive achievement of program benefits through effective communication since within a program, stakeholders often are in various time zones, are from different cultural backgrounds, and have different attitudes toward the program?

To manage the power brokers effectively with the power of communication, program managers must be able to communicate the right information, at the right time, to the appropriate stakeholder (internal or external), using the right format and most effective medium.

For a program manager to get the buy-in of key stakeholders, he or she would need to be able to clearly communicate his or her thoughts and

provide the important information. Communication is an integral skill that links with other skills required to ensure a successful program such as negotiation, stakeholder management, influencing, motivating, conflict resolution, and problem solving.

"Program Communication Management is the Knowledge Area that includes the activities for ensuring timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of program information" (PMI®, 2008, p. 141).

Stakeholders in a program are individuals, groups of people, and organizations (internal or external) who might be adversely or positively affected by the outcome of a program directly or indirectly. While there might be several stakeholders in a program, some of these are referred to as key stakeholders because they have more significant influence or power and/or are more impacted by the outcomes of the program. These key stakeholders are the main focus of this chapter and herein referred to as the power brokers.

This chapter covers how to determine the power brokers on a program, understand and use their diversity, build a close rapport with them, and manage them using a combination of a communication strategy, strong listening skills, a strong personality, and constant engagement.

DETERMINE THE POWER BROKERS

First, it is necessary to identify, map, and segment program stakeholders to have a clear view of the program's power brokers as we would need to spend more time and effort on managing them than other stakeholders. A common approach is the 80/20 Rule, also known as the 'law of vital few' which can be applied in this context that 80% of the power and influence in a program reside with 20% of the stakeholder (the power brokers). The Power/Influence grid in Figure 10.1 is a popular, yet simple way to determine who the power brokers really are. The program manager groups his or her stakeholder's according to their power and interest in the program to determine the power brokers that need to be managed closely.

Once determined, most of the communication effort needs to be channeled to this group. They have high interest and high power, which would be essential to the success of the program if they are positive toward the program and remain so during the program's life cycle.

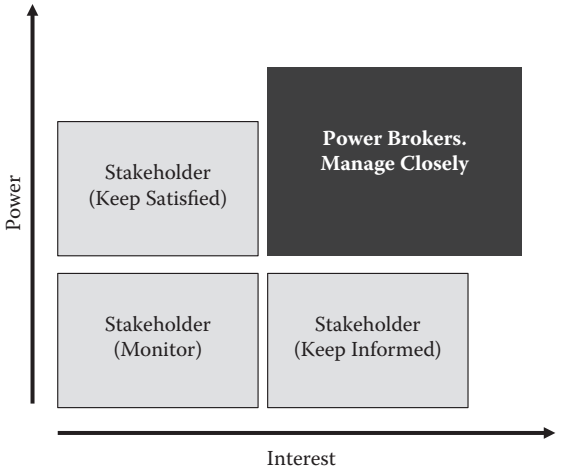


FIGURE 10.1
Power and interest grid.

It could come as a surprise that some of these power brokers could have a preference for the failure of the program either in totality or in part, and it is imperative to identify such motives early and manage them closely.

Another twist to this is that a power broker might be in favor of the program but have an interest in changing program delivery timelines, scope, or specifications in a different direction for personal, financial, or other reasons. This makes the process of identification a detailed one, and the program manager has to handle it as such.

Checking who is in the power broker group and what his or her objectives are is an iterative process that should be performed throughout the program. As a program moves from one phase to the next, it is possible that the power brokers might have changed, and it is important for the program manager to take note of these changes if and when they occur.

HAVE A CLEAR AND ACHIEVABLE STRATEGY

Once the program manager determines the "who is who" among his or her stakeholders, he or she should have a clear and achievable communication strategy designed and tailored specifically for the program with the

aim of managing the power brokers and their expectations, determining their influence, and resolving their issues and conflicts in the program.

The communication strategy should contain an explicit plan and strategy to disseminate and ensure prompt delivery of information to the right stakeholders at the right times using the most appropriate approach, method, and technique. The program manager and the team should ensure that the communication strategy aligns with the organizational communication strategy and also should be organizationally driven.

To ensure the strategy is still effective in managing the communication expectation of the power brokers, the program manager should include in the communication strategy an audit to assess its continuous effectiveness. The audit should be carried out as often as possible but at a minimum before the start of a new phase in the program life cycle.

To ensure the goal of the communication audit is achieved, it should be performed by a key member of the power broker group who is:

1. Actively and constantly involved in the program and its communications
2. Positive toward the program success in achieving its intended benefits
3. Objective, analytical, and unbiased

The program manager should determine the best person to serve as the communication strategy auditor by consulting with key members of the program team. If possible, the role should change for each audit carried out in the program life cycle for greater objectivity and to achieve greater buy-in to the program.

COMMUNICATION AND DIVERSITY OF PROGRAM STAKEHOLDERS

> Great! I have identified my program stakeholders, I have prepared the required documentation, and since they are key stakeholders, they should understand it and provide required responses if they have any. Done!

Really? No!

This is a key area in which many program managers fail in managing their program power brokers effectively. It is important to understand cultural differences, values, perspectives, work styles, and communication styles of these stakeholders. This becomes more important in programs that span geographical locations, cultures, and time zones.

Communication is a two-way process, and effective communication with each of your program stakeholders is important, as it would help to create a better relationship with them and get them to support your program. This does not mean a program manager needs to create 20 versions of the same communication to 20 different stakeholders, but he or she must understand the particular needs of the individual stakeholder in terms of communication requirements and manage them appropriately.

It is important that the program manager properly examines the stakeholder's areas of interest before planning and designing the communication content, type, and mechanism. A program manager would not be expected to be communicating to senior executives and including all the program's technical terms/words or presenting all the program financial details and values to a detailed technical power broker who is not financially committed to the program. Tailoring communication by understanding the diversity of key stakeholders will help get the required buy in and support through clear understanding and considering individualism.

> Aristotle said "if communication is to change behavior, it must be grounded in the desires and interest of the receivers."

Here are some guidelines to consider, followed by Figure 10.2:

1. Determine what the individual power broker needs to know: Every stakeholder would have special interest in certain information; a program manager knows these special interests and disseminates the information appropriately.
2. Determine which of the power brokers needs to know what first.
3. Determine what they should NOT know (yes!): Certain information should not reach certain power brokers at the same time. This is not a case of a lack of professionalism, but its focus is on ensuring unnecessary information is not communicated.
4. Determine when they should know: Knowing how to communicate is as important as knowing when the information should be disseminated.

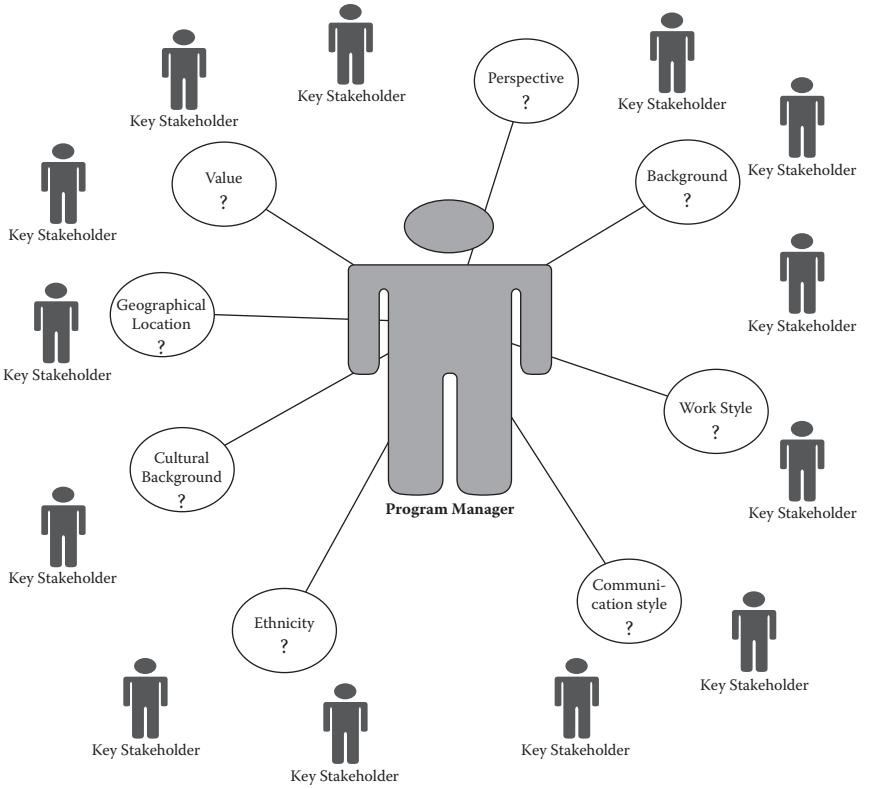


FIGURE 10.2
Stakeholder diversity considerations.

5. Determine the best way to present it: Communication and information are critical; knowing the best way to present the information should be strategically analyzed by the program manager.
6. Determine how often you should communicate with each of the power brokers individually.
7. Determine the level of detail that needs to be included. Some key stakeholders do not see value in extensive detail, while others appreciate and encourage it.
8. Determine the best person to deliver the information. It does not necessarily have to be the program manager. In some cases, the 'best person' might actually be external to the program organization or even external to the performing organization itself.

GETTING IT RIGHT: COMMUNICATION TYPE, STRATEGY, AND CHANNEL

Verbal or Non-Verbal? Formal or Informal? A Mixture or a Model? Program managers need to determine what is most appropriate. In programs, there are instances where some stakeholders prefer written reports, while others prefer verbal briefings (e.g. meetings, seminars, and presentations). There is nothing like the 'most acceptable' or 'generally accepted' communication type or strategy. Choosing the right form of communication is based on an individual, and it is important that a program manager is able to determine what works best for each of his or her power brokers.

As shown in Figure 10.3, the program manager can decide to use:

1. Formal written communications: When writing those formal documents, emails, memos, or letters, keep in mind the different power brokers:
   a. Am I convincing enough to get their buy-in?
   b. Is the information precise and clear enough to all and to ensure I am being professional? Your program power brokers would most likely not be on your side if you are seen to be unprofessional.
   c. Do I need to have different versions to meet the needs of the stakeholders?

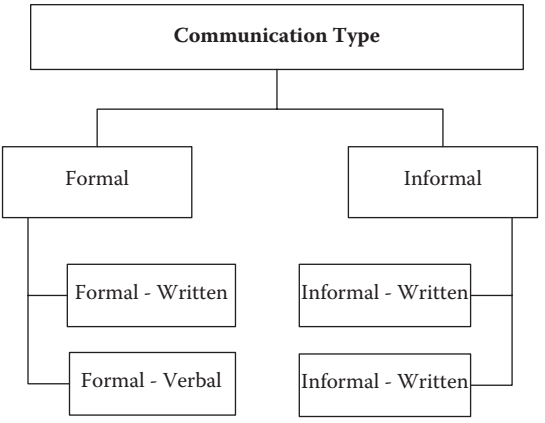


FIGURE 10.3
Types of communications.

   d. How persuasive am I?
   e. Would I be generating controversy instead of support?
2. Formal verbal communications: During the formal meetings and presentations, you have a goal to persuade, to be clear, to present the details, and to win the power brokers to your side. Consider the following tips:
   a. Read the body language to gauge support
   b. Make quick necessary adjustments
   c. Take note of the voice characteristics (para lingual)
   d. Take note of the effect of spoken language and choice of language
3. Informal verbal communications: This includes non-formal communication. It is one of the better ways to build interpersonal relationships and rapport with key stakeholders and to obtain informal feedback, which is often quite valuable. Program managers must learn to use the power of informal verbal communication when dealing with the power brokers.
4. Informal written communications: This includes all non-legal documents, notes, informal emails, pre-contract documents, even instant message-chats. Program managers can use the informality of these documents to measure and gain support of the power brokers.

Whatever communication type is selected, it is important the program manager facilitates and encourages two-way communication between him or herself and his or her power brokers. Also the program manager should ensure that the selected communication type/channel is consistent with the organizational policies, guidelines, processes, and norms.

START WITH THE MOST IMPORTANT

The goal is to get the power brokers buy in and support; therefore, a good strategy is to begin communication with what is most important or brings the most benefits to the power broker. This might not necessary be the latest news in the program or what is considered the most important to the program manager or the team. Often, determining what brings the most benefit to a key stakeholder might vary, may be easy to figure out, or may be difficult to define.

However, once a program manager can determine what is most important, then it would be easy to persuade and influence the power broker through his or her own self interest. Summarily, a valuable strategy is to begin with the most important to the power brokers and gradually move to the least important.

USE THE COMMUNICATIONS LOG: CONSTANTLY UPDATE IT

During the course of a program, information requests and information dissemination are constantly ongoing and can become a major part of a program manager's workload, more so, as some power brokers leave and are replaced by others with inadequate information transfer, and while other stakeholders either join afresh or evolve from a different category to a power broker status, there is a need to recognize the information that has been distributed. This is where a communication log is extremely helpful.

Program managers should have, keep, and constantly update a program communication log, which should show when, to whom, why, how, and what has been communicated. This would be most useful when the power brokers change, and there is need to update the new "powers"; see Figure 10.4.

Have you or any member of your program team ever faced that situation where you sent a program report out and missed a few of your key stakeholders only to discover the mistake too late? Or has your program team

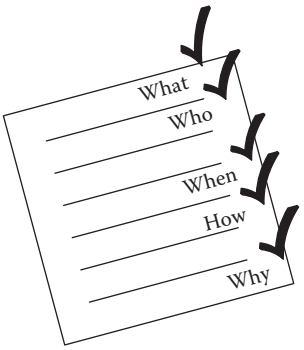


FIGURE 10.4
Program communication log.

been in a situation in which they could not ascertain when an important report was sent out to stakeholders and did not have a log of it?

Program managers also should keep up to date on the following:

1. Recognizing if there are changes in the power brokers or changes in the communication requirements of existing power brokers
2. Identifying if there are new key stakeholders
3. Seeing whether there are any changes in the interests of existing power brokers
4. Determining if there are any changes in the power broker's expectations
5. Recognizing if changes in geographical locations could affect communication

COMMUNICATIONS AND RAPPORT BUILDING: DOES MAGIC!

Communications through rapport building does magic when managing the power brokers!

Getting your program power brokers to support your program involves some rapport building using communication; this would help when dealing with difficult issues and when trying to influence and negotiate with these stakeholders. Rapport is about creating a connection and bringing other people closer to understand you, building harmony, and having a close relationship with others. Building rapport is one of the first essential steps to communication, which is the main job of a program manager.

Communication builds rapport when your key stakeholders get connected with you when you are communicating with them. However to do so, you may need some understanding of their social styles. Building rapport can be done through emails, blogs, instant messages, social media, or informal chats to list a few, all which are part of communication. By using communication to build rapport, you also are establishing trust, openness, and confidence.

Managing your program power brokers goes beyond the well written reports and presentations; you can investigate their personal communications styles, social life styles, body language, what generally motivates them, and the best way to empathize, influence, and negotiate with them. Using the power of communication to build rapport with these power

brokers will enhance your relationship with them, your ability to influence them, and get their support for your program.

MANAGE THE COMMUNICATION CHANNELS

A program might have several key stakeholders who are in the 'Power Brokers' grid, hence the communication channels might increase significantly and need to be properly managed. For any group of program stakeholders, there are n(n-1)/2 communication channels, which the program manager needs to manage; see Figure 10.5.

This includes the power brokers and the other stakeholders. Knowing the complexity and numbers of communication channels in program will help a program manager determine how to manage these channels properly.

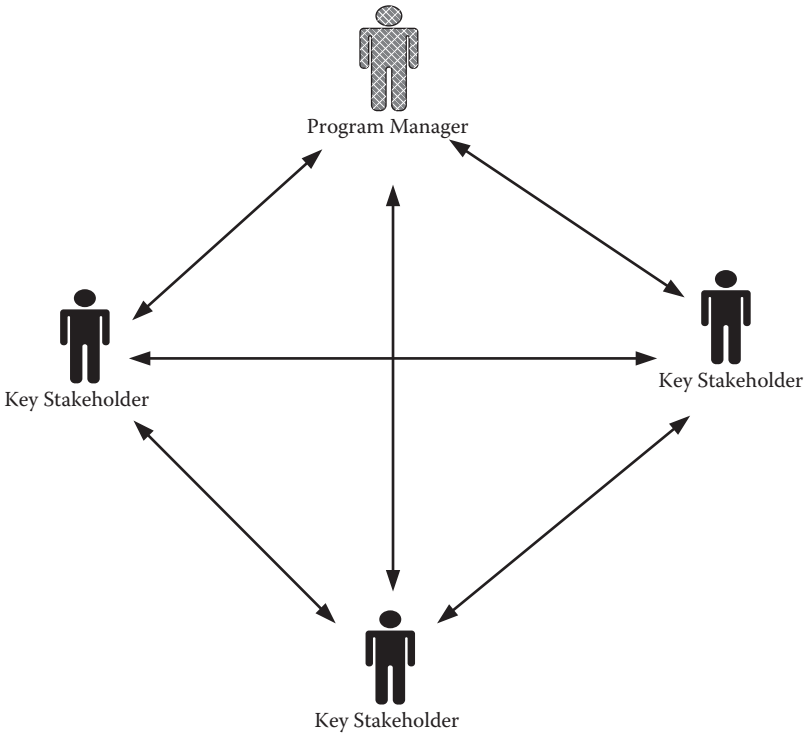


FIGURE 10.5
Four program team members, six communication channels.

The larger the number of key stakeholders, the larger the number of channels and complexity, but if properly synchronized and managed with the communication log and some communication delegation to other members of the program team, it can be an easier and more manageable process.

LISTENING TO WIN AND INFLUENCE

It is popularly said that we have two ears and one mouth for specific reasons. Listen more!

While growing up, most of us were taught to talk more than listen, which has led people to being keen on expressing their opinions, providing feedback, and responding to issues quickly. However, the most important part of a two-way communication is listening and understanding the other party, not just listening but actively listening and showing it.

Listening to your power brokers, getting feedback, understanding their concerns, and learning to empathize with them helps improve and build communication, trust, and confidence in you as a program manager. As soon as you are seen as a good listener, then you would constantly get feedback and engage freely with the "powers that be." Capitalize on your listening ability to gain trust and use it when you have to fix issues, influence them, or get important decisions made in your favor by negotiating or seeking the full support of your power brokers.

People generally want you to listen to them. Program managers need to show they are 'visibly' and 'actively' listening and show that they understand the key stakeholders' perspectives. It is also important that the program manager initially focuses on understanding the interests of his or her key stakeholders, after which he or she can express his or her own opinions and try to be understood; see Figure 10.6.

CONSTANT ENGAGEMENT AND THE COMMUNICATION BRIDGE

Constantly engaging the power brokers with some form of communication (either formally or informally), even when nothing much has changed in the program, is an excellent way to manage your key program

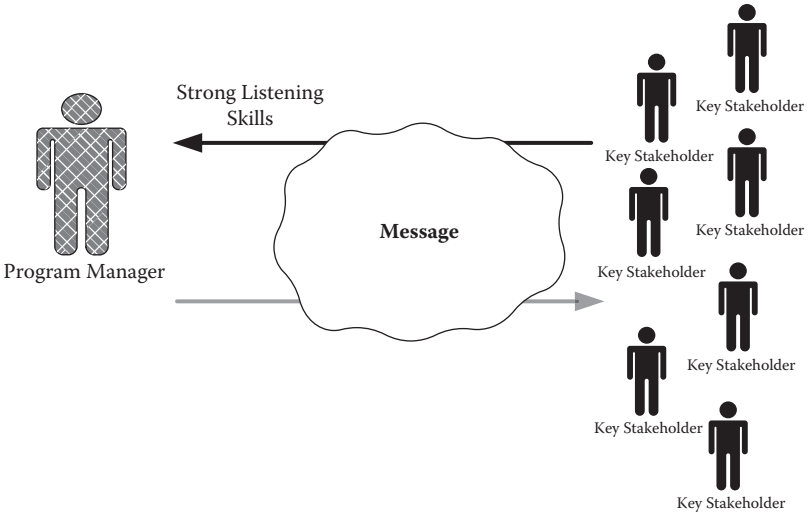


FIGURE 10.6
The importance of listening skills.

stakeholders effectively. The momentum and communication bridge need to be kept alive and active throughout the program.

> The current stage of the program does not require any form of formal or informal communication; therefore, there is no need to communicate with any stakeholders.
>
> WRONG!

What about a phone call? A quick email or chat with your power brokers to just get to understand their general feelings of the program, or a chat over a drink (provided its not considered unethical within the context of the culture and legal considerations) to understand general concerns, seek their opinions informally, or to just understand them more.

If you use this approach properly, cleverly, and professionally, you are on your way to getting even the most difficult key stakeholder on your side of the court. Appropriately engaging and systematically communicating with the key stakeholders is important in any program. Communications and constant key stakeholder engagement should be performed as a continuous and iterative process, in which these key stakeholders are allowed to play the active roles; see Figure 10.7.

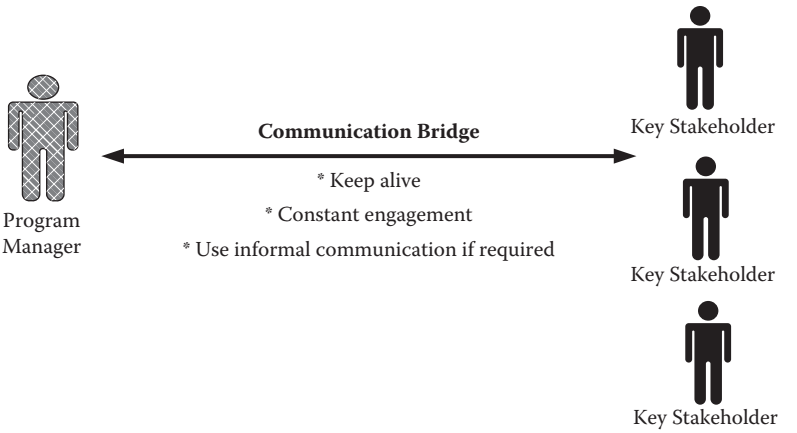


FIGURE 10.7
The communication bridge.

BUILD A STRONG PERSONALITY: FOCUSING ON THE POWER OF NON-VERBAL COMMUNICATION

To gain and sustain the support of power brokers, the program manager needs to have a strong blend of good communication skills and a strong personality. Create and cultivate a positive impression with your power brokers through the building of a strong personality, using the power of non-verbal communication. This positive impression might be the key ingredient to getting the required support needed from the program power brokers during the entire program or at key decision points within it.

A strong personality projects self confidence, openness, clarity, passion, and sincerity. With over 80 percent of communication being non-verbal, your key stakeholders are surely not only listening to your verbal communication but are constantly 'feeling' and watching your non-verbal communication and evaluating you accordingly. A program manager should learn to use the power of the facial expression, body posture, tone of voice, quality and pitch, eye contact and engagement, conversational pace, rhythm, gestures, and the architecture of his or her message to win the confidence of his or key stakeholders. Remember, even when you are silent, you are still communicating non-verbally, and a power broker is probably 'listening' and gauging the level of support you should get based on his or her perception of you.

KEEP IT SIMPLE

Communication to your power brokers must be clearly understood and convey the necessary message. It must also fulfill its goal: to gain support, influence, negotiate, or alignment with regard to a particular course of action. To achieve this goal, the program manger should keep communication simple; avoid unnecessary acronyms not understandable to all especially when the communication has not been streamlined for a particular group. Reports, presentations, phone calls, and emails should convey the desired message in the simplest way possible, while all other detailed information is prepared and made available on request by the respective power brokers.

SUMMARY

This chapter has focused on the necessity of managing the power brokers throughout the program life cycle using effective communication. To summarize, below is a sample checklist that a program manager and his or her team can use to ensure communication is still effective in getting the required support and influence. While this is not an exhaustive checklist, utilizing it will help get the program managers to think in the right direction.

1. Have I determined what they need to know?
2. Are they getting the right information at current stage?
3. Do I need to determine which of the power brokers knows what first?
4. Have I determined what they should NOT know (yes!)?
5. Have I determined when they should know?
6. What is the best way to present the communication to them?
7. How often should I communicate with them?
8. Have I determined the level of detail that needs to be included?
9. Who is the best person to deliver the information or manage the communication?
10. How many communication channels do I have?
11. Are there new stakeholders we need to communicate with on the program?
12. Is there a change in their interest that affects communication requirements?

13. Are there new communication expectations?
14. Have there been any geographical location changes that could affect communication?
15. Am I getting feedback about program communication from the stakeholders?
16. Are we using the right technology to convey information?
17. Are the acronyms in use in communication known to all?
18. Are the lists of acronyms updated constantly?
19. Are the individual communication requirements of each stakeholder met?
20. How are we gathering information? Do we need to change the strategy?
21. Is the communication distribution mechanism appropriate? How often should we review it?
22. Are we keeping a log of all communication?
23. Does the program's communication strategy align with the organizational communication strategy?
24. Is the best channel being used?
25. Is the effectiveness and value of communication being measured?
26. How can the value of the communication be improved?

With good management of communication with your stakeholders, you would be:

1. Building trust with the decision makers and power brokers
2. Establishing and building confidence in yourself
3. Showing transparency
4. Creating awareness and visibility of your program
5. Influencing the stakeholders
6. Showing professional competence and ethics

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11

Program Governance: Toward a Conceptual Framework

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INTRODUCTION

Organizations form programs to achieve strategic objectives that help them grow and perform more effectively and efficiently. The importance of these initiatives is such that an oversight function is required from the executive management, which has a role to monitor the program to ensure that things are on track, support the program when it is required, and control different aspects of program if things seem to go in the wrong direction. These dimensions in unification form the core of program governance.

The need for program governance comes from the fact that there are certain aspects of the program that are not under the direct control of the program manager, and he or she requires support from the program governors to ascertain successful delivery of the program objectives. Along with that the program governors have to ensure that the program activities are being carried out as planned, and any major deviations are accounted for and approved. In the coming sections, for the sake of clarity, all governance entities or roles (such as steering committee, program board, program sponsor etc.) will be grouped together and referred as program governors.

This chapter starts with a review of governance and its various forms. The discussion then moves toward governance of programs, its roles and functions, after which different mechanisms of governance are reviewed. A summary concludes the chapter, where a conceptual framework of program governance is proposed.

GOVERNANCE

Governance is about creation of an environment under which actors behave within defined boundaries. It, however, does not manage the actions and activities of actors; rather it provides them with framework under which they can determine their strategy and actions.

Governance has origins from the Greek verb 'κυβερνάω' [kubernáo] which means to steer. It was later passed on to Latin, and the word 'gubernare' was created. Stoker mentions that the word governance is being generally used as a synonym to government in the sense that governance is a better managed form of government (Stoker 1998). Müller states that the original concept of governance was more related to steering of

countries, but it was later applied to steering of organizations and acts as a relationship between organizations and programs/projects (Müller 2011).

Miller and Hobbs look at governance as an oversight function (Miller and Hobbs 2005), which means that the governance institutions, such as a steering committee, should not manage the day-to-day operations of the entities they are governing; rather they should oversee and guide those activities. Creation of an organizing, decision-making and control framework, where ordered rule and collective actions are the foundation, turns out to be the basic objective of governance (Stoker 1998). Müller looks at governance from a perspective of roles and responsibilities and mentions that "Governance defines the processes, roles, and accountabilities of the managers in the different governance institutions" (Müller 2010a, p. 5). This results in creation of an environment in which desirable behaviors, which affect the program and its related processes and outcomes, are the norm.

Governance is referred as "the use of institutions, structures of authority and even collaboration to allocate resources and coordinate or control activity in the society or the economy" (Klakegg, Williams, Magnussen and Glasspool 2008, p. 28). Stoker takes into account the bounded rationality of humans and comments that "Governance means living with uncertainty and designing our institutions in a way that recognizes both the potential and the limitations of human knowledge and understanding" (Stoker 1998, p. 26). The Office of Government Commerce (OGC) terms governance as a framework that defines the accountability and responsibility of people who are driving the organization as well as the structure, policies and procedures under which the organization is directed and controlled (OGC 2011).

Where there are multiple entities involved, governance mechanisms can help in identifying roles and responsibilities of each one, and more importantly, it can help clarify the power dependency between the entities (Stoker 1998). Stretton defines governance as a mechanism "that is concerned with oversight and beneficial influencing of the performance of the managers who are responsible for the work" (Stretton 2010, p. 12).

Governance can be defined on many levels such as international governance, public governance, corporate governance and project/program governance (Klakegg et al. 2008). Figure 11.1 defines these levels and their relations.

International governance has to do with institutions set up to settle matters where several states are involved, e.g., the United Nations or the World Bank (Klakegg et al. 2008). In case of international governance,

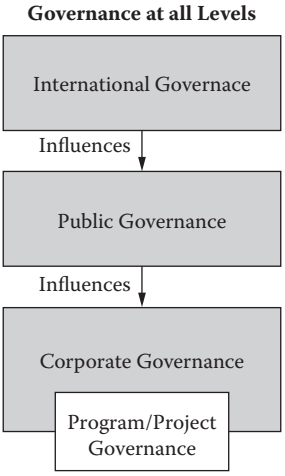


FIGURE 11.1
Governance at all levels.

the concept of self-governing networks can be applied where the states agree to behave under certain norms with rules and regulations imposed by them on themselves (Stoker 1998). These regimes are formed by the network entities in order to resolve concerns of mutual interest and conflicts without resorting to undesired means. The issue of accountability arises when there is sharing of resources among participants of such regimes. This can however be resolved to some extent by creating some form of formal governance mechanism on top of the regimes (Stoker 1998).

Public governance is generally for initiatives and governance activities at the national level. It can further be divided into administrative governance, people governance and political governance. Klakegg et al. mention that public governance has two subsystems: namely political and administrative (Klakegget al. 2008). Public governance is defined by Organisation for Economic Co-operation and Development (OECD) as "Governance refers to the formal and informal arrangements that determine how public decisions are made and how public actions are carried out, from the perspective of maintaining a country's constitutional values in the face of changing problems, actors and environments" (OECD 2005, p. 16).

Stoker mentions that the current approach at the national level has resulted in blurring of boundaries between the public and private sector. This resulted in creating specialized governance mechanisms, as the actors are drawn from both sectors (Stoker 1998). This also resulted in a

situation where "Responsibilities that were previously the near exclusive responsibility of government have been shared" (Stoker 1998, p. 19). The downside of this shared responsibility may result in either party shifting the responsibility and blame on each other. Along with this issue, if the major activities and responsibilities are owned by the private sector, then the legitimacy and need for public sector or government can come into question (Stoker 1998).

Governance is also carried out at an organizational level, which has to do with governance regimes set up in organizations that ensures that the investment decisions are made correctly, the decisions are executed properly, and produce the required results. This is known as corporate governance, and O'Sullivian defines this concept as "system of corporate governance shapes who makes investment decisions in corporations, what types of investments they make, and how returns from investments are distributed" (O'Sullivian, 1998, p.1).

An organization generally meets its strategic objectives outside the scope of normal operations through programs and projects. These initiatives are the basic means of implementing the strategy defined at the executive level and are generally managed by program/project managers. However, there are areas of management and control that are out of the domain of the influence of managers (Crawford, Cooke-Davies, Hobbs, Labuschagne, Remington and Chen 2008), come under the responsibility of executives, and are implemented through governance regimes. This type of governance is the topic of this chapter, and will be discussed in greater detail in the coming sections.

DEFINING PROGRAM GOVERNANCE

There is limited literature available on the subject of program governance, thus it is important to define this term so that the foundation of this concept can be established for the coming sections.

Ward defines program governance as "process or set of processes used by an organization to define, develop, manage, monitor and close-out a program. It is primarily aimed at ensuring that the program's objectives are met and benefits delivered, and it includes a process for terminating a program if it appears the program will not meet identified objectives and benefits" (Ward 2008, p.338).

Ward's definition is in alignment with the manner Hanford defines program governance who states that "Governance, for a program, is a combination of individuals filling executive and management roles, program oversight functions organized into structures, and policies that define management principles and decision making" (Hanford 2005).

There has been some significant work carried out by Project Management Institute (PMI®) related to program governance. PMI® mentions that program governance, which fits within the overall framework under which programs are managed, provides the program team with the management framework that constitute process, policies, structure and decision-making models (PMI®, 2008a). Along with that the program governors provide support to the program and monitor and control the progress of the program throughout its life cycle.

Looking at the definitions discussed above we can come up with an all-inclusive definition of program governance that is relevant to our discussion in this chapter:

> Program governance is an oversight function that encompass the program life cycle and provides the program team with a structure, processes, decision-making model, and tools for managing the program, while supporting and controlling the program in order to ensure that the program delivers its benefits.

WHY DO PROGRAMS NEED GOVERNANCE?

The governance of a program follows a similar pattern to that of corporate governance; however, the focus can be a bit different because of the temporary nature of these initiatives. Program governance starts with definition of the objectives for the program and encompasses support and control needed to meet those objectives throughout the program life cycle.

The way a program proceeds and succeeds is not entirely in the control of program manager and program team. This situation is because there are various influences, which are outside the program manager's domain and need intervention from the executive management. There might be additional influences, such as changes in organizational strategy, which have to be communicated to the program, so that the program remains aligned to these changes. That is the reason why program managers need

the program governor's directions, support and control to make the program successful.

Programs require a management and decision-making framework, which can assist the program team to administer and manage the program during its life cycle. Development and implementation of this framework is another facet that the program governors address. Program governance provides the program management team the necessary structure, processes, tools and techniques, as well as a decision-making model, which are required for the program to execute and deliver the required benefits to the organization. This framework assists the program management team to work in a standardized manner, while ensuring that decisions are taken at the appropriate level of authority without creating cumbersome bureaucracy.

Another reason for setting up governance frameworks in place is due to the supposition that organizations execute multiple initiatives at the same time. These initiatives consume time and resources of the organizations and are means of achieving strategic organizational goals. Thus they should be governed by some sort of an organizational entity, which ensures that inter-initiative constraints are resolved, each initiative gets the required support, and is properly monitored and controlled (especially when things go wrong) by the program governors during its life cycle in order to increase its chances of success.

GOVERNANCE INSTITUTIONS AND ROLES

The bodies and entities for governance, and the governance structure, may differ from organization to organization, and types of initiatives that have to be governed. Müller has taken a containment perspective when he suggested three important entities when he referred to governance of such initiatives. He states that program management acts as a governance entity for projects, whereas portfolio management acts as a governance entity for projects and programs. The portfolio management entity reports to the steering committee, which is ultimately responsible for the success of the initiatives. In some cases the steering committee shares the governance responsibility with the portfolio manager, especially in cases where issues and decisions cannot be resolved at the portfolio level (Müller 2010a).

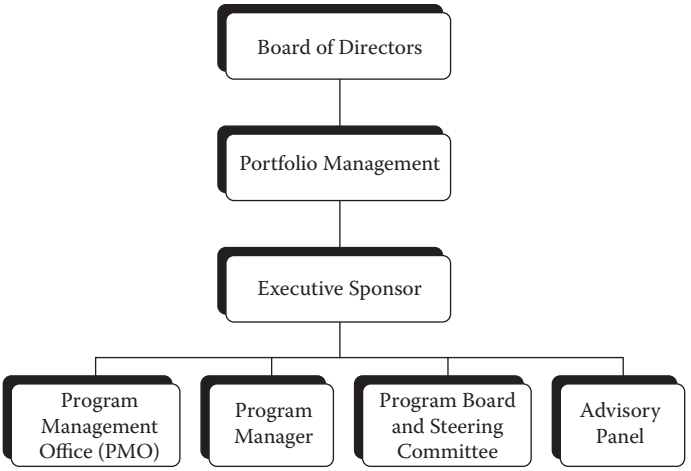


FIGURE 11.2
Governance structure.

Based on experience, a typical governance structure for a program is shown in Figure 11.2.

Even though this chapter generalizes these entities, under the role of program governor, it is important to discuss the governance entities and roles in detail. The following sections discuss these entities and significant roles, which play a major part in program governance.

Board of Directors

The Board of Directors is responsible for setting up the governance mechanism in the organization. It is also the board's responsibility to drive the organizational strategy, along with the executive management, which is responsible to define and execute the strategy.

Defining what organizational entities are required to govern projects and programs comes under the responsibility of the board. Müller concurs with this concept, and states the decision to set up steering committees, program/project boards and other governance entities is with purview of the board (Müller 2011).

The responsibilities of these entities need to be defined and communicated. At the same time the mechanisms of governance, such as the frequency and content of audit activities, reporting frequency and format, stage gate reviews and their objectives need to be decided. This requirement, or decision, also comes from the board, which has the ultimate

responsibility of creating an appropriate governance environment in which programs and projects can flourish and succeed (Müller 2011).

Portfolio Management

In case projects and programs are strategically aligned, and have some relationship or dependencies amongst them, it is best to align them under strategic portfolios. All portfolios have to be managed in order to achieve the strategic objectives with which the portfolio is aligned. This approach will include defining, selecting, aligning, as well as realigning, coordinating, and terminating portfolio components in order to achieve the higher-level strategic objective assigned to them.

Portfolio management as defined by PMI® "is the coordinated management of portfolio components to achieve specific organizational objectives" (PMI®, 2008b, p. 6). The Association for Project Management (APM) defines portfolio management as "Portfolio management is the selection and management of all of an organisation's projects, programs and related business-as-usual activities taking into account resource constraints. A portfolio is a group of projects and programs carried out under the sponsorship of an organisation. Portfolios can be managed at an organisational, program or functional level" (APM 2009, p. 8).

The program and projects within a portfolio are temporary; however, portfolios are, generally, permanent organizations within parent organizations, which are focused toward certain organizational strategic goals or objectives (Turner and Müller 2003). The role of portfolio management in governance is more related to governing the priority of initiatives, which may affect governance, management, and planning of projects and programs (PMI® 2008b; Müller 2011). PMI® mentions that the phase-gate review, which is a governance mechanism, for programs initiated within a portfolio, should be carried out in context of the related portfolio (PMI® 2008a). This approach makes portfolios an overarching entity that governs programs.

Executive Sponsor

Executive sponsors act as a link between the permanent organization and programs, where they provide governance oversight required by the parent organization and obtain support for the program from the corporation. The executive sponsor is generally a senior executive who leads a

business unit, which is a major program beneficiary. There is also a possibility that multiple executives share this role, however, in such cases there would still be a senior executive sponsor who will act as a final decision maker (Hanford 2005). He or she also provides the resources to the program, and its constituent projects, in order to ensure successful delivery of program benefits (PMI® 2008a).

Some researchers have differentiated between the roles of the owner and sponsor. Turner mentions that owner "provides the resources to buy the asset and will receive benefits from its operations" (Turner 2006, p. 3), whereas the sponsor "will channel the resources to the project on the owner's behalf" (Turner 2006, p. 3).

OGC and APM refer to Senior Responsible Owner (SRO) as the executive sponsor for projects and programs (OGC 2007; APM 2007). OGC, while referring to the gate review process, mentions that the ownership of the implementation of recommendations for improvement lies with the SRO. The SRO must be a senior person who will ensure that the program meets the required objectives and that the execution is managed properly (OGC 2007). OGC mentions senior manager ownership and leadership as one of the criterion for successful delivery of programs and projects (OGC 2007), whereas, APM defines the lack of clear senior management involvement as a common cause of failure (APM 2007). The executive sponsor "owns" the program and works closely with the Program Manager to ensure the program is progressing according to plan and is receiving the appropriate support from the organization.

Program Management Office (PMO)

The PMO plays different roles in different organizations. Müller mentions the particular role of the PMO depends on the organizational requirements from such an entity (Müller 2011). PMOs can play a support function where they set up the program management standards and train and guide the program management teams to implement those standards. This is a tactical role where the focus of PMO is governance through behavioral control.

Jainendrukumar states that typically PMOs includes functions, which are related to a single program/project; however, the PMO can become more effective if it includes functions that impact program/project management at the organizational level (Jainendrukumar 2008). Typical functions of a PMO can include (Jainendrukumar 2008):

1. Practice management, which is related to setting up the processes and practices for program/project management and governing its implementation.
2. Infrastructure management, which includes functions related to program/project governance and assessment. This also includes providing tools, facilities, and equipment to the team.
3. Resource integration, which is focused toward providing support to the team in terms of resource pool management, team development, and training.
4. Technical support management, which includes functions related to mentoring of teams, assistance in planning, audits, and providing support in case of recovery.
5. Business alignment, which is a more strategic function and is related to management of portfolio of programs and projects as well as managing external relationships on behalf of the programs and projects.

There may be other cases where PMOs act as reporting entity where it responsible to:

1. Receive reports from individual projects within the program
2. Analyze and compile reports at the program level
3. Report the program progress to various stakeholders

Müller also refers to PMOs, playing the strategic and business alignment role, as strategic PMOs, which are engaged in "stewardship of portfolios of projects" (Müller 2011, p. 308). Such PMOs work with the portfolio manager in terms of providing reports to them for better decision making on projects and programs; thus, their focus is governance through outcome control (Müller 2011).

Program Board and Steering Committee

The concept of program boards/steering committees comes from the corporate governance function where the board of directors sets up such groups to work closely with the management team in order to support in execution and management of initiatives (ITGI 2003). Unlike top-level strategy committees, these steering committees or program boards have a more hands on approach where they are involved more closely with the program management team in order to guide and support them in their work.

Programs, because of their magnitude, typically impact multiple business units and stakeholders. Steering committees provide these stakeholders to sit together in order to provide direction to the program during its life cycle. Issues, risks, and decisions escalated from the program level generally reach the steering committee where different representatives work together to reach an agreement, which is approved hopefully with consensus. Such steering committees are headed by a program board director, who typically is the executive sponsor. Hanford mentions that the role of these committees is mostly to direct and provides advice to the program (Hanford 2005).

Advisory Panels

An interesting concept to govern programs is creation of Advisory Panels. Pells refers to these panels as project management advisory panels and mentions that such panels should be comprised of individuals who are experts in the field program/project management and have experience relevant to the domain of the program under consideration (Pells 2007). This group of experts can assist the program management team in resolving risks and issues and can provide guidance and direction to the program in terms of costing, scheduling and general program management. There should be a consistent interaction, between the program management team and the advisory panel, through periodic program reviews or on a consultative basis.

ASSETS TO GOVERN

As discussed in other sections, the program governance mechanism is applied to provide an oversight function over certain assets that have to be overseen in order to deliver intended benefits.

From a governance of process perspective, the program governors review that the program team is following the processes and management mechanism as defined by the governance framework. PMI® has listed the quality assurance (QA) activity, which has the main function for ensuring that the processes are being followed and that project is conforming to the standards, as a program governance responsibility (PMI® 2008a). The Norwegian QA framework, during pre-initiation activities, focuses

on ensuring that the team is following the defined mechanism through reviews of standard documents at QA 1 and QA 2 stages (Klakegg et al. 2008). QA 1 and QA 2 are the two stage gates at which the quality of the deliverables is accessed. As a control dimension, governance should evaluate the proper implementation of program management processes and tools.

The management of program resources is the responsibility of the program management team; however, governance oversight should be provided from the program governors. Turner and Keegan refer to the role of steward who has the responsibility of optimal assignment of resources to the team (Turner and Keegan 2001). The program governors have to make sure resources are adequately available for the program and its constituent projects, as the provisioning of resources for the program team, in order to deliver program benefits, is a governance responsibility.

The program manager and team look toward the program governors in order to provide guidance and support regarding certain program decisions. The program governors also evaluate the decisions taken by the program team over certain aspects. Decisions are generally evaluated through outcomes or through the decision-making process, which will in turn relate to program management processes. OGC gate review 0 assesses the decisions taken by the program team related to the program as well as to the projects within the program (OGC 2007). PMI® also recommends program and project managers to document the decisions taken as the governance function is expected to audit the program and related projects, and the decisions will be evaluated as part of the audit process (PMI® 2008a).

Certain risks and issues that are outside the direct control and scope of the program team are escalated to the program governor. Resolution of these risks and issues are under the responsibility of the program governor (Stretton 2010). If the program's overall risk exposure is higher than the threshold value, then the program governors have to focus more on controlling the program activities.

The overall progress of the program should be consistently overseen by the program governors. The executive sponsor should scrutinize the program, as well as provide support to the program team when the program shows signs of deviation from the plan, which are outside the defined threshold. Based on the status review of the program, as well as other factors, the program governors may decide to continue or to terminate the program or one of its component projects. Monitoring the program status

helps align the program, and its projects, with the organizational context as well. Stretton, for example, considers periodic program reviews, of cost and progress, as an important governance function (Stretton 2010).

The reason for initiating a program is to achieve organizational strategic objectives, thus, this aspect of the program should be at center of attention of the program governors. Defining and reviewing the program objectives are considered to be an important function of governance. All of OGC's gate review focus on the strategic objectives that the project or the overarching program is focused toward achieving (OGC 2007). PMI® refers to the management of program benefits, which are achieved through collective objective accomplishment of projects, as a program governance responsibility (PMI® 2008a).

While identifying the role of broker Turner and Keegan mention that one of the major assets that has to be governed are the external stakeholders such as clients and others (Turner and Keegan 2001). The management of organizational stakeholders, who can influence the program condition and outcomes, has to be carried out by the executive sponsor. APM principles refer to proper, management of, and reporting to, stakeholders based on their importance to the initiative (APM 2007).

It is a governance responsibility to ensure that all assets mentioned in this section are taken into consideration while creating and implementing the governance framework. Any reporting and disclosure from the program manager to the program governors should include reference to these assets, so that the oversight function of governance can proactively track any significant events within the program and can respond accordingly in order to deliver the program benefits.

PROGRAM GOVERNANCE FUNCTIONS

The functions of program governance, with the exception of a few, can be divided into two major groups based on the program life cycle. Some functions are related to the initial phases and set up of program, whereas others are concerned with the benefits delivery and closure phases. This difference is evident, as during the initial phases the governance functions are more concerned with organizing the management and governance mechanism, whereas in the later phases the focus is more toward providing

support and control to the program for successful program delivery. There are, however, certain functions, such as oversight, which encompass the overall life cycle of the program.

GOVERNANCE AND MANAGEMENT FRAMEWORK

One of the main responsibilities of governance is to create the environment under which the program is governed, executed and managed smoothly. There are two facets related to this role. One of them is concerned with creating a program management structure, which includes defining the roles, responsibilities and reporting structures, whereas the other is concerned with setting up processes, policies, decision-making models, escalation mechanism, templates and tools for program management.

Having a clear understanding of "how things should work" simplifies the task of the program management team, as they will have a relatively clear idea as to how the program should be smoothly routed, and how the decisions will be taken during the course of the program. This understanding also reduces the potential blurred boundaries between different entities, as each entity will have a clear idea about their responsibilities, authorities, and domain of influence.

This function generally is executed in the initial phases of the program, however, based on the feedback received or lessons learned, the management framework may be revised during the course of the program, which is again a governance function.

ENSURING STRATEGIC ALIGNMENT

Programs and their component projects are considered as drivers for strategy implementation. Thus, programs executed, within an organization, should always remain aligned to the strategic goals of the organization or the portfolio in which they are represented. OGC's gate review 0, ongoing strategic assessment, focuses on continuous alignment of programs with the organizational strategy. APM considers lack of strategic alignment as one of the common causes of failure of such initiatives (APM 2007).

Organizations strategy is dynamic, and changes are due to various internal and external factors. There should be consistent interaction between the program and the business, so that any updates or changes in the business strategy, which may be impact the program, can be reflected through to program objectives and related artifacts.

Reviews related to strategic alignment should be part of the periodic review process, where the focus should be to ensure that the program is aligned with the current business strategy, and in case any changes are required, the program governors will propose the required updates that will help in program realignment.

This function encompasses the overall program life cycle where the initial strategic alignment takes place during the initial phases, whereas the ongoing strategic reviews during the program life cycle ensure that the program is aligned with the current business strategy.

DELIVERING BENEFITS

During the program benefit delivery phase, and the program closure phase, it is important to ensure that the objectives of the constituent projects are delivered and integrated so that defined program benefits are delivered to the beneficiary organization(s). OGC's gate review 5, readiness for service, focuses on the readiness of the organization, so that that the beneficiary can gain from the program's outcomes, manage the change resulting from such an implementation and ensure that a framework is in place to sustain the benefits (OGC 2007).

PMI® has a full process that focuses on managing the benefits of the program (PMI® 2008a). Individual projects have deliverables, which are integrated at the program level to deliver the program benefits. It is a program level responsibility to define the deliverables expected from the project, ensure that they are being delivered, and integrate these deliverables so that the program can meet its defined objectives. Program governors oversee that the benefits expected from the program are realistic and that the program is on track to deliver the expected benefits.

The program governors, through periodic reviews, have to ensure that the program's constituent projects are delivering their objectives, within the defined constraints and thresholds. Accordingly, they have to ensure that these deliverables are being integrated at the program level in

order to meet the program level objectives. Any deviations that are outside the threshold value are noted, decisions are made, and recommendations are provided to the program management team in order to bring the program back on course.

This function is more focused toward the benefits delivery and program closure phase. The emphasis during the benefits delivery phase is more toward ensuring that the program's deliverables are being created according to plan, whereas during the program closure phase the focus is more toward implementation and sustainment of benefits.

REVIEWING PROGRESS

It is important to review the overall status of the program in order to ensure that the program is progressing as per the approved plan, and any deviations from the plan are accounted for and approved. The program governors have to define the Key Performance Indicators (KPIs), which will be used to track the overall status and progress of the program from different aspects.

The program management team has the responsibility of reporting and presenting the progress on a periodic basis to the program governors. These reports should indicate the performance of the program, and its component projects, based on the KPIs defined by the program governors. This review will also include evaluating the significant decisions made by the program team and their overall impact on the program. Based on the reported performance the program governors authorize and approve the program, or its components, to proceed to the next phase or to be adjusted or terminated.

Based on the program plan and progress, component projects will be initiated, closed, or terminated during the program life cycle. Such decisions also come under the influence of program governors who work with the program manager, decide whether a particular component needs to be initiated, or another component needs to be closed while ensuring that the intended objectives are delivered. These decisions are also made while reviewing the overall program progress so the impact of these decisions is considered from the holistic program benefit delivery perspective.

The program progress review encompasses the overall program life cycle, where the focus of the review will change based on the program's specific life cycle phase.

GOVERNANCE OVERSIGHT

Governance, as discussed earlier, is an oversight function. The objective of this oversight is to ensure that the program stays on track and delivers the intended benefits to the beneficiary. In order to meet objective of oversight two aspects, i.e., support and control, become a key governance theme. This is required because programs are of large magnitude, and all aspects of the program are not in the control of program manager or the project management team and require the assistance and guidance of the program governors for successful delivery of benefits.

Controlling the progress of the program, and the action of the management team, is an important governance theme. This control is especially required when the program is not performing according to the plan and needs intervention from the program governors in terms of decision making and actions in order to bring it back on track. The program governors decide on the corrective actions and provide directions and recommendations to the program management team for implementation. Klakegg et al, while conducting a qualitative study related to the project governance framework adopted by the public sector in the United Kingdom (UK) and Norway, also the control aspect of governance, in all three large scale initiatives that they investigated, with varying degrees of intensity (Klakegg et al. 2008).

Programs also need support and guidance from the program governors throughout their life cycle. Stretton mentions that providing resources, and ensuring resource availability, is a governance function (Stretton 2010). Any issues or risks that the program manager is unable to resolve are generally escalated and handled by the program governors. Along with the governance entities, especially the executive sponsor, it is necessary to support and advocate the program in front of stakeholders.

With the main objective being delivery of program benefits, governance oversight, along with its dimensions of control and support, encompasses the overall program life cycle.

PROGRAM REPORTING AND COMMUNICATION

Effective reporting and communication are considered to be an important factor for improved decision making. However, without a culture of honest disclosure, effective reporting cannot take place, and the governance

function should implement measures, which assist in disclosure of information to the relevant stakeholders. APM focuses on communication management and states that the criteria and content for reporting and communication, including criteria for escalation of risk and issues, should be established from the beginning (APM 2007).

Reporting of the program's progress and status to the program governors is the responsibility of the program management team; however, the program governors need to create high level, or executive reports, that should be disseminated, at the right time and with the right information, to executive management and relevant program stakeholders. This information delivery ensures the executive management will be able to make accurate and timely decisions related to the program.

Program reporting begins from the initial phases of the program; however, the frequency of reporting may oscillate during the program life cycle based on various factors, such as program performance as well as other program attributes.

PROGRAM GOVERNANCE MECHANISMS

Program governance exists within the corporate governance framework. The governance functions defined in the previous section are carried out by employing certain governance mechanisms. Stretton, based on a review of different standards and literature, proposed different aspects of governance, which should be kept in mind, while designing a governance mechanism (Stretton 2010):

1. Establish a governance framework, which should include defining the structure and membership of program governors, policies and procedures for governance, defining authority of different roles and the decision-making process.
2. Set up criteria for acceptance and assessing the projects for acceptance.
3. Ensure resource availability for projects and programs, which is related to the support dimension.
4. Review project progress in terms of cost, schedule, and benefits delivery at a pre-defined points or otherwise.
5. Resolve escalated issues not manageable at the level of projects at the program level or by the program board.

The following section sections define two main governance mechanisms that are employed by organizations around the world to effectively execute governance.

STAGE GATE REVIEWS

One of the mechanisms to have in a consistent governance regime is to implement a gate review process at key decision points in the program. OGC's gate review process is a governance mechanism, which is comprised on six gate reviews (Gate review 0 to Gate review 5) conducted at key decision points by experienced professionals who are not part of the project/program team (OGC 2007). These six gate reviews and their objectives are defined below (OGC 2007):

1. Gate review 0, which is "Ongoing Strategic Assessment," is specific to programs and is conducted throughout the life cycle of the program at key decision points. This review focuses on the strategic alignment of the programs, component projects, and their progress. The objective of this review is to ensure that the need for the program still exists, and that the program will meet its desired outcomes.
2. Gate review 1, which is "Business Justification," is a project-level review and is conducted prior to project initiation after the business case is ready for review. The objective is to validate the business justification of the project before approving preparation of the development proposal.
3. Gate review 2, which is "Delivery Strategy," is a project-level review, and is conducted after the delivery strategy is developed. The objective is to verify the delivery approach and make sure that solid implementation plans are in place. Vendors are only approached for delivery execution after project has passed this review.
4. Gate review 3, which is "Investment Decision," is a project-level review, and is conducted after proposals are received from the vendors. The objective of this review is to revalidate the full business case and make sure that governance arrangements are in place before the investment decision is made, and resources are committed.

5. Gate review 4, which is "Readiness for Service," is a project-level review, and is conducted after the project is ready to be commissioned for service. The objective here is to verify the readiness of the organization to implement, manage change, and govern the service after delivery.
6. Gate review 5, which is "Operations Review and Benefits Realization," is conducted at regular intervals throughout the life cycle of the service starting from its commissioning until the service is decommissioned. The objective of this ongoing review is to ensure smooth operations and maximum benefit realization from the service.

Such a governance mechanism ensures that the right programs and their projects are chosen, the projects remained aligned with their objectives within the program, and the benefits from the projects and those of the overall program are sustained (OGC 2007). PMI® also mentions stage gate review as a mechanism to provide governance oversight (PMI® 2008a).

Such gate reviews generally occur at predefined milestones, such as completion of a program phase, completion of component project, request to initiate a new component, or another major event. However, there are cases where a gate review request can come from the program manager to resolve issues and respond to risks. The objective of such reviews is to monitor the program's progress and the current status of benefit delivery and outcomes so that significant decisions can be made, which will influence the program's future and direction.

PROGRAM AUDITS

Another governance mechanism, which is focused more toward compliance with processes and standards, is program audits. The objective of the program audit is to ensure that the program is being managed according to the standard processes, and the program finances are being spent in compliance with the plan (PMI® 2008a).

It is the responsibility of the program manager to be prepared for such audits, whether they are pre-planned, announced, or sudden. The objective of such audits is to make sure there are no deviations from the plan,

or if there are any deviations, they are approved. Any unapproved deviation from the plan is reported to the governance entities and the executive management. Program audits keep the program aligned, and compliant, with the organization's standards, which can help organizations to respond to any external compliance and audit needs.

SUMMARY

Programs are temporary organizations, which permanent organizations form to deliver high- level strategic benefits. Once all projects, within the program, terminate, because of successful achievement of objectives or otherwise, the program moves to closure as well. It is evident from the discussion above that in order to meet the objectives of the program, and deliver the benefits to the organization, governance oversight is inevitable. Based on the discussion, Figure 11.3 defines a conceptual framework for program governance:

Governance entities have a broader vision of the organization and can provide the kind of support and control needed to make the program successful. Organizations achieve this through creation of certain roles and entities that govern the program throughout its life cycle. These roles

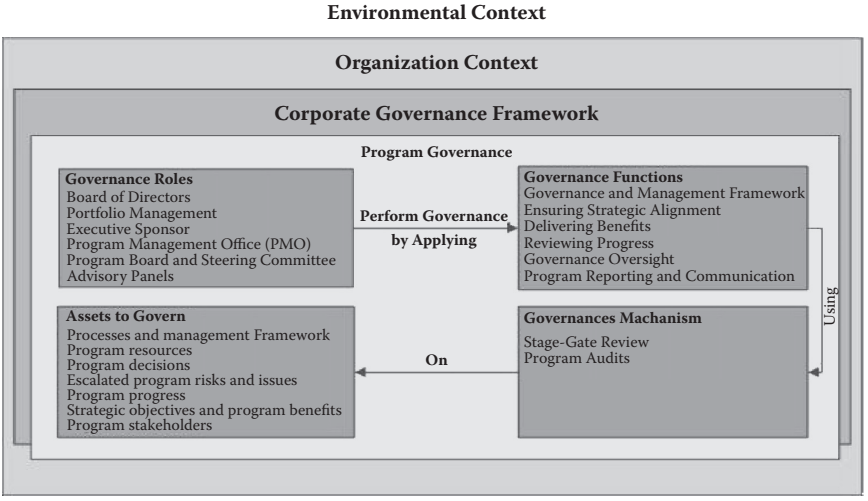


FIGURE 11.3
Program governance: conceptual framework.

facilitate successful implementation and delivery of organization's strategic initiatives through employment of governance functions on the program assets. Program governance ensures this oversight function through stage gate reviews and program audits that are carried throughout the program life cycle.

Organizations need this kind of support and control from the program governors in order to ensure that the investments are secure, and the initiative delivers the required benefits. The core of program governance is to deploy an integrated framework to deliver strategic goals and benefits to the organization.

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12

Decision Gate Discipline for Programs

Bill Crider, PMP, PgMP

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INTRODUCTION

One of the greatest challenges for any program is to remain aligned to organizational strategic direction. One of the primary tools for maintaining program alignment to organizational strategic direction is the decision gate. Exercising the discipline to properly pass through decision gates is therefore one of the key factors for program success and program management excellence.

This chapter describes the rationale for decision gates, how a program manager should prepare for them, and how to execute decision gate reviews for maximum success.

THE ROLE OF DECISION GATES

No one likes accountability. It seems a pesky annoyance, which distracts the program manager from the actual execution of the program.

Constantly preparing status reports, data for accounting, and stakeholder presentations does not seem to add any value to the program, and meetings consume valuable time. As it has been aptly said, meetings are events where minutes are kept, and hours are lost. Decision gates are particularly noisome since they have a greater formality and are directed at a high-level audience of management, which may make seemingly capricious decisions regarding the very fate of the program.

Decision gates require revisiting core documents such as the business case, budget, risk register, program management plan, and baseline roadmap. Preparing for decision gates seems to have no relation to the day-to-day execution, and revising these documents may require deep thought and have pandemic impact to the program. Since the documents involved form the very foundation of the program, even the slightest change to them may cause entire projects to be cancelled, and other new projects may be required. Indeed, the very existence of the program is at stake if strategies or goals of the organization have changed. A program is at risk of becoming a tool of political in-fighting. A very successful program may also be perceived as valuable 'turf' to be seized by one manager or another.

The stakes are high, and a program manager may feel trepidation at walking into this arena of corporate activity.

Accountability, though, is a key responsibility of the program manager. The program manager is accountable to stakeholders, to management, and to the program sponsor far more than to any other member of the program or project teams. *The Decision Gate is more vital to the success of the organization than to the progress of the program.*

Maintaining strategic alignment of the program with the organization's goals is the most important responsibility of the program manager. A well-executed program that fails to accomplish strategic imperatives is a failure, no matter how flawless the execution. The sponsor and management must hold the program manager accountable. Their key methodology for so doing is two-way communication, particularly through the formal process of the decision gate.

A decision gate is a predefined point where accountability will be required. It is a formal meeting in which the program manager presents the history and status of the program, current alignment with organizational strategic objectives, and requests permission to proceed with the next phase of the program. The outcome of a decision gate should be the sponsor's (and other managers and stakeholders) acceptance of the current

status and approval to continue into the next phase. This acceptance and approval should be clear and unambiguous. For this reason, decision gate presentations and approvals must be formal and written.

SCHEDULING

Decision gates are usually scheduled based on work to be completed for a decision gate (achieving a particular milestone) or upon a time period (such as monthly, quarterly, or annually.) Depending on the duration and scope of the program, quarterly reviews might provide a reasonable timeline for decision gates. In that case, each quarterly review is an excellent time for the sponsor to ensure the program is aligned to strategic objectives and should still continue execution.

If based on work completed, that work should align with natural phases of a program. For example, in a large construction program, there may be decision gates associated with concept approval, site selection, architectural design, environmental, regulatory and demographic studies, site preparation, construction completion, and occupancy certification, see Table 12.1. In a product development program, there may be decision gates at concept approval, market research, design completion, manufacturing readiness, market readiness, and first shipment, see Table 12.2.

Some programs may have more esoteric scheduling, such as around seasonal changes or around industry events. A program to open a new mining or drilling site in Alaska (which has only about three months of effective working time each year) may schedule a fall decision gate to coincide with acquiring leases on claims identified during the summer, a winter decision gate to review equipment purchases and preparation, a spring decision gate to review hiring and shipping of equipment to location, and a summer decision gate as a "go/no-go" to begin production during the working season, see Table 12.3. Some industries are closely tied to trade shows or to the Christmas shopping season, so that decision gate reviews are scheduled at appropriate times leading up to trade shows or to historically significant marketing seasons.

Each of these phases may have many constituent projects, which each have their own decision gates. The program decision gate is separate from the projects and has some distinct imperatives. Project decision gates seldom have

TABLE 12.1

Sample Decision Gates—Construction Program

Milestone	Description	Decision	Decision Maker	Date
Concept Approval	Organization decision to build a new shopping center	Proceed to site selection	CEO	
Site Selection	Selected site meets organization objectives for location and market	Proceed to architectural design	Site Selection Manager	
Architectural Design	Completed design matches layout and zoning requirements of site	Proceed to site studies	Architect	
Site Studies	Demographic, environmental, and regulatory studies complete; permits acquired.	Site meets strategic requirements of the organization	Legal Department	
Site Preparation	Grading and utilities complete	Able to begin construction	Construction Manager	
Foundation	Foundation complete	Able to start framing	Construction Manager	
Dry-in	Walls, roof, windows, and doors complete	Able to begin interior build-out	Construction Manager	
Interior Build-Out	Systems (plumbing, electric, HVAC, etc.) and amenities (walls, ceilings, flooring, etc.) complete	Able to certify occupancy	Construction Manager	
Occupancy Certification	Approval from local government to occupy	Proceed to close	Legal Department	
Program Close	All program goals met and benefits realized	Transition to operations	CEO	

as high-level an audience as program decision gates because projects tend to be tactical, and programs should be strategic. Project decision gates are almost always focused on milestones, where program decision gates should be focused on strategic alignment. Project decision gates relate to products and features; program decision gates relate to benefits and strategies.

TABLE 12.2

Sample Decision Gates—New Product Development Program

Milestone	Description	Decision	Decision Maker	Date
Concept Approval	Proposed product meets corporate guidelines and strategies	Proceed to Market Research	New Products Manager	
Market Research	Profitable marketability of product is likely	Proceed to Patent Readiness	Marketing Manager	
Patent Readiness	Product is patentable, and application has been submitted	Proceed to Design	Legal Department	
Design Completion	Product design is complete, can be manufactured at a reasonable cost, and meets regulatory guidelines	Proceed to Manufacturing	Designer	
Manufacturing Readiness	Suitable manufacturing supplier is identified and contracted	Begin Manufacturing	Manufacturing Contractor	
Market Readiness	Product is received in the warehouse and is ready to ship	Begin Sales of Product	Marketing Manager	
First Shipment	Close development program	Transition to Marketing	Marketing Manager	

PLANNING FOR DECISION GATES

Decision gate topics and cadence should be part of the original program management plan. When the program charter is created, it should refer to the decision gates in general terms, but the program management plan should include specific decisions to be made, documents and key indicators to be reviewed, and timing or triggers for the decision gates.

The program manager should approach the decision gate fully prepared. All relevant information should be accumulated and reviewed prior to the meeting. Information to be gathered includes work progress information for

TABLE 12.3

Sample Calendar-Based Decision Gates—Alaska Mining Program

Date	Description	Decision	Decision Maker	Date
Summer	Identify claims and drill exploratory cores	Authorize exploration and negotiation of leases	CEO	May 30
Fall	Claim leases confirmed	Authorize purchase of equipment	CEO	Oct 1
Winter	Equipment purchased and delivery scheduled	Authorize recruiting labor force	CEO	Jan 2
Spring	Labor hired and materials shipped to location	Authorize shipment of equipment and hiring of labor force	CEO	April 1
Summer	Go/no-go decision to begin mining and transition to operations	Transition to Operations	CEO	May 15

subsidiary projects, milestones accomplished, and benefits realized. Each program will also have specialized information related to that industry or program. For example, a construction program might include environmental study results, a product development program may include market research data, and a technology research program may include research papers and patent search data.

Standard project documents (such as the risk register, dependency map, decision register, program Gantt chart, and roadmap) should be updated and available on-hand for quick reference if needed.

Preparing for a decision gate is also a good time to review the stakeholder register and stakeholder map. All stakeholders with decision authority should be involved in the decision gate. There should be only one meeting, and everyone should be at that meeting, or their delegate with decision authority should be present. This would certainly include the program sponsor, project managers who lead critical projects recently completed or in-flight, and any stakeholders with actual decision authority for this phase. If the program includes extensive financial or regulatory requirements, it may be wise to have accounting or legal representatives present. However, it is a good idea to limit the attendance at a decision gate meeting to only those with decision authority. Having too many interested parties at the meeting may introduce unneeded complications. Get input in advance from everyone who should be consulted—but only invite those absolutely necessary to the formal meeting.

The program manager should take time to know the audience in advance by spending time with each person who will be approving the presentation or making the decision to proceed with the next phase. What is each member likely to be most interested in? Some will want budget, some will want actions, and some will want schedule. All will want to know 'how will it affect me and my other pet projects?' Be prepared for both positive and negative answers and have contingency plans for each one. What is the right response if they react in a particular way in the meeting? Have informal meetings with key stakeholders and determine their position on key issues. Know their 'tone' before coming into the meeting. Never leave decisions to chance, and never ask for a vote without knowing in advance the most likely outcome. The decision at the gate should be merely a formal confirmation of the outcome for which the program manager has already prepared. This approach may seem 'Machiavellian', but it is only common sense. Decision-making management is an important subset of stakeholder management. The program manager should never be surprised or ambushed in a meeting if properly prepared.

CONTENT OF THE DECISION GATE PRESENTATION

Complete transparency of program status should always be a goal of the program manager. To be completely transparent, all the data in a decision gate presentation must be complete, correct, and honest. Issues or problems should not be withheld, and any negative impact should be acknowledged. However, a program manager should never approach a decision gate with a negative issue unresolved or at least with a solution prepared.

At a minimum, a decision gate presentation should include a report of program progress to date. This may be based on a variety of metrics. The cost performance index (CPI) and schedule performance index (SPI) are relevant industry-standard measures of performance. However, it should not be assumed that organizational management will understand or appreciate these measures if they are simply referred to by their acronyms. A program manager should use specific language indicating "Here is how much we expected to spend by this point in the program, and here is how much we actually spent. Based on that, we are X% complete and project to spend $Y by the end of the program." Similarly, the SPI should be explained with "Here is where we intended to be on the program at this

point in time, here is where we actually are, and we thus forecast completion by about this date." Showing the variance from the cost and schedule baseline should be a normal part of the decision gate review. It almost goes without saying that these data should be shown graphically as well as verbally. Upper management may want to analyze the raw data outside the meeting, but for a decision gate presentation, simple graphics always trump complex words. The goal is for the sponsor and key stakeholders to have a lasting mental image of the actual progress.

A decision gate should also trigger a review and update of the business case for a program. Are the original assumptions still valid? Has the market changed since the program was conceived? Review of the business case in the decision gate meeting will reassure decision makers and remind them why they initiated the program in the first place.

Work status and milestones achieved are also an important part of a decision gate. These should be high-level and not simply enumerated. The significance of each milestone should be highlighted, and their alignment to organizational strategic objectives underlined. Upper managers may have many different programs and operational statistics to think of everyday, so there is no reason to assume this one stands out in their minds. The program manager should carefully explain the program in every decision gate so managers cannot confuse this program's status with that of another program. Regardless of how well the program is executed, if that execution is poorly communicated in decision gates, management may have the wrong impression of the status and performance, resulting in adverse decisions.

Changes to projects, programs, or objectives should also be discussed. Properly executed, these changes will have gone through a change control process and can be clearly documented as to scope and purpose. The rationale for the changes and their impact on the program should be carefully explored.

Issues and challenges faced should also be covered. It is likely that if there have been issues in the current phase, managers may have heard of the issue but not the resolution. The decision gate presentation is the program manager's opportunity to present these issues in the manner best suited to the program manager's goals.

The risk register should also be updated and reviewed at the decision gate. This is the best time to review the status of each risk, determine which risks may have passed, and identify new risks that may have developed. Re-approval of the risk mitigation plan should be a step in the decision to continue.

A review of current alignment to organizational strategic objectives is also a critical part of the decision gate review. The program manager must be alert to changes in organizational direction, and he or she must be prepared to realign the program to match any changes. Be very specific as to which benefits of the program align to which strategic objectives of the organization.

Before a decision is made to move to the next phase, that phase should also be explained, along with relevant metrics and criteria for moving to the next decision gate.

PASSING THROUGH DECISION GATES

A true professional will complete presentation preparation far enough in advance to allow practicing it several times. Some mistakes or awkward phrases will be found only when an oral presentation is rehearsed. Preferably rehearse alone first, then in front of a sympathetic audience, such as with peers or members of the program core team. If several people must present, it is important to rehearse together to practice hand-offs and timing.

Rehearse to determine exactly how long the presentation will take. A decision gate review meeting should last exactly long enough and no longer. That may seem axiomatic, but it does not help decide a specific instance. Decision gate meeting length is more dependent on organizational culture than on the amount of data to deliver. Think of this as the 'Goldilocks Rule.' People (including managers), are comfortable with things that feel 'just right.' In some companies and on some projects decision gates may take a full day. In many organizations, one hour is standard. In extreme cases decision makers may receive all the data in advance and meet for only minutes to actually vote on the decision. The program manager should observe what is standard for a particular organization and decide how long to schedule the meeting. Then the data to be presented should be digested to fit the time available. Going longer than the organizational culture normally allows may cause decision makers to become bored or irritated, which may result in an adverse outcome. A meeting shorter than the cultural norm may make decision makers feel rushed, or that they are being 'railroaded' into a decision. Knowing the audience should include knowing what they will consider 'just right.'

Finally, the program manager should concisely state the decision and formally ask for the decision to close the current phase and begin the next

one. That decision should be expressed as a simple "yes" or "no." Anything more complex information risks ambiguity. If possible, have the sponsor and other decision makers physically sign off on the decision. At a minimum, the decision and names of the decision makers should be recorded in the meeting minutes, and they should be published immediately and be available in all forums, which are appropriate. Team members and all stakeholders should be included in communication of the decision. If the program uses a decision register (and it should!) then the date, the decision, and deciders should be recorded there.

Passing through a gate should also trigger re-baselining of schedules and budgets. All relevant documents (such as the risk register, change log, program management plan, etc.) should be under change control, but should be re-baselined if there are any changes as a result of the work done during the phase or the decision gate.

DECISION GATES AS A BUSINESS PROCESS

Business process experts typically are united on only a few things, but they do agree that for a process to be consistently successful, it must be:

- Measurable
- Repeatable
- Documented
- Formal

Having and using a formal, disciplined decision gate process improves the chances of program success and ensures stakeholders stay informed and satisfied with program progress. More consequentially, it contributes to the success of the organization by ensuring continuous alignment of the program with the organization's strategic objectives.

For this reason, it is a good idea to create or employ an organizational template, which prescribes what content is necessary in a decision gate review. However, complete devotion to a template is the sign of a novice. Always customize the presentation to the current need.

In absence of an existing template here is an example of a potential template for a one-hour decision gate presentation.

- Why We Are Here—10 minutes
  - Business Case
  - Program Charter, Mission, and Vision
  - Decision Needed
  - Current Status
- Program History Since the Last Decision Gate—10 minutes
  - Milestones
  - Issues
  - CPI and SPI
- Review of Documents—10 minutes
  - Risk Register
  - Change Register
  - Decision Register
- Review of Alignment to Strategic Objectives—10 minutes
- Next Phase—5 minutes
- Questions and Answers—10 minutes
  - (If the program manager has met with all decision makers in advance, this question and answer session may be minimal. But the program manager must include it, or there will be repercussions later when stakeholders complain they had no opportunity to ask questions or to provide input. In all cases the program manager must control this portion of the meeting and limit its time.)
- *Decision:* Do the Sponsor and other decision-making stakeholders accept the current status and approve moving into the next phase?—5 minutes
- Perform a roll-call vote and allow each person to vote verbally.

SUMMARY

Decision gate discipline is a key execution skill for program managers. Decision gates must be passed at the proper times with all the relevant data clearly presented. The program manager must prepare the decision makers and the presentation in a professional and timely manner. The process must ensure the program stays continually aligned to organizational strategic objectives. Following all these guidelines with discipline will contribute greatly to the success of the program and the organization.

13

Mobilizing the Organization: The Discipline of Execution

Kim Herzog, MBA, PMP, PgMP

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INTRODUCTION

For decades, focus has been placed on improving organizational processes. Since the late 18th century when businesses first began to live beyond the life of their owners, company leaders began to look at how to help workers become more efficient. It was important to streamline production, schedule deliveries of raw materials, and make more accurate estimates of production time. Before the Gantt chart emerged in the early 19th century, project management pioneer Frederick Taylor was advocating the benefits of benchmarking, re-engineering, and process redesign (2011).

Business process management has continually been responding to the market and external forces throughout history. The Great Depression brought unemployment and changed the views on labor and project scheduling. The Works Progress Administration (WPA), created by the U.S. government following the Great Depression, got employers to think about work as a series of projects instead of a regular process. Skilled labor shortages during World War II brought scheduling challenges and the need for

process definition between temporary and skilled workers. Then the prosperity era that followed World War II spurred the investment by American businesses and government contractors to further develop the project management profession. The Program Evaluation and Review Technique (PERT) became popular by government contractors, while the private sector embraced the critical path technique (completion of critical tasks in the shortest time possible). Next, the industrial crisis changed the perspective on business processes and organizational capabilities, and then in the 1950s and 1960s, corporations experienced the impact of globalization and international compliance standards. In 1965, the International Project Management Association (IPMA) was founded followed shortly by the Project Management Institute (PMI®) in 1969. Both organizations advocate project management through standards and credentials and are expanding to capitalize on specific project and program expertise.

In 2008, the global recession occurred forcing many companies to become more efficient in adjusting to quickly changing market conditions, greater worldwide regulations, and stronger competition. The focus is now being applied to the disciple of execution as companies work to do more with less and work efficiently bring to life their strategies by mobilizing their organizations.

No one expected the global recession to hit as hard and fast as it did. It left devastation and a loss of confidence in its wake as some of our most beloved corporate giants fell hard. Few governments or consumers could escape. Many businesses went bankrupt, and others are still strapped as they struggle to stay afloat.

The aftershocks have impacted business in ways that we could have never imagined, and the "business as usual" mode of operation continues to be re-written. Today, companies are working tirelessly to restore their market share position and financial strength. The Chairman of the Board and stockholders are demanding that executives deliver on the promises that they have made, and when they cannot, even the top leaders have little job security. Some of the Chief Executive Officers (CEOs) with the most promising careers with the most admired companies, such as Hewlett-Packard, Sony and Yahoo!, have been removed or forced to resign. The strategies that they developed were created by some of the smartest individuals in their markets with the help of knowledgeable advisors, but the strategies still failed to deliver. The CEO and his or her executive team gather in the boardroom, drained and exhausted, and many still cannot understand why they were not successful. They had the right products,

and everyone worked hard to meet the goals, but their efforts did not result in accomplishment.

Good strategies most often fail because they are poorly executed. What separates the companies and business leaders that have survived and thrived in the global recession from those that have not is their ability to execute. In some cases the organization is not capable of bringing the strategy to life, or the leaders of the business misjudge the challenges their company faces, or both as noted by Bossidy and Charan (2009). The gap between promises (what a company's leaders want to achieve) and the ability of their organization to produce the desired result is **execution**.

Research shows that execution of strategy accounts for 85% of a company's financial results (Berggren and Messick, 2012) so when the CEO asks, "how do I mobilize my organization to ensure that I can deliver on the goals that I have set?", there are four recommended core principles:

1. Establish a Culture that Values Execution and Excellence
2. Engage the Leadership
3. Get the Right People
4. Institute Governance

This chapter discusses these four areas as it focuses on the importance of execution for successful program management.

ESTABLISH A CULTURE THAT SUPPORTS EXECUTION AND EXCELLENCE

Bossidy and Charan (2009) define **execution** as a "discipline of getting things done," which requires a comprehensive understanding of the business, its people, and its environment. It is a specific set of behaviors and techniques that links the corporate vision to operations, assesses the organization's capabilities, exposes what is real, and then synchronizes the strategy, the people, and the operations' processes. It is a process that companies need to master in order to create and maintain a competitive advantage.

Unfortunately many believe that execution is the tactical side of the business, however, that is mostly false. Tactics are central to execution, but execution is not tactics. Business leaders also often feel that execution is

the details that should be delegated to subordinates; this too is incorrect. Execution is a major job function of every leader and should therefore be ingrained into the culture of the organization as fundamental to the company's strategy and its goals.

Excellence as a corporate objective is the pursuit of constant improvement. The goal of any company should be to have a culture that seeks excellence and continuous improvement in all respects. In order to get to this state, the organization must subscribe to:

1. Truth: a full understanding of what is real
2. Excellence in all business functions: holding individual contributors accountable
3. Constant improvement, which requires continuous learning, and the acknowledgement that problems and mistakes are essential to the learning process
4. Committing to do the difficult and uncomfortable things to make the company great

Truth is a life-threatening ingredient of execution and excellence, which allows us to accurately diagnose problems that stand in the way of our goals. Getting to truth requires openness of communication especially when discussing difficult issues such as connecting specific mistakes to specific people. We have all witnessed organizations that are full of people who would rather avoid reality or taint the facts. Often the truth is uncomfortable, and they feel they need to hide mistakes or buy time to figure out a solution. The pursuit of "truth" allows leaders and subordinates alike to get in synch with the business and what is individually perceived to be the accurate. Similarly, open debate produces informed decisions, while conflicts probe fundamental principles that allow people to resolve their differences. Open-minded disagreements to get at truth should be encouraged at all levels of the organization as well as between leaders and subordinates. Disagreements can produce tension, and discussions can be time consuming, but the advantages are that decisions are likely to be more effective ones, people feel they can drive decisions, and relationships are often strengthened as a result.

In a culture of execution, behaviors should promote excellence and continuous improvement in all respects from all associates regardless of their job function. From the support staff to the business development groups, all members are working as a team. Leaders, who are committed to the

pursuit of excellence, create a culture where it is acceptable to fail but unacceptable to not identify, analyze, and learn from mistakes. The focus is then able to shift from being "right" to working toward their goals. This is what binds execution and excellence together. The goals and priorities of the organization are clear and well known throughout the organization, and employees are called to identify results that do not meet the standards of excellence. It is recommended that focusing on three or four priorities will produce the best results, which allow associates to simplify things so that others can understand them, evaluate them, and act on them. Actions become common sense, and the shrewdness to make decisions is clear.

The values of execution and excellence should be ingrained in the culture of the organization to create an enterprise that is able to meet business challenges easily, respond to changes in the market swiftly, and enhance their value proposition to the market and stockholders.

Without a culture that strives for truth, a desire for continuous improvement, or the ability to get things completed, businesses just are not able to meet their objectives, and defining the strategy is simply an exercise without the foundation to bring them to fruition.

The culture of an organization is not defined by its mission statement or its value proposition. Instead, it is the behavior of the employees, their values, and beliefs that define the culture, and the culture will determine how the community works together and how they respond individually. Shared values of execution and excellence will anchor the culture in the organization. However, to change the culture you need a set of processes that will change the beliefs and behavior of people in ways that are directly linked to bottom-line results. Cultural change gets real when your aim is execution.

ENGAGE THE LEADERSHIP: YOU CANNOT LEAD FROM BEHIND A CLOSED DOOR

The leader has a comprehensive view of the organization and the authority to make trade-offs so that the corporation is in synch, and teams are working in concert for shared goals. You could compare the business leader to a sports team coach. If the coach spent his or her time in the office and delegated the coaching to an assistant, he or she would not be very effective. However, the coach is effective because he or she is constantly observing

the players individually and collectively on the field and in the locker room. In this way, he or she gets to know the players and their capabilities while the players get first-hand benefits of the coach's experience, wisdom, and feedback. Everyone is energized by the example being set.

Simply, the culture of a company is defined by the behaviors of its employees, which are a direct result of the behaviors of its leaders. For example, if the employees are nervous, lack trust, or are unattached to the business that is the behavior of the organization, and more importantly, it is the behavior of the leaders. The leaders set the tone of the dialogue in the organization, which is core to the culture and determine how well the organization will function.

Likewise, leaders get from their subordinates the behavior that they exhibit and tolerate. If the business leaders have a directive management style, then it results in a team that is dependent on receiving direction. This in turn inhibits innovation and initiative. To change the employee behavior, the behavior of the management team must change to start the process. In summary, to change the culture of the company it must be done by changing the behaviors of its leaders (Bossidy and Charan 2009, p. 105).

In a culture of execution, the leader of the business and his or her leadership team are deeply and personally engaged in the business and in the three core processes of execution: picking the leaders, setting the strategic direction, and conducting operations. It may be helpful for the manager to separate him or herself from the emotion and excuses that come with evaluating results and liken the assessment of individual tasks to operating a machine. Tasks are the things that the machine does, and the machine's output should match the goals of the company. Any variances determine how well the machine is operating. If the machine cannot produce the results desired, then either the design is flawed, or the people are flawed. The manager must be perceptive to know the problem.

Regardless of the size of the organization, leaders are not exempt from being engaged in the details and must embrace the issues or the business environment. They are the owners of the process and the output of their machine. Upon launching an initiative leaders and program sponsors must be personally involved in demonstrating their understanding of how things will work and the problems that come with implementation in order to make sound decisions. They must know their people, their capabilities, strengths, and the weaknesses within their teams and manage around them just as a sports team coach would do. The leader must make

clear his or her commitment to overcome any resistance and understands that execution cannot be delegated.

Leaders must be able to "make things happen" and be able to move from conceptual development to the deployment of critical details. (Unfortunately most leaders who rise to the top in business typically have gotten there by high-level thinking and are not concerned with the "how" of getting things done.) Organizations are only able to execute when the right people focus on the right details at the right time and by leaders being passionately engaged in the organization. Senior managers must be capable of higher-level thinking and seeing the "big picture" to call the plays of the game.

Sometimes leaders can have a hard time facing reality. They do not want to acknowledge the truth and frequently delegate the tasks of getting things done. They cannot set realistic goals in order to meet the objectives of the organization and cannot follow through on commitments. They drain the energy from the organization when they cannot deal honestly with business realities or give people upfront assessments. Sometimes leaders do not want to hear difficult information or accept points of view that are different from their own. They cannot deal with conflict or accept their own weaknesses. They have a difficult time being firm with people who are not performing. Some are crippled by emotional blockages that prevent them from doing the things that leadership requires and to make the company great. They sidestep controversy, procrastinate on decisions, and delegate without following through. If a leader cannot do these things, he or she cannot execute. The leadership as a whole must commit to do the difficult and uncomfortable things to make the company great and set the right example to change behaviors.

Look for leaders that are authentic and can build trust. They should be comfortable with their strengths and weaknesses and display a desire to learn from both their successes and mistakes and to sincerely want to learn from others. Putting the right people in the right jobs requires business maturity as the failure to deal with underperformers is a common problem in corporations. It is usually the results of the leader's own weaknesses. They typically have a difficult time hiring the best people because they will perform more effectively, bring new ideas, and energy. Weak leaders surround themselves with similarly weak individuals whom they can count on to be loyal and will exclude those who will challenge them with new thinking. Eventually, their limitations will destroy the leader and the organization.

An important part of a leader's job is passing on his or her knowledge, experience, and wisdom to the next generation of leaders. Manage by walking around; evaluate direct reports and their direct reports. Good leaders will regard every encounter as an opportunity to provide coaching by observing the person in action and then providing specific useful feedback on behaviors that are good or need to be changed. Education through coaching, formal training, and exposure to the right experiences expands the capabilities of the organization and fosters continuous improvement. The shared values of excellence and execution will again anchor the culture in the organization, while the mutual understanding creates long-term efficient relationships and resources with long tenures.

Getting things done through others is a fundamental leadership skill; however, there are many leaders who cannot do it. Some smother their people, blocking their initiative and creativity. Some are micromanagers who are insecure and cannot trust others to do the tasks correctly because they do not know how to monitor their performance. Others abandon their people and believe it is "delegating" to let people grow on their own or "sink or swim." All of these types reduce the capabilities of the organizations. Leaders who cannot work through others often end up putting in untold hours and pushing everyone else to do the same. Ultimately they will sink or burn out. Managing properly should feel like you have enough contact that you can assess a person's strengths and weaknesses to determine what guidance they need.

Included below are the most common reasons leaders fail to produce excellent results or fail to escalate an issue before it becomes a problem:

- The leader is too far removed from the detail of the business and the issues
- The leadership style of the leader drains energy from his or her group rather than creating energy
- The leader has problems distinguishing between acceptable and unacceptable quality differences. He or she settles for "good enough" when the business demands excellence.
- The leader has a high level of pride in his or her work and will not admit he or she cannot solve problems. The leader's pride overshadows the collaboration and delivery of excellence.
- The leader fears adverse consequences from admitting problems, mistakes, or failure

As stated earlier, in an environment of excellence and execution, problems and mistakes are good things if we learn from them and improve. Through learning comes constant improvement. Problems and mistakes are only bad if we do not diagnose them and allow them to repeat. The ultimate learning comes from paying attention to experience (Dalio, 2011).

GET THE RIGHT PEOPLE

Without the performance of people, a great strategy is only an idea; it is the people who make it real. Employee-related costs account for approximately 70% of a company's operating expenses and are responsible for driving 85% of a company's financial results through strategy execution (Berggren and Messick, 2012). Human capital is the greatest lever for performance today, and the most reliable resource for generating excellent results year after year. Putting the right people in the right jobs is critical for execution.

What is difficult is finding the right fit between the role and the person. People are best at the jobs that require what they do well. We recognize that people are different in their values (beliefs that motivate behaviors), abilities (thinking and behaving), and skills (learned tools). Values and abilities are unlikely to change over time; however, skills can change significantly and be acquired in a short period. In addition, the responsibilities of the role must complement how the person sees things and thinks: right-brain versus left-brain, big-picture versus details, memory versus reasoning decision makers, strong and weak visualization, perceivers and planners, linear thinkers versus lateral thinkers, emotional versus intellectually driven, risk taker versus risk averse, and introverts versus extraverts.

Success in creating a cultural change toward execution and excellence depends on having the right people and the right culture. To produce results, you first tell people the results you expect, then you discuss how to get those results by coaching, and then you reward them for producing the results. If they do not produce the desired results, additional coaching is provided, rewards are withdrawn, and/or they are given other jobs or released. When these things are done, you create a culture of getting things done. You also create a community where everyone is on a shared mission of excellence, and individuals recognize their importance and obligation to the whole organization.

Obviously not every employee is equally important to driving the business as different jobs contribute differently to both the top and the bottom line. Tasks that are delegated blur the lines of accountability and make it more difficult to promote based upon a person's ability to get things done and those that contribute at higher levels. Regardless, if you want people to produce specific results, reward them accordingly. Many organizations do a poor job of linking rewards to performance and do not distinguish between those who achieve results and those who do not. Few leaders can say that they have the tools that tell them what everyone is working on and how well they are performing. Organizations typically do not measure, do not reward, and do not promote people who know how to get things done. In addition, frequently there are no negative consequences for poor performance. A lack of insight into people's performance is amazing considering that people are the company's largest cost yet have the greatest influence on company performance.

Improvements in execution and productivity could mean real financial results and competitiveness:

- Everyone in the organization must understand the execution principle and practice the discipline. It is important to drive accountability and collaboration.
- All business processes must support the execution discipline. For example, recruitment tools and the reward system should focus on how well an individual can get things done.
- Hold people accountable for both excellence and truth. Asking, debating, discussing, decision making, and teaching are done by open-minded people to get to the right answers. Open-minded disagreements to get at truth should also be encouraged.
- Encourage subordinates to probe their manager, and managers are to constantly probe them to ensure understand that they working toward the business goals.
- Follow through by making assignments of who will do what and when. A lack of follow through is widespread in business and a major cause of poor execution.

It is essential to hire for excellence. Traditional interviews are not useful for identifying the qualities of leaders who execute. They generally focus on the sequence of events of an individual's career and outline the specific

assignments they have had. Instead, the interview should probe into one's accomplishments and what drives the candidate's ambitions. In addition, leaders should focus on hiring for the long term not just for their first job with the organization being mindful of the investment being made into human capital. It is recommended that you develop three to four non-negotiable criteria—values, abilities, and skills—that the person must be able to do in order to succeed. Remember, values (beliefs that motivate behaviors) and abilities (thinking and behaving) are unlikely to change over time; however, skills can be acquired in a short period of time.

Evaluate candidates on "how good is this person at getting things done?" and their energy for execution and then select the one who has demonstrated he or she is outstanding among one's peers and gets excited about doing things. Seek out those that value the pursuit of truth and excellence.

While it is more difficult to hire or promote a candidate who lacks the ability to get things done, the importance of character and good work habits is hugely underrated. It is critical to know each day what needs to be done and have the discipline to do it. People with good work habits have to-do lists, and they make themselves do what needs to be done. People with bad work habits react to the work they are assigned to do and are not able to complete the things they do not like to do. People with good work habits can reliably execute a plan. They tend to be self-disciplined and proactive. They are results-oriented and like to complete a goal.

INSTITUTE GOVERNANCE

The ability of an organization to bring a strategy to life and create a competitive advantage requires the organization to effectively assess the culture, leadership, human resources, and processes. The process piece of execution is rigorous in discussing the how and what, questioning for truth, following through, and ensuring accountability. It includes making assumptions about the business environment, assessing the organization's capabilities, linking strategy to operations, and having people who are going to implement it. Long-term output is broken down into short-term targets. The process piece of execution synchronizes the people and their various disciplines and links rewards to outcomes. This is sometimes referred to as the operating plan, which specifies how the various moving parts of the

business will be synchronized to achieve the targets, deals with trade-offs that need to be made, and determines contingencies for the things that can go wrong. The operating plan should be owned by everyone.

Unfortunately, most business organizations cannot execute well and frequently experience mediocre to poor results with errors, delays, low quality, and high overhead costs. Business-critical processes do not have a single point-of-responsibility manager assigned; processes are largely unmanaged, invisible, and unmeasured. They are executed haphazardly and inconsistently. Performance metrics either do not exist or are not enforced. In extreme cases few fully understand the product, service, or solution that a process actually provides (especially if they cross internal and external boundaries as part of their business networks).

This further helps to clarify why so many initiatives fail, are completed over budget, are not on schedule, or are unable to achieve the desired results. Unmanaged processes cannot detect and adapt to changing market conditions, which can be fatal in today's business environment.

Execution has not yet been recognized or taught as a discipline, but identifying process problems and mistakes are essential ingredients toward excellence and to adapt to changing market conditions. In discussing problems it is best to be specific rather than use generalizations. Probe deep to determine the root cause and determine the truth. Possibly the current resources are not capable of producing the desired results. If the people are flawed, then it is either an opportunity for learning or identifying resources that are no longer a fit in the organization. Remember that learning leads to excellence. If errors persist then probe deeper. In some cases, organizations are just not capable of maintaining the operations. People simply accept problems, or they are perceived as too difficult to fix. Drive open discussions and do not undermine personal accountability with vagueness by using antonyms such as "we" and "they." In addition, people should explore their disagreements, and dialog should be encouraged to get at the truth as it will result in better decisions especially if all parties have an open mind to the discussions.

The Governance Board, made up of various business leaders, can facilitate driving execution throughout the organization quickly and efficiently and address the obstacles that impede execution and excellence. More precisely the Governance Board is a corporate entity formed to enable "appropriate planning, scheduling, executing, monitoring, and controlling across the projects within the program to achieve program benefits" (PMI®, 2008, p. 6). The function of the Governance Board is to ensure

decision making and delivery management activities are focused on achieving strategic goals in a consistent manner, addressing applicable risks, and accomplishing stakeholder requirements. It includes establishing and adhering to the governance structure, a plan for audits, quality standards, approval of component initiation, oversight of accountability, delivery of benefits, change control, and coordination between implementation and operations (PMI®, 2008, p. 305).

Governance for programs is especially complex because the scope and impact of the strategy is complex. The Governance Board must first establish and then enforce policies that address common procedures and controls critical for execution in addition to ensuring that the culture, leadership, human resources, and processes support execution and excellence. Activities are completed through all phases of the program and include gate reviews such as or including strategic alignment, investment appraisal, benefit assessment, monitoring outcomes, health checks, issue escalation, audit, and quality (PMI®, 2008).

Instituting governance is critical to business success because without it, execution can fall short, and the benefits of the strategy are not fully realized. Governance is proactive. It monitors and controls the program changes and thereby controls operating expenses by making efficient use of resources that can drive increased financial results through competent strategy execution. Governance sets the framework to keep people focused even when responding to shifts in the plan. It facilitates synchronization, which is essential for execution and energizing the corporation.

The Governance Board has the responsibility to evaluate the organization's ability to execute including making assessments regarding the leadership team and offering suggestions for improvements. This will ensure that the leaders are engaged and in synch with their business and are setting the right example to positively influence the culture of the organization. The Governance Board can help leaders to recognize that all problems are symptoms of their root causes, so they should not be dealt with as one-off issues. (A root cause is a narrow reason; it is not a cause or an action.) Development of a systematic approach to diagnosing problems in which there is totally honest, collaborative discussion to get at the truth can be facilitated by the Governance Board. A best practice is to keep asking why and distinguish between a capacity issue and a capability issue.

The Governance Board may also sponsor evaluation tools such as performance management software, performance surveys, metrics, and formal reviews to measure and document the aspects of a program, a process, or

person's performance. The results will provide managers with the visibility to see what everyone is working on and how well they are performing. Stated again, people are the company's largest cost and have the greatest influence on organizational performance. The Governance Board can keep the organization focused on the goals despite the sometimes frequent changes in job functions and tasks, which can become overwhelming.

SUMMARY

Defining the culture, finding the right people, managing them to do great things, and solving problems creatively and systematically are challenges faced by all organizations. However, the gap between promises (what a company's leaders want to achieve) and the ability of their organization to produce the desired result is execution. The synchronization of a culture that values execution and excellence, engages the leadership, encourages the right behaviors, and institutes governance separates the companies that can consistently achieve their goals from those that cannot. The ability to execute is what allows organizations to respond to the fast pace of today's business environment and create value above their competition.

Today, resources are increasingly limited with lower budgets, less people, and less time. Businesses have to do more with less, and execution ensures the future. In identifying a plan for execution, build the organization around goals rather than around tasks, make people personally responsible for achieving these goals, make departments as self-sufficient as possible so that they have control over the resources they need to achieve the goals, have the clearest possible delineation of responsibilities and reporting lines, have agreed-upon goals and tasks that everyone knows (from the people in the departments to the people outside the departments who oversee them), and hold people accountable for achieving the goals and doing the tasks with excellence (Dalio, 2011.). Execution and excellence, when embraced by the corporation as a whole, are capable of efficiently responding to competition and an ever-changing business environment. Governance synchronizes processes and human resources while the discipline of execution mobilizes the entire organization.

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14

The Program Management Office (PgMO)

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INTRODUCTION

The acronym "PMO" is commonly used within the project management profession. However, it is not always consistently used in a way that accurately represents the same organizational construct or scope of responsibility. Most frequently the term PMO is used in connection with a Project Management Office because of in part its origins in the 1960s, the period during which the first structured PMOs appeared in the government and corporate workplace. In the 1980s, when the Project Management Professional (PMP®) credential was first launched, an increasing number of professional project managers were hired, and project management as a profession began to gain a foothold. This represented a major shift

(and win for project management) wherein project managers took a separate and distinct role within organizations, and functional or technical experts were no longer required to manage their own projects. New as the concept was, organizations took the most obvious and direct approach to organizing the project managers they hired by often creating a PMO structured with all project managers reporting to a central resource with the focus on supporting the projects.

Over the last three decades, project management has matured as a profession, as have the increasingly complex organizational constructs of PMOs. The PMO has far surpassed being a singular entity of project managers within an organization or having only one definition. In fact, variations of PMOs exist across industries, regions, and organizations. Variations range from those PMOs that remain a grouping of project managers, as often was the case in the 1960–1980s, to a distributed mature Program or Portfolio Management Office. The level of project management maturity within the organization is the primary differential in the construct of a PMO.

This chapter describes the Program Management Office (PgMO), program governance, key roles within the PgMO, considerations for establishing a PgMO, and key performance indicators. The chapter concludes with recommendations for establishing a PgMO.

WHAT IS A PROGRAM MANAGEMENT OFFICE?

In order to fully comprehend a PgMO, one should first have an understanding of a Project Management Office. A Project Management Office and a Program Management Office are not interchangeable. In fact, they are very different in both design and function. As mentioned in the introduction, PMOs began their rise within government and corporate settings in the 1960s. While it now performs different types of functions in different organizations, the PMO in an enterprise setting is focused on standardization of project management standards, practices and processes across the organization. In less mature organizational constructs, the project managers are often times aligned organizationally with the PMO. What is important to understand is that a PMO is focused on the management of projects.

A Program Management Office, often referred to as a PgMO to distinguish it from PMOs, have a focus on the management of programs. Many make the critical mistake of thinking of a program as merely a collection of related projects and therefore have difficulty distinguishing the scope and function of a PgMO from that of a PMO. Certainly, one component of any program is its related projects. However, programs are much more strategic in nature than projects and are much more than the aggregate sum of the projects that compose them.

According to the Project Management Institute (PMI® 2008), programs are defined as "a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually" (PMI®, 2008, p.5). The two most crucial aspects of this definition are "in a coordinated way" and "to obtain benefits and control not available from managing them individually." In order to be a program, as opposed to a collection of projects, the management of the projects comprising the program must be intentionally coordinated in a structured way as to enable the control and benefits that would not be afforded should the composing projects be separately managed. Realization of the program's benefits is the core focus of the program. In other words, a program is the means by which the business strategy (the benefits) is realized.

PgMOs are therefore focused on establishing processes, procedures, standard tools, and best practices for the management of programs and ensuring effective use of resources across the comprising projects. PgMOs are also focused on the integration of projects to achieve benefits. There is a natural crossover between Project and Program Management Offices, and the most mature organizations have learned how each can benefit the other. For example, the PgMOs may rely on the project management tools and resources from the PMO instead of creating new ones specific to each program or to procure additional human resources. This allows the PgMO to focus on creating only the tools, procedures, etc., that are program specific.

Both Project and Program Management Offices can be a fixture of the organization structure or may be a temporary organization focused solely on the execution of a single project or program. When the organization is temporary, as Rad and Levin (2002) state, that organization is the abbreviated form of the comprehensive organization and is often referred to as Project (or Program) office, without the term Management. Figure 14.1 provides one example of the organization of a PgMO.

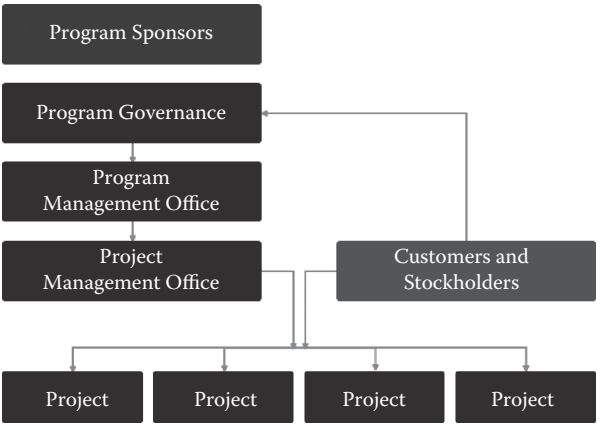


FIGURE 14.1
Organization of a PgMO.

PROGRAM GOVERNANCE

Programs serve as the link between business strategy and the mechanics needed to ensure that expected benefits are realized. However, because of the significant potential impact of programs, it is even more important to align the business and customers within the program than is the case with a project. This is the point at which program governance should be established. Program governance is a "steering committee" of sorts, comprised of executives from each stakeholder group (business, program, technology, etc.). When feasible, program governance should also include senior customer representation. The purpose of program governance is to provide direction and resolve escalated issues to ensure that the program benefits are realized. Having each stakeholder group represented will mitigate the risk against not fully assessing the impact of all governance decisions. There is no one definitive governance structure that universally applies to every organization. However, when establishing a program governance structure, there are a few guidelines to consider to ensure it is a balanced governance team. The number of representatives from each stakeholder group should be similar. This not only allows each stakeholder group to have representation, it also will avoid any potential

bias or "strong arming" if differences of opinion arise as to how certain tasks should move forward. Consider the following guidelines.

1. *Ensure that each governance team participant has an equal vote.* Often, especially when some organizationally different levels of resources are involved, some will concede to the opinion of higher levels rather than putting forth their actual opinions or concerns. This circumvents the format and functions of the governance structure and can lead to potential issues and breakdown of the structure.
2. *The Program governance team structure should account for corporate environment factors.* This means it should follow corporate procedures, for example, concerning communications and the organization's strategic plan.
3. *Key decision makers must be included.* In order to be effective, the program governance structure should be comprised of decision makers. A few decisions deferred to obtain additional information are expected; however, if many decisions cannot be reached without additional engagement from resources outside the structure, the governance structure should be revisited.
4. *Effectively facilitate and manage the routine(s) or processes that are established.* It is not necessary for the program manager to facilitate the routines. In fact, that is inadvisable. All governance routines should be facilitated by a person who can successfully keep the participants in check and on topic.
5. *Establish ground rules and expectations.* Ground rules and expectations should be agreed upon by each of the participants. What will be the format of presentations, how will agenda items be determined, what are exceptions, and who can request changes are only a few of the questions that should be addressed in the ground rules and expectations. Consider creating a charter for the governance structure, outlining the protocols by which the team will operate, including which procedures should be agreed upon by each participant.

Program governance is vital to the success of programs, and programs are the connection between the business strategy and the benefits. Program governance, when properly constructed, can mitigate against the

possibility of programs failing to maximize the opportunity to achieve the benefits they seek.

KEY ROLES WITHIN THE PROGRAM MANAGEMENT OFFICE

In most organizations, success depends on specialized and diverse skills sets across the roles. A PgMO is no exception and requires highly skilled resources in order to be effective. Identifying the required resources, gaining role clarity, and defining the working processes between those roles is critical to the success of the PgMO. The scope of the PgMO (program specific to an enterprise focus, organizational size, industry, and organizational maturity) are all factors that must be considered when designing the organizational construct and roles of the PgMO. The focus of a program is the coordination of projects to obtain benefits, and many of these benefits will be enabled by the roles, and the assignments the roles are designed to execute. Therefore, effective organizational design is a key success factor for the PgMO.

Taking into account the factors that influence the organizational design of the PgMO, not every role detailed below will pertain to every PgMO. In addition, based on the same factors and specific resources assigned to roles, some roles may be combined into the scope of one resource. Common roles in a PgMO include:

- *Program Management Executive*—While the title may or may not include executives or even "Program" for that matter, this role is that of the leader of the PgMO. This person will be responsible for managing the program managers, setting the policies of the PgMO, recruiting and acquiring resources, owning the metrics (Key Performance Indicators), and, ultimately being responsible for the management processes utilized within the PgMO and the programs. If a PgMO is new to an organization, often this person is the same as the person leading the implementation of the PgMO, but this is not always the case. Solid general management skills, an executive presence, in-depth knowledge of processes and procedures as well as program management experience will be critical for the role.

- *Program Manager*—The program managers are responsible for the program management function of the organization. While programs are comprised of projects, one should not automatically assume that effective project managers will make effective program managers. As previously mentioned, programs are focused on aligning resources and coordinating across several projects to maximize benefits. While some of the same core competencies are required of both project managers and program managers, a program manager must also excel at the program specific competencies, such as negotiation, influence, and strategic planning, in order to be successful.

Depending on the specific PgMO, the following additional roles may or may not report directly to the program manager.

1. Communication Manager—Effective communication is critical to the success of any project. Within the context of projects, it is commonly accepted that communications comprise 90% of project management. The same is true in program management, and even more than 90% of one's time may be spent communicating on programs. Depending on the size, complexity, and maturity of the PgMO, a communication manager may be utilized, separate from the program manager. The communication manager will be responsible for such activities as creating and maintaining a communication plan, drafting the communications, and often times sending (email) or posting (online) a portion of the communications related to the program. This resource may support one or more programs within the PgMO.
2. Training Resource(s)—All programs bring about change, and with change it is necessary to train the stakeholders on new processes, products, or procedures. Program resources also commonly change after the kick-off meeting. Therefore, a need also exists to train new program resources on the program-level policies and procedures. On large programs and within PgMOs, this responsibility should be external to the program manager and use qualified training resources. The training resource(s) will have responsibilities such as overseeing the development of materials required to train each stakeholder group, delivering training to the groups, and training new program or PgMO resources as they come on board.

3. Data and Reporting Analyst—The creation of reports and program dashboards is commonplace within a PgMO. Often, the program manager is tasked with creating the needed reports for his or her program. However, program managers often lack technical skills, thus requiring the specialized roles of a data and reporting analyst. If programs have a technical component, and, assuming a matching skillset is present, the analyst could also be leveraged to engage stakeholders and capture the reporting requirements for the component project(s).
4. Business Analyst—Similar to the data and reporting analyst, a PgMO may contain a business analyst. This role will be responsible for creating program charters, working with stakeholders to define requirements, and creating artifacts, such as the business requirements document or future processes.
    - *Program Support*—As with most organizations, PgMOs require support resources in order to be "well-run" and effective. The support resources for a PgMO will focus on such activities as coordinating meetings logistics, facilitating routines such as program team meetings and governance, keying in data, and maintaining the program repositories.
    - *Program Comptroller*—While program audits should be external to the PgMO, a comptroller or similar role may be utilized. The role will focus on reviewing the artifacts produced for quality and completeness, as well as reviewing the policies and procedures in place across the PgMO. If audited, the comptroller will work with the audit team to address any questions that may arise.
    - *Program Finance Analyst*—Programs and PgMOs require financing. The program finance analyst responsibility will be to maintain an accurate account of the finances across the PgMO and assigned programs.
    - *Project Manager*—Depending on the construct of the PgMO, most or all project managers may exist outside the PgMO structure. However, in some constructs, a PgMO may also contain project managers. The responsibility of the project manager(s) within a PgMO may be to manage the projects comprising programs or just to manage a work breakdown structure element of a specific program.

CONSIDERATIONS FOR ESTABLISHING A PROGRAM MANAGEMENT OFFICE

The benefits provided to organizations by a PgMO are well documented. However, the decision to establish a PgMO should be one that is not taken without due diligence as well as a complete and accurate organizational assessment. Within organizations where project management has not yet matured beyond level two of common processes, for example, attempting to implement a PgMO is not advised and can lead to disastrous outcomes. The Project Management Institute's Organizational Project Management Maturity Model (*OPM3*) can provide additional information of the best practices in place in the organization to help determine whether or not establishing a PgMO would be warranted.

Given the benefits associated with a PgMO, the following are some of the key considerations an organization should consider prior to undertaking its establishment.

1. How well are programs managed within the organization? A PgMO is not always the answer to a poorly managed program. If programs and their associated projects have a high rate of failure, or struggle to get 'across the finish line', meaning they lag to completion, more likely than not, these are warning indicators of underlying issues. The organizational assessment conducted as a part of the due diligence required before establishing a PgMO should isolate and expose such issues.
2. What are the stakeholder's attitudes toward program management? Even within organizations with well-performing program and project management processes, the attitudes of vital stakeholders toward program management can be negative. This negativity can stem from a myriad of causes and could be viewed by some negative stakeholders only as a necessity rather than as a value-added process. Implementing a PgMO when such attitudes exist can lead to issues.
3. How does the current portfolio of programs and projects relate to one another? A PgMO should not be established merely as a means to manage multiple projects under the premise of a program. As mentioned previously, programs are much more complex. However, if the organization has projects that often impact one another within

the portfolio, this should serve as an indicator that program management may be utilized to add value.

4. What is the internal tolerance for a PgMO? A PgMO will require that a governance structure be established. Having both program and project management viewed as value-added entities in the organization, and having key stakeholders view the requirements that will be imposed with a governance structure as adding value, will be leading indicators of organizational readiness for a PgMO.
5. What environment factors exists that may hinder or support a PgMO? In addition to stakeholders, are there other environmental factors that may impact the decision to establish a PgMO? For example, is a major organizational restructuring impending? The timing of establishing a PgMO is critical to its success. Starting the implementation of PgMO only to halt it before its implementation is complete could cause additional issues, if and when the decision to restart the process of implementing the structure occurs.
6. Does the organization currently have the required skills to both implement the PgMO and to staff it once it is operational? The required skills for establishing the PgMO and staffing are not the same as that of a PMO. Do not make the assumption the current resources can be utilized or up-skilled to fill the role requirements of a PgMO. Conduct a talent assessment across the organization and create a plan to procure the needed resources, either from internal or external sources.
7. Are required financial resources available to operationalize a PgMO? Starting and running a PgMO are not without significant costs. When making the assessment of whether or not to establish a PgMO, ensure adequate financial resources are in place, not only for the initial establishment but also for at least two to three years beyond its creation. Programs are strategic and can take many years to complete. The return on investment (ROI) on establishing a PgMO may take a proportionate amount of time. Be sure to plan for the financial support for the duration required to measure success factors and ROI.

The decision to implement a PgMO should never be rash and, in order to be effective, should also never be implemented as a means to manage multiple projects. A program manager should be considered a strategic partner of the business and a trusted resource within the PgMO. He or

she should not be looked at as a project manager who can manage multiple projects that are similar in nature but are not a program.

KEY PERFORMANCE INDICATORS

Key performance indicators (KPIs), or success measures as they are commonly called, can be as much an art as a science when it comes to PgMO. Often, when establishing the metrics, ample consideration is not given to how they will be used. This can lead to poor metrics that either are not utilized, or, even worse, that fail to provide a full and accurate picture of the processes or programs they encapsulate.

When defining the KPIs of the PgMO, several considerations should be taken.

1. Separate. A quality measurement system knows its bounds. Often, especially when first establishing a PgMO, the propensity is to include both the PMO processes and all program metrics in the KPI reporting. While it may be important to measure both, it is vital to separate the reporting. KPIs for the PgMO should include indicators from the programs but not detailed program-level metrics.
2. Evaluate. Prior to creating the KPIs for the PgMO, conduct an evaluation of both the stakeholders who will receive the metrics and the maturity level of the PgMO. A quality measurement system should provide the stakeholders with data of interest and in a format they understand. Additionally, the measures of any organization change as its level of maturity of changes. The KPIs of the PgMO should be on par with the level of its organizational maturity.
3. Meaningful**.** KPIs should be meaningful. One way to think of this is to ask the question, "How is the measure going to be used?" If it is difficult to answer that question, it is likely that the metric may not be suitable for measuring. Capturing and reporting on data that are not meaningful, while they may create a full dashboard, is not a healthy or sustainable behavior for the PgMO.
4. Define. Once the measures to be included in the KPIs are determined, define and document the metrics. This is often done through creating a data measurement plan. The data measurement plan should

include not only the metric definition, but also how the measure is calculated; the frequency with which it is measured; any specific fields and/or systems from which the data originates; and key roles, such as the project manager, on whom the data relies.

5. Communicate**.** When communicating KPIs, it is of the upmost importance to ensure that a plan is followed and those stakeholders receiving the KPI information fully comprehend what is presented to them. Distribution of the KPIs outside of the planned communication avenues creates risk in that recipients may not have a full comprehension of the data.
6. Execute**.** Although this may sound like a given, failures do occur in execution. Once the reporting frequencies are defined, the KPIs should be reported at that exact frequency. If system or other failures occur that prevent reporting, communications and other agreed-upon protocols should be enacted with the stakeholders. This is even more vital with systematic reporting. For example, if program KPIs are based on data from various systems in order to populate, and errors occur preventing the updates (system outage, failed data load, etc.), stakeholders should be alerted as available metrics become outdated or erroneous.
7. Adapt**.** Organizations mature, and stakeholders change. This is a given. An effective measurement system should be built to accommodate changes. Plan to review KPIs as stakeholders change, as well as on a defined schedule (every six months or at a minimum every two years). The review schedule will be based on organizational maturity. Generally, lower maturity will require more frequent reviews, such as every six months.

KPIs for the PgMO are a fundamental aspect of any organization. No process can be improved upon unless it is first measured, and PgMOs are no exception. Act with precision when defining the KPIs and be willing to adapt.

SUMMARY

Regardless of the type of PgMO being established, it will take considerable organization commitment in time and financial resources as well

as bearing risk to the organization. If the PgMO is unsuccessful, these opportunity costs are only compounded. The decision to implement a PgMO should never be considered without a full range of due diligence. This due diligence may include hiring outside consultants to perform an independent assessment of the organization, and internal stakeholders should be contacted to determine if the PgMO should in fact be established. If unanimous support and agreement as to the value, authority, and justification for establishing a PgMO do not exist, then caution should be utilized in establishing the PgMO.

Assuming there is underlying organizational support in favor of the PgMO, there are several recommendations to consider as the structure is being established:

1. Treat the establishment of the PgMO as a project. Rad and Levin (2002) offer this advice concerning the creation of a PMO; however, the same approach should hold true for establishing a PgMO. In the initiating phase, create a charter for the implementation and establish success criteria, timelines, and authority levels for the PgMO. The project of establishing a PgMO should mirror the rigor of other projects within the organization. The PgMO project should not be exempt from any tollgates or phase gates that are required for projects.
2. Understand the level of PgMO required. PgMOs can exist at many levels, ranging from a singular program to an Enterprise PgMO (EPgMO). Understanding the breadth of the PgMO being established is vital, especially when designing the processes, procedures, communication plan, and authority of the unit.
3. Weick (1984) detailed the effects of communicating wins, however small, on behavior. As evident in many areas of change management, communicating small wins can help build support for the change, keep stakeholders engaged, and lessen risk for the change. This "small win" strategy should be built into the communication plan for the PgMO project. Over-communication can be risky, especially if the medium is one-directional or is delivered via a 100% push strategy. Therefore, the frequency, medium, and "wins" that are communicated should be balanced and planned.
4. Align the right resource to implement the PgMO. This does not necessarily have to be the same person who will ultimately lead the PgMO. During the course of implementation, challenges will arise, team members will fail or decide to leave, stakeholders will change,

and business strategies may change. Having a leader during the implementation of the PgMO who can respond to the challenges, stay positive, and keep the team motivated and focused will be a key success factor. Day-to-day operations of the PgMO will require a similar but different skills set, but do not assume that in every case, the same resource asked to implement the PgMO will be the leader of the organization once it is established.

5. Plan the transition. While this should fall into the realm of treat the establishment of the PgMO as a project, it is worthy of mentioning on its own. Too often, projects fail to define a clear transition plan for when the project ends, and operation resources assume the role of supporting the new process, products, or outcome of the project. Define the closing criteria for moving from project phase to operational phase of the PgMO early. Allow time for knowledge transfer of processes, templates, and other artifacts to be created, especially if the resource leading the new organization is not the same as the leader for the implementation.

Establishing a PgMO will not come without difficulties and challenges. Be prepared, conduct the due diligence, and get the support needed prior to taking on the work. Launch the implementation of the PgMO as a project that follows the organization's project rigor.

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Program Management Office: Role and Challenges

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INTRODUCTION

A program, defined as a subset of the company's portfolio, comprising projects, operational work, and sometimes other programs, has many of the features and faces some of the complexities of the whole organization.

Program management derives its value by managing in an integrated and synergistic way multiple related projects. The entity, which sets the common language, makes the links, and provides basis for management decisions, is the Program Management Office (PMO).

As the *Standard for Program Management*, Second Edition (PMI®, 2008) states, the core of the PMO activity is:

- "Defining the program management processes that will be followed,
- Managing schedule and budget at the program level,
- Defining the quality standards for the program and the program's components,
- Providing document configuration management, and
- Providing centralized support for managing changes and tracking risks and issues." (p. 11)

Additionally, the PMO can create value for the organization by being actively involved in resource management, contract and procurement management, and other functions shared by the program's components.

This chapter will analyze the different PMO functions and show how each of them contribute to the performance of the program.

DEFINING THE PROGRAM MANAGEMENT PROCESSES

When part of a program, projects are not discrete, disjunctive initiatives but are linked together through their role in delivering the program benefits. The PMO has a central place in monitoring benefits realization both through projects and other program components, such as operations.

Using an analogy to communication networks, the PMO might be seen as a switch enabling exchanging information and sharing resources among the components. In order for components to be understood by the network, they must use the same communication protocol. The communication protocol in this case is the program management methodology, represented by processes and materialized in specific tools and templates. Communication protocols use REQ (request) and ACK (acknowledged) flags within their messages. The PMO is the entity receiving and acknowledging requests originating in programs and projects. The switch could be configured to assign different priorities to requests, based on a set of predefined criteria and rules—just as the PMO does. Last, but not least, the switch produces standard and custom made reports, which allow the administrator to optimize its configuration and the use of network resources.

Once it is established, the PMO's first priority is to develop and implement the standard methodology. The level of complexity of the processes must be scaled to the maturity of the organization. There is a fine line

between too little and too much process. Continuing with the network communications analogy, the defined processes must be looked at as best routes from the program's start to the intended result. They are meant to avoid network clashes, loops, or missing data. In the same manner, the program management process is the highway leading to the final program objective.

However, the methodology must be dynamic and driven by continuous improvement. A too rigid set of rules for managing the programs and their related projects could lead to inefficiencies and even blockages. This is the case where the processes are not fulfilling their support role but are acting as strong constraints instead. The focus has moved from the destination to the road itself. Program managers most probably do not feel valued and empowered to make the right decisions in their programs. The amount of bureaucracy increases considerably with no corresponding created value. The overhead costs push the program's performance down. There is a considerable risk that the program manager and governance structures lose track of strategic goals while monitoring and controlling the nuts and bolts affecting the program and its associated projects' time, budget, and scope.

In the opposite extreme, a much too relaxed set of processes would not allow for proper program management. Opportunities for new projects under the program must be weighed against the same set of criteria in order to allow for the selection of those initiatives that create more value to the organization. Project planning and resource allocation must be done in a coordinated way. As they are related, the projects within the program often share the same pool of human resources. The implementation plans must be synchronized as to allow for optimum utilization of people and skills. Risk management is the area where the impact of a missing defined process is most visible. Lessons learned are not shared within the program and with the rest of the organization. The cost of not having an effective and efficient PMO and standard methodology in place cumulates: non-conformance costs related to the products created and the management of the individual projects, higher costs of resources, and increased opportunity costs for unrealized efficiencies in the management of contracts and procurement are typical results.

Finding the right balance between rules and flexibility in the standard methodology is the goal of an effective PMO. The PMO should not only establish a methodology but demonstrate flexibility in encouraging program and project managers to use it. The members of the PMO should

be seen as critical drivers of business improvement—they must not just propose, implement, and apply a program management framework, but enable the company to improve its methodologies and strategic management maturity. The PMO staff must implement the program strategy by creating policies and procedures, acting as a single point of contact for initiation and support of projects throughout their execution, and assisting project managers when needed. The PMO must continuously watch for gaps in project planning, delivery, and risk assessment processes that lead to problems and non-conformance costs and address them with improvements of the methodology.

SELECTION OF PROGRAM COMPONENTS

The PMO defines and drives the selection of program components. Project selection must follow a standard methodology to ensure effective management of resources and alignment with strategic goals.

The criteria must be approved and the process fully supported by the leadership team. While return on investment (ROI) has its permanent place on this list, there are others which reflect the type of organization and its strategic direction. When developing the balanced scorecard for project selection by the program governance committee, the PMO should also consider the:

- Weight of strategic alignment criteria versus that of the ROI
- Intangible benefits, such as improved working conditions, ease of use, work force satisfaction, and improvement in corporate morale
- Dependencies and impact on other programs and projects in the organization
- Synergistic opportunities
- Business continuity aspects
- Legislation and regulatory standards

This process must be tailored to the company, and the PMO must routinely monitor active and proposed projects, and when appropriate, their programs, against corporate strategy.

MANAGING SCHEDULE AND BUDGET AT THE PROGRAM LEVEL

The PMO supports the program manager in developing the program schedule and plays an active role therefore in monitoring and controlling it. At the program level, the planning will remain at a high level with only the component milestones, which represent an output to the program or interdependencies between projects being shown and tracked.

The PMO does not play a central role but participates in planning the program. One of its key roles is to facilitate the efficient use of project resources but also operational resources. In order for the program schedule to be feasible and optimum, it must account for availability of skilled resources. When approved business cases for component projects define headcount requirements for further operating and supporting the product created after its go live date, the PMO must ensure those roles are staffed. If they cannot be staffed appropriately with people with the key competencies, knowledge, and skills, it becomes a widespread issue leading to inefficiencies within programs.

When planning the initiation of components within the program, the PMO must additionally consider dependencies on other projects, synergistic opportunities, and contribution to the program's bottom line; the ROI; availability of program funding; and benefits analysis. The components' detailed plans will then support the higher-level program master plan.

The PMO will ensure that progress reports of components follow a defined template, permitting easy aggregation and compilation of data at the program level. Most frequently, PMOs require measurable status on milestones, percent complete, and actual versus planned efforts and costs. As opposed to a portfolio status report, a program status report will show not only progress of components but also cross-impacts and interdependencies. Deviations in the delivery of one component will have a domino effect on other related components.

The following template is proposed to monitor the program's performance:

Component #	Component Name	Component Manager	Approved Budget

Gate 1		Gate 2		Gate 3		Gate 4		Gate 5	
Planned	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**

Escalations, Risks, Issues, Decisions Pending	Impacted by Component #	Impacts on Component #	# of Change Requests	# of Incoming Claims	Customer Satisfaction	Contributes to Benefit #	SPI	CPI

It is the PMO's responsibility to propose to the project managers and program managers a governance structure than can effectively provide a clear process and suitable tools for managing the schedule and budget. Program metrics are defined, and earned value management is recommended to track progress.

DEFINING THE QUALITY STANDARDS FOR THE PROGRAM AND THE PROGRAM'S COMPONENTS

The PMO will ensure that the organization's quality management policy, as well as the overall intentions and direction of an organization with regard to quality, as formally expressed by top management, is materialized into the program quality management system. The program's quality system represents the organizational structure, responsibilities, procedures, processes, and resources needed to implement quality management.

The program quality management plan usually defines:

- Quality metrics for the product
- Quality metrics for processes
- What, when, and by whom is to be checked

The nature of the quality assurance metrics that the PMO introduces into the program management environment heavily depends on the specifics of the program.

In some organizations the quality manager function sits within the PMO; in others there is a standalone position in charge of quality planning, assurance, and control. In both cases, though, there is a close collaboration between the two. Each deviation from the quality standards established generates either rework or decreased customer satisfaction—both leading to postponed or unachieved final acceptance, hence unrealized benefits.

Quality assurance metrics should include items such as quality variance values at interim checkpoints, number of project scope or solution changes, nonconformance costs associated with particular project teams and individual project managers, average customer acceptance rates and timing, and contribution of lessons learned to the program management knowledge base.

The quality manager function must also verify the project managers' deliverables conform to the established program management methodology. The number of non-conformities found in component projects and the average timing of their resolution represent relevant quality metrics for the PMO.

Quality assurance is done for each important deliverable but also at predefined stages in the projects. The gating process implies verifying the quality of the product's predefined milestones in the project and program life cycles. Gates have a common structure and consist of three main elements:

- Inputs: Deliverables as per a checklist built for each gate
- Criteria: Questions or metrics on which the prioritization and the stage gate decision is to be based (go/kill/hold/recycle)
- Outputs: Results of the gate review—a decision (go/kill/hold/recycle), along with an approved action plan for the next gate and a list of deliverables and date for the next gate

The PMO has the responsibility to check that the documentation submitted for quality reviews is complete and is in the required format. In addition to information on component deliverables, information on component interfaces and interdependencies on other program components must also be included.

Quality assurance feeds back into program management processes topics of improvement, as an application of W. Edward Deming's "Plan–Do–Check–Act" continuous improvement framework, as shown in Figure 15.1:



FIGURE 15.1
Plan, do, check, act cycle applied to program management.

PLAN:	Plan for improvements of the program management methodology
DO:	Implement the planned improvements on a small scale
CHECK:	Check to verify if changes produce the expected result
ACT:	Act to obtain the greatest benefits from changes

THE ROLE OF THE PMO IN RESOURCE MANAGEMENT

The PMO ensures that the program objectives are disseminated in the objectives of each project and that project managers' individual objectives are fully aligned. It plays an important role in evaluating the project managers' performance and assists in determining their career path within the organization. In order to ensure the program's overall performance, the PMO should base the project managers' appraisal process not only on budget, time, and scope, but also on realizing the benefits planned for his or her project as well as for the entire program.

However, aligning the project managers' objectives does not prove to be sufficient for granting positive results. The program governance board must work with the organization's top management to also align departmental objectives. By steering this alignment, the PMO can set the basis for collaboration toward meeting program's objectives, versus working in silos to meet individual goals.

With programs spanning longer periods of time than projects, many components usually handled by the resource managers are taken over by the PMO under the direct supervision of the program manager. While other resources may be assigned on part-time or temporary basis, the key technical resources are often assigned to programs on full-time basis. With the full-time approach, the PMO shares with the department managers the responsibility of maximizing resource utilization across the program's components.

Staff requirements are first identified at program inception and are therefore revisited with each reporting cycle. The PMO will receive performance status reports, resource requirements, and resource releases from each of the components and will perform a five-step process described below and shown in Figure 15.2:

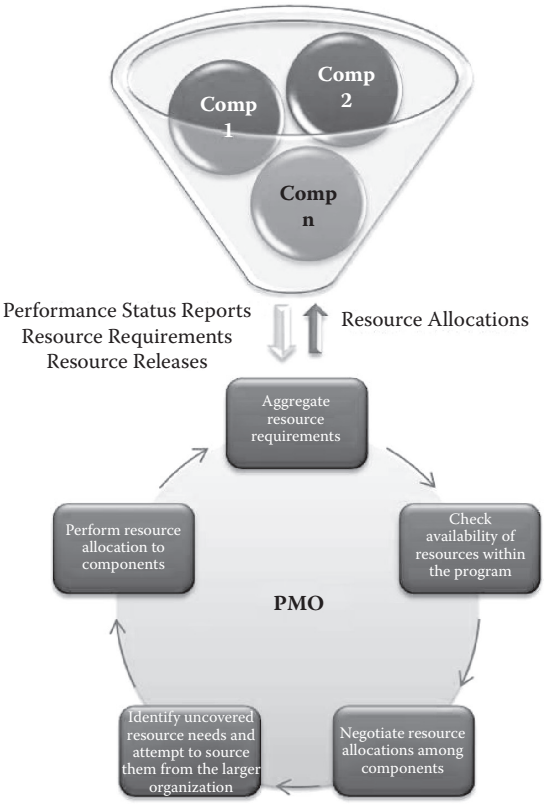


FIGURE 15.2
Resource allocation.

1. Aggregate resource requirements
2. Check availability of resources within the program
3. Negotiate resource allocations within the program, taking into account the performance of each component and its contribution to the realization of the program benefits
4. Identify those resource needs which cannot be covered from the pool managed by the program and attempt to source them from the larger organization
5. Perform resource allocation for the program components

THE PMO AND RISK MANAGEMENT

Risk management is one of the areas where managing related projects as a program as opposed to managing them individually creates tangible efficiencies.

Risk management planning at the program level includes strategies, tools, methods, reviews and re-assessment processes, metrics gathering, standard assessment parameters, and reporting requirements to be used by each project in the program.

The component projects' risk registers are consolidated into a program risk register, and further analysis is done to determine the cross-impact of risks on the components and the overall program. Risks also are checked for redundancy, as the same possible event could be identified in one or more program components independently. Provisioning risk budgets within each of the components could artificially increase the perception of the overall program risk and could lead to biased management decisions. On the other hand, disregarding the direct or indirect effect of one risk event on other program components could lead to under-evaluating the true risk impact.

The consolidated view might change the risks priority and justify changes in the response plans. Individual risk values are summed if they are encountered in multiple projects. The cost of preventive or contingent measures required to address the risks are optimized; therefore, the risk exposure calculated for the program is less than the sum of the components' risk exposures.

For example consider a program with a goal to implement an integrated management system in 42 hospitals. Each hospital implementation is

handled as a distinct project. The development of the core application and its centralized deployment are also managed as one project. The project manager for Hospital 1 identifies the following risk: "The emergency room (ER) medical staff might reject the new system, as they consider the user interface unfriendly." The proposed measure is to organize an additional training session for the ER staff in Hospital 1 and to offer on-site assistance in the ER for the first month after go live. Once the risk is raised to program level, it is recognized by all the other Hospital projects. The cost of organizing additional training sessions and dispatching project resources on-site for 24x7 coverage in all 16 hospitals is calculated to be higher than the cost of improving the user interface by changing its layout and adding contextual help.

Risks should be distinguished between events having a potential adverse impact and those having a potential positive impact or opportunity. In the example provided above, implementing the mitigation strategy would lead to a secondary positive impact at the program level: the simplified and self-explanatory interface could be implemented on mobile devices as well.

THE PMO IN MONITORING AND CONTROL

PMOs have different roles in different companies, but most stakeholders perceive monitoring and controlling of project and program performance as the most important role of the PMO. The PMO relieves the management structures of the cumbersome task of consolidating performance data from a large number of projects. The PMO structures and compiles the information to offer the foundation for management decisions. It is therefore of utmost importance that the PMO strives to continuously assess and improve the relevance of its reporting to the executive levels of the program and the organization.

As part of the standard methodology, the PMO establishes the content, format, and frequency for progress reports from individual components within the program. The information gathered is then consolidated and presented to the program governance structure for analysis and decision making.

Program performance is tracked through a program scorecard in terms of scope, master schedule, program budget, stakeholder expectations, risks, procurements, issues, and also benefits metrics. The reports must offer more than traditional information on project progress and provide

Program Benefit #	Benefit Description	Measurement	Target	Program Component	Budget	Status [Proposed, Approved, In Progress, Completed, Rejected]

FIGURE 15.3
Template to monitor mapping of program components to planned benefits.

high-level information on each and every project. They also should show a roadmap about how each project addresses strategic objectives.

This consistent approach to monitoring and controlling across all projects within the program allows for timely identification of issues, efficient handling of escalations, and intervening in projects where needed. Additionally, it enables the program management to assess the level of stakeholder satisfaction. Monitoring and revalidating component projects for strategic alignment should be done as an iterative process, especially since under the current volatility of the global economy, goals targeted tend to change more frequently.

The template in Figure 15.3 can be used to monitor mapping of program components to planned benefits.

In some organizations, the PMO is mostly perceived as an administrative support function, while in other organizations, the PMO employs senior project and program managers who act as a first escalation level for project managers and support them in dealing with difficult situations in their projects.

ORGANIZATIONAL PERFORMANCE AND PMO PERFORMANCE

As stakeholders are heterogeneous, representing different departments, roles, and have a wide range of interests, their expectations from the PMO in the organizational context are also diverse.

The PMO's contribution to organizational performance is mostly viewed through its role of supporting program management. The PMO is supposed to be in control, setting rules, and proving its authority but is also expected to show flexibility and adaptability. When projects run smoothly and as planned, the PMO meetings are perceived as inefficient and a waste of time, leading to frustrated project managers who must redundantly provide project status information through multiple venues.

On the other hand, when projects encounter difficulties, the PMO must be able to perform critical analysis and be seen as problem solvers. The PMO staff must be adaptable and able to "hit the ground running" on any project where their involvement is required. Because of its integrative role in the organization, the PMO has a high-level view of the work under way and planned in the organization, and its staff members then act as a bridge between project managers, the program manager, and the executives. It also has a social role: it encourages communication, knowledge, best practices, and lessons learned sharing across the organization. Often staff members in a PMO must use negotiation skills in order to resolve conflicts escalated to their level, mostly related to the use of shared resources or opposing stakeholder interests.

When the strategic and important projects of the organization are completed with success, the contribution of the PMO is recognized. As Aubry and Hobbs (2011) found, justification of PMOs is often challenged: "organizational performance is a subjective construct. … The organizational performance of PMOs will vary depending on who the evaluator is" (p. 4). For this particular reason, beside regular reports on the status of the program and its components, the PMO must also report regularly on its own activity and results to communicate and demonstrate its contribution and impact to the business.

It is critical, therefore, for the PMO leader to understand what the executive team values and how it can be delivered through the PMO. As Rad and Levin (2002) state "different types of PMOs solve different types of problems. Therefore, determining organizational objectives that are to be pursued as part of the PMO implementation and functions to be performed by the PMO is the first step in planning the implementation" (p. 157).

The PMO needs a clear charter and strong sponsorship within the organization, especially in weak matrices where project managers report to the different lines of business. The PMO's place in the organization must be clear with their responsibilities and limits of authority well defined

and communicated by the program sponsor. The PMO must be empowered by program management to act on its behalf in order to achieve the goals established. The PMO charter is the document which formalizes this empowerment and establishes the PMO objectives.

In order to derive the PMO's objectives and measures for success, a stakeholder analysis must be performed with the participation of the:

- Program governance board
- Portfolio managers
- Business unit managers
- Functional managers
- Project managers
- Project controllers, etc.

The PMO's contribution to the program's performance could materialize in amount of benefits realized, improvements in gross margin compared to internal benchmarks, reduction of time in the project's life cycle, more effective resource utilization rates, unused risk contingencies, reduction in non-conformance costs, reduction in audit non-conformities, increased client satisfaction levels, more streamlined processes and less bureaucracy, etc. Not having a PMO in place would result in inconsistent reporting, errors that are due to incorrect project data, and unaddressed program risks.

SUMMARY

Created upon program initiation, the PMO is given through its charter a clear mandate, role, responsibilities, and limits of authority within the organization. While being in charge with setting the rules and ensuring compliance, the PMO must prove flexibility and be perceived as a supporting function rather than a constraining function.

The PMO staff performs administrative tasks in gathering status data from component managers and consolidating them, but it also must be ready to resolve escalations or step forward when difficulties in projects require it to do so. The PMO must be able to micromanage but also to draw the big picture for upper management perusal. It creates links between component managers, with program management and stakeholders, and

with functional managers across the organization and outside the organizations when partners or subcontractors are involved.

It acknowledges and resolves requests for shared resources. It negotiates. If the program is a living structure, then the PMO is its pumping heart!

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16

Program Risk Management

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No noble thing can be done without risks.

Michel de Montaigne, French Philosopher and Writer

INTRODUCTION

The origin of the word "risk" hails from risqué and risicare, meaning to dare. Since mankind started to challenge the belief that the world was flat in the 15th century, there has been much advancement in thinking, both in technology and in other fields. One can argue, therefore, that when some risk was taken, when the outcome was positive, not only was risk good, but

it drove innovation. Over the course of your career, have you pushed the envelope on a program that advanced your or your company's knowledge? This is the same principle as the expeditions of the early explorers; when the outcome is positive, taking risks can yield great benefits.

In modern day parlance, risk is interchangeable with uncertainty. No program is without risk, and no project comes with absolute certainty. By definition, "a project is a temporary endeavor undertaken to create a unique product, service, or result" (PMI® 2008a, p. 5). The unique quality of the product, service, or result within the projects comprising the program has a direct correlation to the level of program risk involved. Are one or more projects in the program similar to other projects your organization has undertaken? Or are some of the projects something entirely unlike anything your organization has ever done? Is the program itself or program management new to your organization? Obviously, more risks are involved as the level of uniqueness increases. While uniqueness to your organization is one factor that adds risks to programs, there are many other factors such as the maturity level of your organizational processes, program selection criteria, the experience of the key resources, and environmental issues that can contribute to the risk involved.

This chapter describes risk, categories, and triggers of risks; the relationship of risk management between projects and programs; the importance of risk management; and risk communication planning. It presents the leading risk management processes, models, and tools and defines effective risk management. The chapter also concludes with recommendations to ensure effective risk management on programs.

WHAT IS RISK?

Risk has slightly different definitions, depending the context, on whom you ask, and that person's experience. In the finance and insurance industries, for example, risk is a calculation of the probability of a loss. However, when applied to program management, this is only half of the equation. Because of the non-infinite nature of programs, one must also be concerned with impact to the program and proximity of time. If the risk has a high probability of occurring, but the proximity as it relates to the program is in the closing stage, this risk will have a high probability of weighing on the overall impact, strategy, and the action taken for it.

In the context of program management, a risk is any uncertain event which, if it occurs, may positively or negatively impact your program's success criteria. Risk can be positive! For example, assume it is an election year in the locale of the construction site where you are managing the development of a multi-year, large construction program. The two leading candidates for the top political office differ on the means to raise revenue for the locale. Candidate A's position is to place new taxes on steel so new buildings will cost more to construct. Candidate B believes that this is not the right approach, and taxes should be lowered on steel and other material to encourage new construction. Obviously, the election outcome is a risk you need to manage on your program. However, if Candidate B wins, the outcome is positive to your program. These positive risks are referred to as opportunities, while negative risks are referred to as threats. Both positive and negative risks should have identified risk responses. Figure 16.1 illustrates possible risk responses.

Risks may be present at the program level or at one or more of the project levels. It is important to understand that not all program level risks aggregate up from the projects. Program level risks not present on any one project do exist, and if not effectively managed, have the potential to derail your program.

One must also be aware of the risk tolerance of the organization and stakeholders. Risk tolerance (often referred to as risk appetite) is the level of risk that an organization or stakeholder is prepared to accept, before action is deemed necessary to reduce it. Stakeholders may have a different risk tolerance than that of the overall organization, so be aware and document the tolerance levels when you conduct your stakeholder analysis.

Up until this point, the risks discussed are primary risks. Within program management, one must also be aware of and manage both residual risks and secondary risks. Residual risk is the amount of risk remaining after a risk response has been implemented. Secondary risk is a new risk resulting from the implementation of a risk response. Primary, secondary and residual risks should all be detailed within the risk register for effective management.

RISK CATEGORIES, TRIGGERS, AND THE RISK REGISTER

Specific categories for program risks will vary depending on such factors as risk tolerance, industry, maturity of processes, and other issues. What

	Risk Response	Description	Example
Positive risks (opportunities)	Exploit	This strategy is a deliberate effort made in order to remove the uncertainty of the risk.	Assigning the best resources to the program.
	Share	This strategy takes steps to divide the responsibility and benefit with a third party.	Establishing a joint-venture with a marketing company to promote your new product.
	Enhance	This strategy focuses on identifying and maximizing key drivers, in order to increase the probability and/or impact of the opportunity.	Adding additional resources to achieve greater benefits from the activity.
Negative risks (threats)	Avoid	This strategy is to remove the problem.	Changing the requirements of the program to remove the activity.
	Transfer	This strategy assigns the risk to another party.	Contracting the work of the activity to an outside firm or buying insurance.
	Mitigate	This strategy focuses on reducing the probability and/or impact of the risk.	Requiring only certified resources perform critical activities.
Both positive and negative	Acceptance	This strategy is to be aware of the risk and choose to do nothing. If the risk occurs, you will deal with either the threat or opportunity as necessary.	Determining if the performing organization goes bankrupt, the program will stop.

FIGURE 16.1
Risk response strategy table.

is important to your program is that the categories are both agreed upon and used consistently across the entire program. If certain projects within the program will not have specific categories (such as technology risks—if the project does not have a technology component), the categories should not be used on that project or referenced in that specific project's risk register. Common categories of risk to consider include operational,

process, project, environmental, regulatory, resource and technology. The performing organization of the program typically will determine the categories of risks for the program.

Risk triggers are indications the risk occurred or is about to occur. For example, building on the example previously used concerning the two political candidates, a risk trigger may include one of the candidates gaining more than 50% of the pre-election support within the locale.

Risk triggers and categories should be used in the risk register. A risk register is a document that contains all the identified risks for the program and its projects as well as analysis and risk response planning information. The most commonly used risk register is an Excel spreadsheet or a similar document. Minimally, the risk register should contain: Unique Risk Identification Number, Risk Description, Risk Owner, Category, Who Identified, Date Identified, Last Updated Date, Mitigation Strategy, Completed Actions, Status, and Analysis Data, such as probability, impact and time proximity. An example of a risk register is shown in Figure 16.2.

THE RELATIONSHIP OF RISK MANAGEMENT BETWEEN PROJECTS AND PROGRAMS

Program risks can emerge from a variety of sources and are not solely an aggregate of the project risks from within the program. Certainly, project risks are one area in which program risks are found. However, in addition to risks aggregated to the program from one or more projects, a program can also have a risk specific to the program that is not present at any of the project levels. Figure 16.3 illustrates the relationship of risks between program and projects.

Often many program managers will aggregate all project risks to the program and attempt to manage them. However, this can be time consuming and counterproductive. Yes, all project risks do have the potential to impact the program; however, if the time is taken to properly set up effective risk processes and procedures at the project level, it will minimize the number of risks requiring resources from the program. The program will have the aggregate of all program risks but should focus the program resources only as needed and not on managing all the risks from within the projects. For example, the program will need to tailor the risk processes and enable them across all projects comprising the program.

Risk ID	Description	Category	Date Identified	Who Identified	Risk Owner	Status	Probability	Impact	Proximity	Risk Strategy	Completed Actions	Last Updated Date	Notes
1.1	Election results in the locale may result in the passage of new legislation, which would increase the cost of raw material.	Cost	8/6/2011	Katerina Smith	Annette Miller	Open	4	4	5	Mitigate—Corporate support provided to the campaign of candidate B.	Monetary support provided to candidate B's campaign.	9/12/2011	N/A

FIGURE 16.2
Risk register example.



FIGURE 16.3
Relationship between program risks and project risks.

If the processes are effective in risk identification and analysis, as shown in a risk audit, then fewer risks should be aggregated to the program for management. The project team should be accountable to perform risk responses according to the agreed-upon risk threshold. Only risks above the project's threshold should be aggregated to the program to manage. The program manager should be aware of all the risks on each project and ensure that proper audits and processes are being followed but should not be performing analysis and strategies for each risk on every project.

A risk audit is an independent review of the risk processes utilized on the program. The audit may be conducted by resources external to the program. The focus of the risk audit should be to identify if the right amount of controls and processes are utilized across the risk processes. The auditor or audit team may also offer suggestions about the risk processes on the program following the audit. Based upon the findings, and the duration of the program, a risk audit may be appropriate to conduct frequently during a program.

THE IMPORTANCE OF PROGRAM RISK MANAGEMENT

Risk management in the corporate setting has existed for a great number of years. Within the insurance and finance industries, risks and managing risks are the cornerstone of their business models. Without risk management, insurance and finance companies would cease to exist. The same holds true for programs; without risk management, programs will fail. This is why risk management is such a crucial aspect of program management. The importance of effectively managing programs to drive business results has been recognized as a key success factor by many executives

and business leaders in all industries. However, it is basically impossible to separate 'Risk Management' from 'Effective Program Management.' In order to be effective with program management, one must be effective with risk management.

Many factors influence the success or failure of a program. However, when looking for what separates the most effective programs from the others, one of the major factors is risk management. If the project teams within the program manage risks seriously, projects are more likely to succeed, and therefore, programs are more likely to succeed. Managing risk is the role of every person on the projects and is not the responsibility of only the project managers or the program manager.

RISK COMMUNICATION PLANNING

Foremost, a risk communication plan should be included in the overall program communication plan. This chapter is not intended to cover program communication planning but rather to serve as a guideline for planning the specific communications on risks. However, when planning communications on risks, one must assess the impact across the entire program. Communicating before an adequate impact assessment is performed is risky, and oftentimes leads to rework, and in turn, more issues on the program. A few questions will help guide the team in the impact assessment and plan specific risk communications:

- Was the risk escalated from the project, or was it identified at the program level?
- What actions have already been taken on the risk?
- Was an adequate stakeholder analysis performed at the project level?
- What are the impacts to the program as well as the projects, how are they impacted, and what is the expected timing of the impact?
- Who are all the stakeholders, and what do they need to know specific to the risk?

Of course, the preceding is not an exhaustive list of questions that must be answered before communications occur. They are intended only to provide a framework for the program team to begin to draft risk communications in accordance with the communication plan. Should a "heads up"

communication be sent to certain stakeholders? How should the communication be delivered to different stakeholders? All of these questions must also be considered and included in the program communication plan.

There are often constraints present in the organization and program that prevent or hinder risk communication. Hopefully, when performing risk identification, these risks are identified, listed on the risk register, and actively managed. However, a word of caution: use your judgment on what is shared and with whom. The micromanagement style of your sponsor may be a risk; however, you should use caution with whom you share this risk, and the details of the strategy you will take with the risk. Common risk communication constraints can include:

- *Being overly optimistic*. The last time I checked, all project and program managers are human, despite what our self-assessments may indicate. As humans, we have a natural tendency to be overly optimistic in the probability and/or impact, and our own ability to mitigate the risk before it becomes an issue. Be a realist both in risk assessment and your ability. Try to remove as much subjectivity as possible when it comes to risk. Not identifying risks on a program or, even worse, being aware of risks and not managing them with your stakeholders and having them later become issues, is not effective risk management and will likely result in adverse personal and program results.
- *Ineffective risk processes*. Risk processes should be as unconstrained as possible to allow for the greatest probability of risk identification. One tool of risk identification, which is covered later in this chapter, is expert judgment. As a program manager, you must allow for the input of experts from across the program and not expect that you, or a handful of select resources, should bear all the responsibility of risk identification. When structuring the risk processes, do so in such a manner as to allow for risk identification and qualitative and/or quantitative analysis in the most efficient manner.
- *Limited resources*. Often program resources are limited, and the allocation of time spent on managing risk is reduced. This can especially be true in organizations with mature processes. The team may begin to take the 'we have done this before; we know what we are doing' approach and fail to allocate ample resources to risk management. Having limited resources is a risk; however, regarding communication, limited resources may prevent early risk identification and timely communications.

- *Competency of the program manager/project manager.* The project managers leading the projects within the program are vital to risk management. The project managers must follow established procedures and not be afraid to communicate risk to the program manager or others (following those established procedures). The same is true for the program manager. He or she must have the competency to manage all the processes of the program and, in particular, the risks. Effective program managers have a unique ability to almost foresee risks that others may not. This ability comes from experience managing similar programs as well as the competence of the person. It is either present or not and cannot be taught.
- *Organization factors.* Many organization factors can hinder risk processes. Dominance of power in the organization, risk appetite, and the organizational structure relative to the program will all have a bearing on risk identification and analysis. The program manager should conduct an analysis of the organization and stakeholders and build the risk processes specific to the program with these factors in mind.

Communicating risks means that, at times, we must have difficult conversations with stakeholders on our program. Be prepared and be confident that you have the ability to perform the needed communications effectively. If you cannot confidently communicate to specific stakeholders, plan for this situation by having someone higher in your organization deliver the communications or make other arrangements.

COMMON RISK PROCESSES, TOOLS, AND TECHNIQUES

While there are several variations of risk models—the one example most common in program management is the five processes of risk management as detailed in the *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* 4th edition (PMI® 2008a). These processes are: Risk Planning, Identify Risk, Qualitative Analysis, Quantitative Analysis, Response Planning, and Monitoring and Controlling. Several other processes do exist, but are similar enough, and the aforementioned is a tried and tested process for managing risk.

Risk Planning—Risk planning is the "process of defining how to conduct risk management activities" (PMI® 2008a, p. 276). The planning should be conducted during program initiating and included in the overall program management plan. When planning program risk, be sure to factor in specific environmental factors and organizational process assets unique to your organization.

Identify Risk—Identifying risk involves both the determination of which risks may affect your program as well as documenting their characteristics. Anyone on the program can and should be involved in the risk identification activities. If your organization lacks mature processes, or has limited internal expertise, consider the benefits of hiring external subject matter experts to participate in risk identification.

Qualitative Analysis—Qualitative analysis is the "process of prioritizing risks for further analysis" (PMI®, 2008a, p. 289). All risks should be prioritized; therefore, a qualitative analysis should be performed. The identified risks should be captured on the risk register, and the team should perform the qualitative analysis to update the probability and impact of the risks. The qualitative analysis should be performed throughout the program life cycle and not as a one-time activity as events can occur that will impact the probability, impact or both factors of risks.

Quantitative Analysis—Quantitative analysis is the process of quantifying the impact of the risk to the program through numeric analysis. Quantitative analysis follows qualitative; however, it is not necessarily performed for all risks. If, for example, identified risks have a low probability of occurrence, and low impact to the program, the resources required to conduct quantitative analysis may be better used elsewhere. Since it is a timely and resource-intensive process, it is important to use quantitative analysis only for the most significant risks that may affect your program.

Response Planning—Response planning is developing options and actions for identified risks. The types of responses were highlighted earlier in the chapter. In additional specific responses, response planning should also assign a risk owner to each risk. This risk owner then will be responsible for ensuring the execution of the risk response and for closing it in the register when it is appropriate to do so.

Monitoring and Controlling—Monitoring and controlling risk is an iterative and ongoing process for the program. During monitoring and

controlling risk, risks are tracked, responses are implemented, new risks are identified, and residual and secondary risks are monitored.

While the following is not a complete list of the tools and techniques used within the PMI® risk process, it does represent some of the more common tools and techniques.

Expert Judgment—Do not discount the use of expert judgment in managing program risk. Not only is this the most subjective tool, it can also be one of the best tools for risk identification and analysis. The program manager should take all reasonable steps to ensure available expert judgment is utilized in the risk processes. This expert judgment, in this case, is not limited only to the resources assigned to the program. The expert judgment frequently uses people external to the program from resources such as paid consultants (subject-matter experts), published statistics, databases, and industry standards.

Risk Categories (RBS)—A risk breakdown structure (RBS) is a visual representation of risk categories and sub-categories. Creating a RBS can assist the program team in the identification of risks just as an iterative approach to brainstorming sessions can help identify new risks. The Program level RBS should be an aggregate of the project level RBSs; however, the RBS used on each project within the program may be different. For example, one project may not have a technology category of risks, while another project within the program does have this category.

Brainstorming—According the *PMBOK® Guide*, (PMI®, 2008a) brainstorming is a general data gathering and creativity technique that can be used to identify risks, ideas, or solutions to issues by using a group of team members or subject-matter experts. This technique can be used effectively to identify risks as long as the program manager sets up the right environment for the brainstorming session. Be sure to remove any obstacles that may prevent the free flow of ideas in the session and consider using other tools along with brainstorming, such as the RBS.

FMEA (Failure Mode and Effects Analysis)—A FMEA is a common Six Sigma tool, but it is not generally listed in most program management literature as a risk tool. A FMEA is a tool used to analyze the potential failure modes by the severity and likelihood of the failures. In other words, it is an expanded probability impact table. It is due to this expansion that it warrants being called out on its own. The FMEA is centered on three ratings: Occurrence, Severity, and Detection.

Occurrence is the probability the event will occur. Severity is the impact if the event should occur. Detection measures the risk that the event will escape detection during the planned inspection/testing. A risk priority number (RPN) is calculated by multiplying the ratings of Occurrence, Severity, and Detection. (RPN = O*S*D) Program resources should be allocated to events with the highest RPN.

Monte Carlo—is a software simulation technique used to simulate project characteristics, such as cost and schedule. The outcome generates a probability distribution for the entire program. It is a key quantitative risk analysis approach.

Probability Tables—are generated from the Monte Carlo technique. These tools will allow you to take some level of subjectivity out of the event. The probability table will have the confidence level of the event and its resulting impact (time or costs). Probability tables can be effective, not only in the analysis of risks, but also in communicating risks. For example, after you have generated a probability table, you will be able to include the data in your communications. Being able to communicate that you are 90% confident that, if the event occurs, it will have an impact of x, is more assuring to your stakeholders than merely reporting the expected impact of the event.

Probability/Impact Matrix—is a two-dimensional graph of the probability of the event and the resulting impact should it occur. This tool allows the program resources to focus on the events with the highest potential probability of occurrence or greatest impact on the program. Program resources should focus on the risks that fall into the upper right quadrant, which have the potential greatest impact on the program. An example of the probability impact matrix is shown in Figure 16.4.

Decision Tree and Expected Monetary Value (EVM)—Decision-tree analysis is focused on evaluating the probability and impact of all decisions, and calculating the expected monetary value of the whole. The sum of all the probabilities within the decision tree must equal 1.0 (or 100%). As an example, critical activities on your program must be performed on time. If you utilize existing internal resources, the cost to complete the activities is estimated at $600, but there is a 70% chance of requiring rework because of the experience of the resource. The cost to complete with the rework using the internal resource is estimated at $1,000. You have the option to hire an external consultant to perform the activities instead of the internal resource. If the



FIGURE 16.4
Probability/impact matrix.

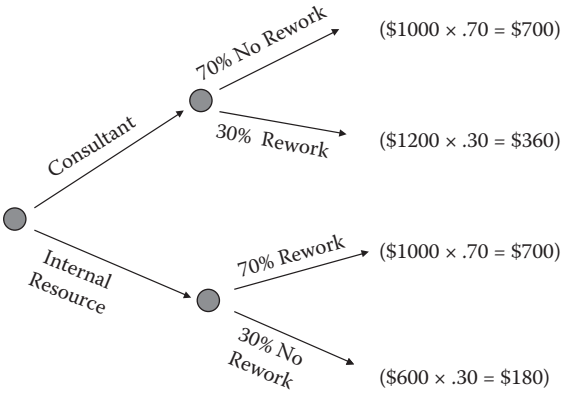


FIGURE 16.5
Example of a decision-tree analysis.

consultant performs the activities, it will cost $1,000 if no rework is required, such as a 70% chance of occurring. Should rework be required with the consultant, the total activity costs will be $1,200. Which resource do you use? Using the decision tree will quantify decisions. Figure 16.5 illustrates the Expected (EV) of the consultant is $1,060, while the EV for the internal resource is $880. Therefore, given the example, for these program activities, you should utilize the internal resource, as there is a lower EVM based on the decision tree.

Variance and Trend Analysis—Variance and trend analysis are effective tools to identify areas of concern on a program. The variance analysis is a comparison of the planned to the actual, while trend

analysis will show the variances over time. These tools can quantify the risk for your program. If the variances continue trending in a negative way, the tools will quantify this risk and assist in communicating the issue to your stakeholders.

Risk Audits—Risk audits are reviews of the risk processes in place across the program to ensure the risk processes are performing the intended goal (identification, analysis, etc.). The auditor must be objective and, often times, is the project manager for the assigned project or is the program manager overseeing the projects. They also can be conducted by a member of a Program or Project Management Office, if one exists in the organization. Be sure to follow organizational processes, as there may be an external team that performs the audits. If there is not a risk audit team, and the program or project manager cannot be objective, consider engaging an external auditor, especially if the program is of high value to your organization.

WHAT IS EFFECTIVE RISK MANAGEMENT?

As mentioned previously, effective program management cannot exist without effective risk management. This leads one to ask, what is effective risk management? Is effective risk management following the risks procedures established within your organization? See Figure 16.6. If only it were all that easy; there would be far fewer troubled projects and programs! To begin, effective risk management should be proactive. If one spends a great deal of time 'firefighting' or reacting to issues that previously have not been identified as potential risks to your program, these are two warning signs that effective risk management processes are not in place. The following scenario explains the importance of risk management processes.

Imagine that you are a passenger on a cruise ship destined to cross the Atlantic Ocean in 10 days. Before it weighs anchor, risk management has already begun. The sales office has identified a risk associated with its project within the program (ticket sales). The cruise itself is yet another project in the program; its captain serves as a project manager. Is there a storm in his or her path that he or she must steer around? Are all the roles needed to ensure smooth sailing able and ready for the cruise? The Captain has performed risk identification, charted the course based on the known risks, and communicated the risk to the program per procedures. Now



FIGURE 16.6
The importance of risk management.

fast forward to day three on the cruise. Arrg; a captain of another cruise ship spotted a pirate ship headed toward the ship you are aboard. Are you willing to accept having the other Captain wait until the next day to report or review the risk with your program team? Are you satisfied that effective risk management has taken place across the program? Certainly not! Therefore, the risk management processes for a program should be built around three critical factors. The processes should focus on continuous improvement, risk identification should include resources internal and external to the program, and risks should be continuously reviewed and updated by the program team. If the risk processes do not contain a mechanism for quickly adding and analyzing previously unknown risks, or if the team is not constantly reviewing the risk register for changes (not only after approved change controls or mitigation steps), and actively monitoring and controlling risks throughout the program, the team is not effectively managing risks.

So having established what effective risk management is, how does one ensure that it is being followed on his or her program? Here are nine recommended suggestions to consider about risk management processes and procedures within a program:

1. **Design the procedures and processes for efficiency.** Risk procedures and processes should be designed for efficiency. Too many control points built into the procedures will often prevent the timely identification and analysis of risk. Risks reported on the projects should have a governance process and procedure for escalating to the program when defined thresholds are breached. In most situations, the time spent to conduct qualitative analysis on all risks identified is far less than allowing risks to transpire into issues and having to react to them.
2. **Start with a clean slate for your risk registers.** Too often, especially in the cases of low maturity of processes and/or less experienced resources, artifacts are overly relied upon to identify risks on projects. Artifacts are a good source to help the teams identify risks. However, do not let artifacts provide a false sense of security in risk identification. Instead, consider risks using templates, risk databases, and historical information and use them for the high-level risks in the initiating phase. If you review your risk registers of projects and your program and find that more than 50% of the identified risks were added from artifacts, it should serve as a warning sign that you may not have effective risk management processes across your program.
3. **Ensure that the right roles and people are resourced across the program.** Arguably, there are five traits that one must possess in order to be effective with risk management: influence, communication, motivation, organizational skills, and strategic thinking. These traits will facilitate buy-in for the risk management processes, including identifying risks, working with all stakeholders, and managing the risk processes. If the program manager does not possess these traits, a best practice is for the program manager to consider assigning a risk lead as part of his or her core team for the program. The risk lead will be accountable for working with the project teams to identify risks, setting up the risk processes, ensuring that the risks are reviewed/updated in project routines, and ensuring upper level commitment to risk management. The risk lead should be a peer to the program manager. If a risk lead is assigned, the program manager serves as the hub of information when it comes to risk management.
4. **Conduct a brainstorming session to identify risks.** Early in the planning of the program, after your team has been assembled, you should conduct a brainstorming session to identify risks. The way you structure the session is as important as conducting the session.

Understanding of the team, cultures, and other factors is critical to setting up the session. The program manager (or risk lead) should facilitate the session only if they are qualified. Facilitation should ensure that each attendee has an equal opportunity to add risks from his or her own area of focus and not allow any one team member's input to dominate. This is the essence of good facilitation. If facilitation is not a skill present in someone on the team, bring in a person external to the program with this skill specifically to facilitate the risk session. Once the risks are identified, the team should then focus on the qualitative analysis and risk prioritization.

5. **Tailor the risk processes based on the complexity of the program.** The core risk management processes you utilize should not change based on the complexity of the program; these core processes being open and honest risk planning, identification, qualitative analysis, quantitative analysis, response planning, and monitoring and controlling. However, the procedures you design to enable the processes and the tools used should be tailored based on program complexity. If the program is relatively short in duration and of low complexity, the threshold for performing quantitative analysis, for example, should be less than that of longer, more complex programs.
6. **Embed risk reviews into all your team procedures.** As the program manager, you need to ensure that risk processes are properly embedded into both the program procedures and the procedures of the projects within the program. If project routines become constrained in terms of the schedule, risk processes should not be the agenda item that is removed. In this case, as program manager, you should work with the project team to either prioritize what each team routine is covering or add additional routines as needed.
7. **Be accepting of change.** If you implement risk processes and procedures, and later within the program find they are not working, do not delay in making changes. Some warning signs may be the unusually high use of standard 'cookie cutter' risks on a specific project or a low number of risks being reported proportionate to the project. Recognize what works well for one project may not work in exactly the same way for another within the program. Be cautious in changing project managers within the program. Only in limited situations is it advisable to change the project manager during the course of a project. Often times, it can cause more risks and issues than it corrects. However, if you conduct an assessment of the projects, and

find that the cause of ineffective risk processes is the project manager, it should be either a coaching opportunity or cause to replace the project manager, based on the severity of the specific situation.

8. **Foster an open and honest environment.** Ensure that each project within the program is fostering an open and honest environment. The program manager should conduct periodic reviews with the stakeholders and team members of the projects to get feedback. If impediments are found to this environment as it relates to risk processes, the program manager needs to move quickly to remove them.
9. **Obtain upper management support for your risk processes.** Frequently, program risks processes fail to get the support of upper management, leading to risk and issues. The program manager should design the procedures and processes, obtain upper level management approval and commitment on them, and then work to implement the procedures and processes across the program.

SUMMARY

Effective program risk management is as much an art as it is a science. It takes time and a concerted effort to perfect. When risk management is done well, it helps ensure that the 'appetite for risk' is appropriately understood at the start; that all risks are agreed upon, prioritized, assessed, communicated and understood in alignment with this 'risk appetite'; and that you have a solid platform to track agreed-upon actions, including escalation up the management chain if necessary. There will always be the potential of previously unknown risks arising within a program. However, the better your risk processes are, including the flexibility to change, and the more actively you manage risk throughout the program life cycle, the better placed the program will be to realize positive risks and minimize the negative ones.

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17

Program Manager Competencies

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INTRODUCTION

Peak performance is King! Organizations strive to achieve it in their financial performance, in their factory line performance, in their departmental or business unit performance, in their sales performance, and in their program and project execution and delivery. However, bottom line, it all comes down to the performance of the individuals. Sustained peak performance is only achievable through creating and building high-performing teams, but the team's performance is also ultimately dependent on the performance of the individual members.

Take a closer look at performance and its constituents by deconstructing it. Using Marshall and McHardy's model (1999), performance is defined as follows:

$$\text{Performance} = \text{Talent} \times \text{Attitude} \times \text{Opportunity},$$

where

Talent = Inherent talent and trainable talent
Attitude = Habits of thought and habits of behavior
Opportunity = Fit with the organization and fit with the job

It is important to notice that the three constituents of talent, attitude, and opportunity are multiplied in this formula, and a low in one will have an adverse impact on the overall performance much more than if they were added. While we can play with weighting factors and other fun mathematical tricks to develop a quantitative model, the conceptual model will serve us well for now.

In this formula, first concentrate on the three components that are most directly contribute to the competency of an individual:

- Trainable talent
- Habits of thought
- Habits of behavior

As early as 1970s, the term *competency* started appearing in the vernacular of management, defining it as the ability of an individual to do a job right, or as a set of skills, knowledge, and behaviors to perform a specific task role or job function. From one's own personal observation of competent employees, one can see that a competent person not only performs the job correctly, but he or she does it effortlessly and is able to adapt his or her art and skill to different situations. Before delving into the taxonomy of competency and a review of competency models, consider the topic of proficiency.

In the context of competency development, proficiency is the degree of ability or skill. This concept has existed since the Middle Ages as evidenced in the titles of novice, journeymen, and master. In developing categories of competency, a taxonomy for proficiency is helpful. As one learns to perform a task, over time one can master it. However, one's journey goes through increasing levels of proficiency. Many competency models use something such as the following:

Level	Description of Proficiency	Alternative Description of Proficiency
1	No knowledge	No knowledge
2	Basic understanding behaviors	Limited knowledge and no experience
3	Working experience behaviors	Do it sometime
4	Extensive experience behaviors	Do it most of the time
5	Subject matter breadth and depth behaviors	Do it all the time, naturally, and can teach it

The key objective in this chapter is program management competency. This chapter provides a survey of some of the more popular competency models available in the field of project and program management. It then explains a model-agnostic, in-depth survey of the competencies of a program manager and their respective skills and behaviors that can help the program manager achieve peak performance

Also, this chapter contains enough information for the human resource professionals and managers hiring program managers to create any combination of job descriptions, behavioral interviewing questions, and build performance evaluation charts to improve the performance of program managers.

COMPETENCY MODELS

This section reviews a number of competency models:

1. International Project Management Association (IPMA) Competence Baseline (ICB)
2. Project Management Institute's (PMI®) Project Management Competency Development Framework
3. International Institutes of Learning (IIL) Project Management Competency Model
4. IIL Program Management Competency Model
5. Levin-Ward Program Management Complexity—A Competency Model

IPMA ICB Competency Model

The IPMA Competence Baseline consists of three ranges and 46 elements of competency and is the basis of its four-level certification system.

The roles in the four-level system, with their distinctive capabilities, include:

- *IPMA Level A: Certified Projects Director* manages complex project portfolios and programmes.
- *IPMA Level B: Certified Senior Project Manager* manages complex projects. Minimum five years of experience.

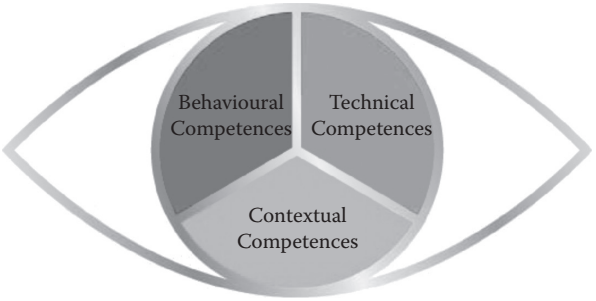


FIGURE 17.1
IPMA eye of competence. (From ICB 3.0 International Project Management Association, 2006.)

- *IPMA Level C: Certified Project Manager* manages projects of moderate complexity. Minimum three years of experience.
- *IPMA Level D: Certified Project Management Associate* applies project management knowledge when working on projects.

It is based on the practices of project management and 40 associate member associations. The Eye of Competence, shown in Figure 17.1 (IPMA, 2006) signifying clarity and vision, represents the integration of all the 46 elements as seen through the eyes of the practicing project manager in action.

The ranges and elements are:

1. *Behavioural competences*: This range covers the project management behaviour and skills. The ICB contains 15 behavioural competence elements:
   a. Leadership
   b. Engagement and motivation
   c. Self-control
   d. Assertiveness
   e. Relaxation
   f. Openness
   g. Creativity
   h. Results orientation
   i. Efficiency
   j. Consultation
   k. Negotiation

   l. Conflict and crisis
   m. Reliability
   n. Values appreciation
   o. Ethics
2. *Contextual competences:* This range covers the project management competence in managing relations with the permanent organisations and the ability to function in a project focused organisation. The ICB contains 11 contextual competence elements:
   a. Project orientation
   b. Programme orientation
   c. Portfolio orientation
   d. Project programme and portfolio implementation
   e. Permanent organisation
   f. Business
   g. Systems, products, and technology
   h. Personnel management
   i. Health, security, safety, and environment
   j. Finance
   k. Legal
3. *Technical competencies*: This range covers the project management technical content, sometimes referred to as the solid elements. The ICB contains 20 technical competence elements:
   a. Project management success
   b. Interested parties
   c. Project requirements and objectives
   d. Risk and opportunity
   e. Quality
   f. Project organisation
   g. Teamwork
   h. Problem resolution
   i. Project structures
   j. Scope and deliverables
   k. Time and project phases
   l. Resources
   m. Cost and finance
   n. Procurement and contract
   o. Changes
   p. Control and reports

q. Information and documentation
r. Communication
s. Start-up
t. Close-out

Project Management Institute (PMI®) Project Management Competency Development Framework (PMCD)

The PMCD consists of Performance and Personal Competencies (PMI®, 2007). Performance competence is the project managers' ability to accomplish project tasks using their project management knowledge based on the Project Management Institute's (PMI®) *A Guide to the Project Management Body of Knowledge (PMBOK®)*, Third Edition, and the framework defines what evidence is required to assess these competencies. These competency elements are closely based on the five process groups and are:

1. Initiating a project
2. Planning a project
3. Executing a project
4. Monitoring and controlling a project
5. Closing a project

Personal competencies, on the other hand, are defined as those attitudes and behaviors as well as core personality characteristics that contribute to the managers' ability when managing a project, as shown in Figure 17.2 (PMI®, 2007, p. 24):

1. Communicating
   a. Active listening
   b. Maintains lines of communication
   c. Ensures quality of information
   d. Tailors communication to audience
2. Leading
   a. Creates a team environment
   b. Builds and maintains effective relationships
   c. Motivates and mentors
   d. Takes accountability
   e. Uses influence skills when required

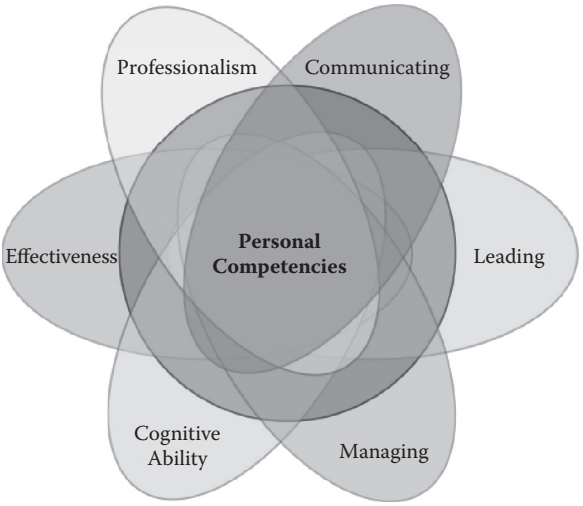


FIGURE 17.2
PMI® personal competencies. (From *Project Management Competency Development Framework*, 2nd Edition, PMI® 2007.)

3. Managing
   a. Builds and maintains the project team
   b. Plans and manages for project success
   c. Resolves conflicts
4. Cognitive Ability
   a. Takes a holistic view of the project
   b. Resolves issues and solves problems effectively
   c. Uses appropriate project management tools and techniques
   d. Seeks opportunities to improve the project's outcome
5. Effectiveness
   a. Resolves problems
   b. Maintains project stakeholder involvement, motivation, and support
   c. Changes and adapts to meet project needs
   d. Uses assertiveness when necessary
6. Professionalism
   a. Demonstrates commitment to the project
   b. Operates with integrity
   c. Handles personal and team adversity
   d. Manages a diverse workforce
   e. Resolves individual and organizations issues objectively

International Institute for Learning's Project Management Competency Model

International Institute for Learning (IIL, 2010) has defined competency models for project, program and portfolio managers. Figure 17.3 presents IIL's Project Management Competency Model consisting of 37 elements organized in five dimensions of

1. Project Management
2. Leadership
3. Personal
4. Business
5. Technology

This model is provided here for two reasons: to show similarities with and differences from the PMI® PMCD Framework and to allow comparison with IIL's competency model discussed program managers in the next section.

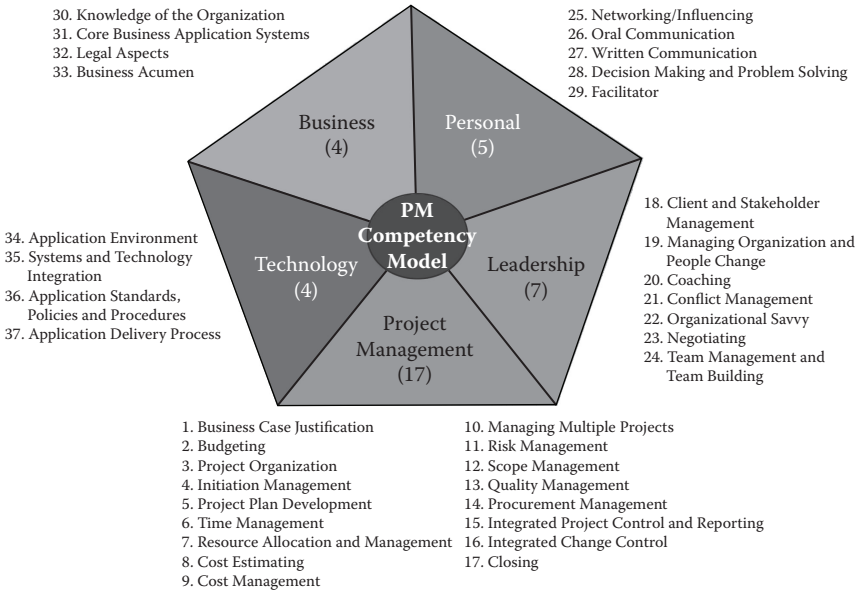


FIGURE 17.3
IIL Project Management Competency Model. (From International Institute for Learning. (2011). *Program manager and project manager competency models*. New York.)

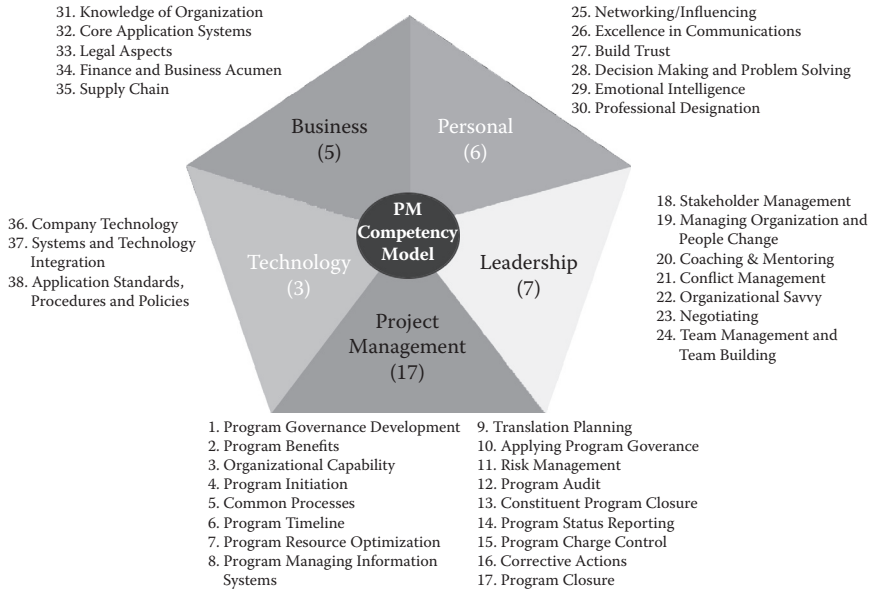


FIGURE 17.4
IIL Program Management Competency Model. (From International Institute for Learning. (2011). *Program manager and project manager competency models*. New York.)

IIL's Program Management Competency Model

Figure 17.4 presents IIL's Program Management Competency Model consisting of 38 elements organized in the following five dimensions:

1. Program Management
2. Leadership
3. Personal
4. Business
5. Technology

Both of these competency models define proficiencies for each of the competency skills allowing one to measure and compare development over time.

Levin–Ward Program Management Competency Model

The Levin–Ward (2011) model, shown in Figure 17.5, follows the PMI's® PMCD by breaking program managers' competencies into two dimensions of performance competency and personal competency.



FIGURE 17.5
Levin–Ward Program Management Competency Model. (From Levin, G. and Ward, J. L. (2011). *Program management complexity a competency model*. Boca Raton, FL: CRC Press.)

The performance competencies are aligned with the six practice domains identified in the Program Management Professional (PgMP®) Examination Specification.

1. Defining the Program
2. Initiating the Program
3. Planning the Program
4. Executing the Program
5. Monitoring and Controlling the Program
6. Closing the Program

The personal competencies in this model are:

7. Communicating
8. Leading
9. Building Relationships
10. Negotiating
11. Thinking Critically

12. Facilitating
13. Mentoring
14. Embracing Change

Summary of the Competency Models

These five models are built on the multi-dimensional aspect of competency of the project or program manager, although each one is arranged differently. Many of the competencies discussed in this chapter are required by both project and program managers; however, the focus will be on the skills specific and additional to those of a project manager.

Also keep the Marshall–McHardy's (1999) performance formula in mind and, as we shall see, almost all competencies relate to the Talent-Trainable Category.

$$\text{Performance} = \text{Talent} \times \text{Attitude} \times \text{Opportunity},$$

(inherent, trainable) (habits of thought, of behavior) (fit with organization, with job)

GOVERNANCE DEVELOPMENT

There are few situations in which a project manager is required to establish governance, beyond that of the Project Management Office if such a structure exists. However, for the program manager, development of the program governance is one of the key activities in the early stages of the program life cycle.

Establishing governance requires an understanding of the program and is an activity that spans the early phases of the program life cycle as noted and paraphrased from PMI®:

> The integrative nature of program management processes involves coordinating the processes for each of the projects or programs…and involves managing the processes at a higher level than those pertaining to a project. An example of this type of integration is the management of issues and risks needing resolution at the program level, because this type of integration involves multiple projects or otherwise cross-project boundaries and therefore cannot be addressed at the individual project level (PMI®, 2008a, p. 8).

> Essential program management responsibilities include the identification, monitoring and control of the interdependencies between projects; dealing with the escalated issues among the projects that comprise the program; and tracking the contribution of each project and the non-project work to the consolidated program benefits. (PMI®, 2008a, p. 8)

Therefore, the key competencies here are:

- Determining which activities fit and belong to the program level and which ones apply to the project level based on the nature of the program, the strength of organizational governance structure, the organizational project management maturity, and the experience of the component project managers
- Having effective negotiation skills (a separate competency discussed later) to work with different levels of the organization and external bodies to create the most advantageous governance structure for the program
- Having the ability to develop a control framework aligned with organizational and existing company governance models
  - Included in the control framework are relevant components for control, resources, risks, issues, benefits, and quality management
- Defining common processes across component projects to drive efficiency and consistency based on the nature of each program
- Determining roles at executive levels, defining their accountabilities and responsibilities, and obtaining their commitments
- Providing leadership and engaging stakeholders to balance the input of both the interested and especially the disengaged parties
- Coaching project managers on how to use the program governance structure to their advantage

PROGRAM BENEFITS

While benefit management is central to all projects and programs and both PRojects IN Controlled Environments (PRINCE2®) and PMI® (2008b) address it, it is in this area that the program managers' competency most influences the impact of financial investments. This competency, not only

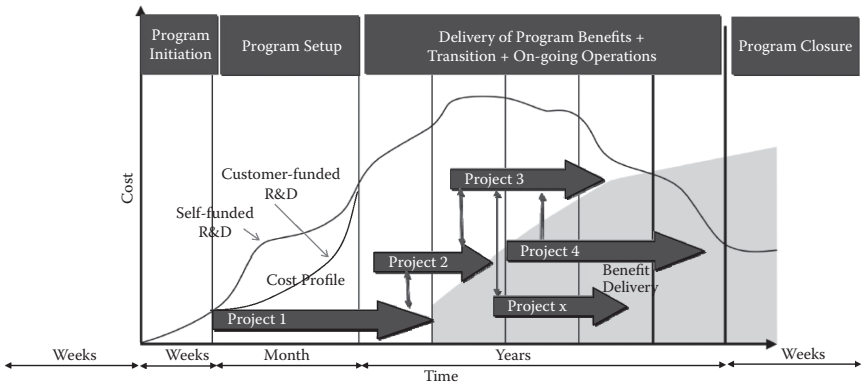


FIGURE 17.6
Program cost and benefit profile.

affects the specific program at hand, but also will have a direct impact on the financial performance of the firm. Once a program is approved, the program manager must focus on realizing benefits as early as possible to reduce the financing burden of the program on the firm as shown in Figure 17.6 (PMI®, 2006, p. 18). The skills of this competency include:

- Identifying tangible and intangible benefits from the component projects
- Prioritizing delivery of benefits by establishing suitable tranches (or logical grouping of projects and other ongoing work to deliver interim benefits) based on the stakeholder needs but balanced against the change capacity of the community impacted
- Developing a benefits realization plan by conducting appropriate economic evaluation models and evaluating program feasibility
- Developing the business case, integrating the risk factors in the calculations, and presenting the option analysis results in order to obtain funding
- Monitoring the program by focusing on the benefits being delivered, readjusting tranches, and balancing and making resource, budget, schedule, and scope trade-offs in order to maximize overall program delivery, while managing the expectations of stakeholders as well those of the project managers
- Using effective negotiation skills (a separate competency discussed later)

PROGRAM INITIATION

This competency involves application of knowledge and experience with tools, techniques, and processes in developing a program charter and setting appropriate metrics for all constituent projects. The key skills in this competency, beside the obvious activities of governance, defining high-level milestone plans, initial accountability matrix, and conducting kick-offs, are:

- Designing and developing appropriate metrics for success
- Developing a vision statement for the program and validating that it is aligned with corporate and business unit strategic objectives
- Developing a program blueprint or roadmap and obtaining buy-in from across the organization and external bodies
- Engaging key stakeholders early on to review, critique, and contribute in order to gain buy in and identify resistance early in the program life cycle

PROGRAM TIMELINE

Developing a program schedule carries complexities beyond large project schedules, and the program manager may be required to integrate many project schedules, all with different degree of details. Competency in this area is measured in addition to the basic elements of a well-structured, resourced, and baselined project schedule and includes proficiency in:

- Having a hands-on knowledge of different scheduling tools
- Integrating multiple project schedules to the sufficient level of detail
- Detecting and resolving scheduling conflicts and negotiating realistic timelines among constituent projects
- Developing an integrated schedule within tranches
- Having effective negotiation skills (a separate competency discussed later)

PROGRAM RESOURCE OPTIMIZATION AND MANAGEMENT

The program manager competencies in this area include:

- Identifying synergies among constituent projects and improving resource utilization by leveraging resources (capital, human, equipment, machinery, and materials) across constituent projects
- Managing through constraints resource failures such as illnesses, machine breakdowns, material destruction (e.g., through humidity, leakages, or fire), delivery delays, and strikes by effectively optimizing existing resources and sourcing and procuring what is needed through personal influences with alternative channels
- Having effective negotiation skills (a separate competency discussed later)

PROGRAM MANAGEMENT INFORMATION SYSTEM

Establishing the Program Management Information System (PMIS) may span geographic boundaries and create challenges when various program locations are not technologically compatible or when the various parties collaborating on the program belong to different firms each with their own methodology, tools, templates, and processes for management and control. Competencies specific to a program manager are:

- Negotiating on a system that allows enough flexibility for the collaborating parties to use and contribute to and still provides both the program team and governance board the right amount and level of information
- Removing barriers to sharing lessons learned and knowledge gained across projects in the program regardless of the PMIS that is used
- Establishing a register and repository for the collection of all intellectual property developed throughout the program
- Establishing documentation taxonomy and standards for all documentation across constituent projects in order to maximize synergies, eliminate errors and duplications, and reduce efforts in these project activities
- Establishing appropriate links to support portfolio reporting

TRANSITION PLANNING

Transitions occur either at the end of the program, upon completion of some of the component projects, or when the end objectives of a tranche has been achieved. Competencies include:

- Defining exit criteria based on achieving objectives or indicators and metrics of failure
- Recovering from unsatisfactory results or substandard completion of earlier components and developing appropriate support and recovery steps in such cases to minimizing the impact on program resources (capital, human, equipment, machinery, and materials)
- Planning and executing complex multi-year transitions

RISK AND OPPORTUNITY MANAGEMENT

While program risk management essentially remains the same as project risk management, PMI® states that the program manager needs the ability to manage risks in a broader environment that includes: environmental-level, program-level, project-level, operational-level, portfolio-related and benefit-related risks (PMI®, 2008a, pp. 157–158). The risk management competencies of a program manager are:

- Establishing clear lines of communication between project and program-level risks and opportunities
- Creating cross project, tranche, and program-level impact analysis
- Integrating response strategies, including contingencies
- Communicating positive and negative outcomes of materialized risks to all concerned and/or impacted project managers
- Maintaining a comprehensive list of positive and negative risks from all constituent projects and continually monitoring, reassessing, and modifying responses to optimize all key performance indicators of the program
- Establishing where the ownership of risks resides by considering the following factors (Ghorashy and Davies, 2008):

1. Size and complexity (and the resulting explosion of interfaces that need to be managed as programs scale-up).
2. Project manager maturity and skills/experience. Do they need extra support from the program?
3. Process maturity, which includes multiple project and engineering methodologies and multiple contractors as well as the safety criticality of the system(s).
4. Technology maturity. Are there leading edge technologies that need to be carefully monitored?
5. Geographic and cultural distance including different business areas within a corporation or collaborating corporations with inconsistent cultures.
6. The dominant objective in the triple constraint established in the program's objectives. For example, a fixed timeline may lead to greater focus by the program on schedule management.
7. Sponsor and stakeholder demands. Are there pressures for centralized program management or is a more decentralized or loosely federated model (with functional as well as project/program reporting lines) required to meet information and reporting needs and satisfy organizational politics? This may include the need to establish a central program interface to the corporate audit or risk management teams.
8. Corporate history on project and program delivery and the associated lessons that translate into governance steps to learn and avoid making the same mistakes (e.g., poor defect rates, late, and over-budget delivery).

PROGRAM AUDIT

The program audit area involves the ability to audit one's own or others' programs as a competency of the program manager as it indicates the knowledge, tools, experience, and techniques one requires to conduct this task effectively. Program manager competencies in this area include:

- Auditing a program against best practices, standards, regulations, and program objectives
- Identifying problem areas, making remediation recommendations, and providing constructive feedback
- Improving audit processes and coaching others

CONSTITUENT OR COMPONENT PROJECT CLOSURE

Transitions are preceded by closing activities; therefore, the program manager competencies needed here are:

- Closing constituent projects against the component acceptance criteria, relevant regulatory requirements, and contractual obligations
- Capturing lessons learned and transferring them to current and future constituent projects and other programs
- Evaluating completed constituent projects against acceptance/exit criteria and approving closure
- Assessing against the benefits realization plan and re-evaluating the business case
- Recognizing efforts and providing feedback to component staff and informing the sponsors, executives, and communities involved through available means and appropriate channels

PROGRAM STATUS REPORTING

Complex and time-consuming as this can become, regular status reporting is a necessity to provide management information to oversee the program and inform the stakeholders. However, establishing the program governance normally simplifies this activity somewhat. A competent program manager then focuses on:

- Ensuring all parties agree to the a common set of metrics and reporting formats
- Ensuring if these metrics are based on earned value management, then templates are provided to all project managers and definitions of terms such as estimate at complete and estimate to complete are agreed upon by the team
- Negotiating a meaningful and simple dashboard reporting system that allows senior stakeholders to easily understand the status of the program
- Establishing status reporting requirements that are efficient, easily compiled, eliminate duplication and data entry, and address all levels concerned
- Providing appropriate commentary to explain certain variances or draw attention to areas of concern when and where needed

PROGRAM CHANGE CONTROL

Impact analysis and change control at a program level can be a time-consuming task, and in the case of large industrial programs with multiple contracts, the assistance of change administrators is frequently necessary. The program manager needs to be able to:

- Establish effective program change control systems based on the program scope statement and various contracts
- Analyze change drivers, utilizing change/configuration management processes
- Analyze program finances and contingencies
- Manage changes, waivers, and claims in an integrated fashion to keep all these elements in mind during impact analysis and ensuing negotiations

CORRECTIVE ACTIONS

While a risk response strategy, daily corrective actions are similar to hundreds of small course corrections pilots make during each flight. It is a program manager competency as such proactive actions are indicative of the presence of the manager on all aspects of the program. Competencies include:

- Identifying and selecting corrective actions through analysis of alternative program tranche paths
- Analyzing program trends, evaluating program risks, and forecasting program outcomes in order to ensure smooth program progress toward its goals and objectives
- Helping others see these actions as fun, daily activities that engage stakeholders in a meaningful way and foster team interaction and problem solving

PROGRAM CLOSURE

Not unlike component closure, some of the competencies are similar. However, it is worth noting that few program managers experience full

program closure more than a few times in their career, as many programs may last as long as 20 to 45 years. The competencies in this area are similar to component closure and include:

- Closing all constituent projects against the component acceptance criteria, relevant regulatory requirements, and contractual obligations
- Capturing lessons learned and transferring them to current and future programs
- Assessing and evaluating the benefits realization plan and re-evaluating the overall business case
- Updating historical databases for risks and estimates
- Transitioning the benefit register to the accountable client or senior stakeholder
- Closing all program contracts and resolving outstanding invoices, issues, claims, and waivers
- Closing all financial aspects, reconciling against the program budget, accounting for contingencies, and submitting a final program financial statement
- Recognizing efforts and providing feedback to program staff and informing the sponsors, executives, and communities involved through available means and appropriate channels

STAKEHOLDER MANAGEMENT

Program stakeholders span multiple organizations and firms internally and externally. While requiring many of the interpersonal competencies, the ones specific to the tasks of stakeholder management include:

- Establishing alliances with other departments and organizations
- Assessing levels of resistance, compliance, and commitment among stakeholders
- Assessing levels of alliance, partnerships, and adversarial relationships between stakeholders
- Setting standards as a role model for relationship and service excellence
- Building confidence, optimism, and encouraging positive attitudes to create one team and provide superior service delivery in diverse environments

- Identifying, setting, resetting, and managing expectations and perceptions among stakeholders
- Maintaining a stakeholder satisfaction survey
- Engaging all stakeholders to appropriate levels to obtain support, disseminate information informally, and elicit input frequently
- Minimizing surprises and socializing important events at a personal level to the highest stakeholders (highest in this case does not mean higher in rank, but rather higher in impact)
- Briefing contents of important presentations and reports with all key attendees prior to key meetings on the program

MANAGING ORGANIZATION AND PEOPLE CHANGE

All program managers are effectively change managers. Far more than a project does a program bring change to the organization at large, the community, municipality, towns, and cities. Understanding the principles of change management and familiarity with effective change management practices are essential skills a program manager must foster. The competencies include:

- Having a sound knowledge of current change management practices
- Having a sound knowledge of the psychological theories of change
- Having experience in managing the successful and smooth transition from the current to the desired state
- Understanding the elements of culture and what actions are necessary when change includes culture
- Having the ability to build commitment and allocate resources to make change happen
- Influencing others through suitable communication techniques
- Acknowledging and dealing with resistance directly and constructively
- Surfacing hidden resistances and dealing with them appropriately
- Building change management plans and integrating them into the program plan
- Coaching project managers on the program on their respective courses of actions
- Providing appropriate support before, during, and after change is implemented

- Planning, designing, and providing multiple means for the organization for people to be able to advance up the change ladder successfully, as quickly as appropriate, and with minimal impact on productivity or attrition

COACHING AND MENTORING

Coaching is for everyone, and mentoring is a privilege! The standard competencies for coaching are defined by International Coach Federation (ICF), and there are many coaching models and coaching training organizations that comply with these standards. Once the skills of coaching are learned throughout any organization, all members enjoy the new luxury of asking for short coaching conversations to help themselves through difficult issues. The true impact of a coach lies in his or her:

- Presence of mind
- Ability to ask powerful non-judgmental questions
- Having an unbiased approach to help the coachee see the quality of his or her thinking about the topic

Not all conversations are or should be coaching conversations. Mentoring, on the other hand, is the art of giving colleagues, or the mentees, opportunities they could not otherwise easily access. While the core language of mentoring should be that of a coach, in mentoring the mentor may choose the method of engagement from situation to situation using any of the following:

- Teaching
- Facilitating
- Problem solving
- Consulting and advising
- Performance coaching
- Counseling

Therefore, the competencies in this area include:

- Knowing which of the above techniques to use in what situation
- Maintaining confidentiality in all coaching and mentoring conversations

- Listening with a presence of mind and objectively
- Abandoning one's own ideas and solutions, unless the other person is specifically asking for a specific answer
- Asking powerful, thinking questions that make the coachee or mentee examine his or her beliefs, paradigms, and ways of seeing the issue
- Avoiding giving solutions and making suggestions—the best solutions are those that fully belong to the coachee or mentee.
- Focusing on the coachee or mentee having insight into key issues
- Teaching project managers and other team members how to coach and mentor each other

CONFLICT MANAGEMENT

The origins of conflict management date back to fifth century B.C. and to the dialogues of Plato, Aristotle, and their contemporaries. From there, we have the foundation of argumentations, debate, democracy, and, Western law! Rhetoric was made one of the seven liberal arts created by the Greeks, and while such knowledge and education are unfortunately no longer common in most education systems, certain professions use them. Both civil and common law systems and methods of argumentations in most governments still use these skills every day, and with a quick pause one can see that the foundation of court cases as well as parliamentary proceedings are nothing but debating and arguing through endless conflicts. As this art has now become exclusive to these professions, and for those who actively seek it, for most managers, courses in conflict and negotiation provide a fast-food version, which eliminates the immediate hunger although not always in the most healthy manner!

Project and program environments are fraught by conflict and are a great place for practicing and improving one's conflict management skills! The competencies of a program manager in conflict management include:

- Managing emotions—a scale of emotional intelligence (a separate competency discussed later)
- Controlling impulses—another scale of emotional intelligence (a separate competency discussed later)
- Examining facts of both parties, their sources, and their validity

- Listening with empathy and objectively
- Employing sound knowledge and experience of the five modes of conflict: avoid, accommodate, dictate, compromise, and collaborate or problem solve
- Exercising humility and conscious awareness of the impact of pride on one's responses
- Having the ability to examine one's own paradigms, beliefs, and ways of seeing the issue
- Keeping an open mind and being open to all possibilities
- Knowing when to involve a third party and when to engage personally in resolving disputes and conflicts
- Managing stress—a scale of emotional intelligence (a separate competency discussed later)
- Conducting difficult and crucial conversations in a timely manner
- Confronting issues and conflicts directly

NEGOTIATING

Negotiations and conflicts are inseparable—we negotiate to settle a conflict to the satisfaction of both parties. However, methods and techniques of "principled negotiations" are now well established through many years of research that has been emerging from sources such as the Harvard Project of Negotiations (2003), Fisher and Ury (1991), and Ury (1993), among others.

Negotiation skills are essential for any manager, but especially in a project/program environment, as they are required for success across the organization and with external vendors in a constructive and collaborative manner to foster lasting partnerships and alliances. The competencies of a program manager in this area, not much different than those of a project manager, but perhaps more matured and practiced, include:

- Understanding the difference between distributive and integrative negotiation strategies
- Managing emotions—a scale of emotional intelligence (a separate competency discussed later)
- Controlling impulses—another scale of emotional intelligence (a separate competency discussed later)
- Managing stress—another scale of emotional intelligence (a separate competency discussed later)

- Focusing on interests not positions, Fisher and Ury (1991)
- Separating people from the issue, Fisher and Ury (1991)
- Expanding the pie, Fisher and Ury (1991)
- Insisting on objective criteria, Fisher and Ury (1991)

TEAM MANAGEMENT AND TEAM BUILDING

Program teams tend to be large and complex, extending cultural, geographical, and organizational boundaries. Team management and team building can be different on projects versus programs. While knowing all project managers, key suppliers, and vendor contacts are essential, the danger, however, lies in sub-cultures and cliques that can emerge from one or more projects that may be contradictory to that of the program. The competencies of a program manager include:

- Assessing competencies, strengths, and weaknesses of the team and providing performance coaching, mentoring, and training as required to build and develop the team
- Aligning individual's talents to available roles
- Getting to know the team members by maximizing face-to-face meetings when possible
- Creating a program culture by establishing operating ground rules, performance expectations, a team name, and possibly a team charter with input from as many team members as possible
- Treating everyone equally, avoiding gossip, and not taking sides
- Defining roles, responsibilities, and accountabilities early and frequently and confirming them during the program
- Addressing team issues directly and taking actions immediately to remediate any problems

NETWORKING/INFLUENCING

He or she who masters the art of networking never went hungry or thirsty, and in fact, is invited to dinners frequently! The competencies in networking/influencing include:

- Extending one's own and other networks continually by making meaningful connections
- Maintaining connections with members of the network at all times
- Setting aside time to regularly network with individuals and groups, obtaining expert advice and counsel in order to improve program performance or influence appropriate changes in direction when necessary
- Establishing and maintaining productive working relationships within and outside of one's own area by being a contributing member on a variety of teams and respecting conflicting points of view
- Coaching others on developing and maintaining cooperative and satisfying relationships and creating initiatives that foster communication, directness, and a spirit of cooperation

EXCELLENCE IN COMMUNICATIONS

Good communication skills are rare and take years of practice to learn and require conscious effort to make them habits one can perform them effortlessly and competently. These include:

- Being conscious of one's own tone, language, style, persona, and the impact of emotions
- Listening with empathy, paying attention to body language, verbal and non-verbal cues—visual, auditory, and kinesthetic
- Speaking with clarity and sound logic, framing concepts with appropriate images and stories
- Speaking effectively in public, with executives, with vendors and suppliers, with project managers, and with project and technical team members
- Writing clearly with good grammar and punctuation, and structuring documents that are easy to follow and are aesthetic pleasing with appropriate pictures, diagrams, charts, and tables
- Having the ability to communicate complex concepts, making effective presentations, and taking an active role in meetings
- Adapting one's tone and style to varying types of audiences
- Adapting content, structure, and the needed level of detail to fit the needs of the receiver

- Using a broad range of techniques in communicating complex ideas to diverse populations including facilitation of effective communication with senior technical and business audiences
- Having confidence in terms of being given the authority to communicate with the public and external bodies

BUILDING TRUST

Covey and Merrill (2008) states when trust increases things get done faster, and fewer controls are needed. These key concepts fit exactly into the triple constraints of project or program management—in a high-trust environment scope, cost, and schedule improve, and when lack of it persists, costs increase, and things take longer to do causing negative cost and schedule variances. Building trust is another important competency with a high weighting factor of achieving peak-performing teams. These include:

- Acting as a trusted advisor
- Keeping commitments
- Saying what needs to be said directly and compassionately

DECISION MAKING

Every day the program manager needs to make decisions, and the ability and competence to do so is put to test multiple times by the nature of uncertainty inherent in a project and programs. Decision making is also one of the five major scales of emotional intelligence consisting of three skills: (1) problem solving, (2) reality testing, and (3) impulse control. Before considering the emotional contents of this important competency, the process of effective decision making requires the following competencies:

- Effectively assessing situations, conducting trade-off analysis, and presenting options through a variety of comparison models
- Making decisions and solving problems in a manner that gives efficacy to the business of the program

- Assessing and prioritizing costs, risks, and benefits among other criteria before making the decision
- Facilitating group decision-making sessions by maintaining an open mind in the group; challenging conventional approaches, common assumptions, and beliefs; capturing all inputs; evaluating their merit; and presenting them using suitable decision-making models such as decision trees, fish-bone diagrams, decision matrices, etc.
- Analyzing and discussing decision alternatives with multiple stakeholders including those responsible for both design and implementation
- Having familiarity with Monte Carlo simulations to assess the probabilities of success of different options based on their level of uncertainty and risk

EMOTIONAL INTELLIGENCE

People get hired for desirable intellectual intelligence (IQ), and many get fired for undesirable emotional intelligence (EQ)! Emotional intelligence is a set of emotional and social skills that collectively establish how well we:

- Perceive and express ourselves
- Develop and maintain social relationships
- Cope with challenges
- Use our emotions and emotional information in an effective and meaningful way
- Make decisions

Almost 30 years of research has contributed to creating a model (Figure 17.7) that measures emotional intelligence on a 15-scale model that is reliable in that its results are consistent and reproducible and is validated.

- For each of its specified purposes:
  - It can be used as a measure of EI
  - It can be used to pick up changes and develop EI
  - It can be used to predict success
- It is an accurate reading of EI at the time it is taken
- Real change is achieved as a result of development planning because it measures what it is supposed to measure



FIGURE 17.7
Emotional Intelligence Model 2.0. (From Emotional Intelligence Model 2.0. Multi-Health Systems, 2011.)

The details of the 15 scales are more clearly visible in Figure 17.8.

By examining each of these scales, one can see the importance of each of them and their inter-relatedness and their direct relevance to performing well in any role. The reason EI is included here is that it is the only one that contributes to the habits of thought and behavior, the second factor in the Marshall–McHardy (1999) performance formula. Consider the following behavioral habits that can have a drastically positive impact when present in a program manager:

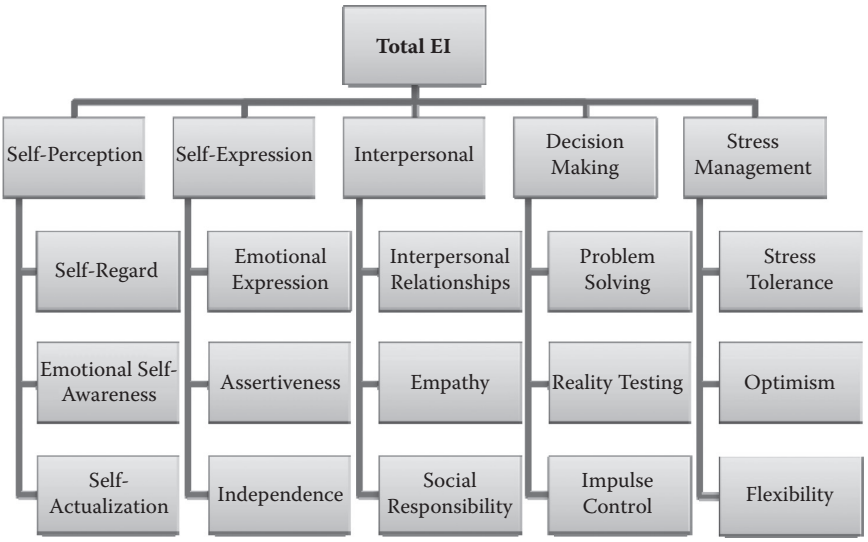


FIGURE 17.8
The 1-5-15 Scales of Emotional Intelligence 2.0 Model,

- Self-Regard
  - Respecting oneself while understanding and accepting one's strengths and weaknesses
  - Often associated with feelings of inner strength and self confidence
- Emotional Self-Awareness
  - Includes recognizing and understanding one's own emotions
  - Includes the ability to differentiate between subtleties in one's own emotions while understanding the cause of these emotions and the impact they have on the thoughts and actions of oneself and others
- Self-Actualization
  - Willingness to persistently try to improve oneself and engage in the pursuit of personally relevant and meaningful objectives that lead to a rich and enjoyable life
- Emotional Expression
  - Open expression of one's feelings verbally and non-verbally
- Assertiveness
  - Communicating feelings, beliefs, and thoughts openly and defending personal rights and values in a socially acceptable, non-offensive, and non-destructive manner

- Independence
  - Ability to be self directed and free from emotional dependency on others
  - Decision making, planning, and daily tasks are completed autonomously
- Interpersonal Relationships
  - Ability to develop and maintain mutually satisfying relationships that are characterized by trust and compassion
- Empathy
  - Recognizing, understanding, and appreciating how other people feel
  - Being able to articulate your understanding of another's perspective and behaving in a way that respects others' feelings
- Social Responsibility
  - Willingly contributing to society, to one's social groups, and generally to the welfare of others
  - Involves acting responsibly, having social consciousness, and showing concern for the greater community
- Problem Solving
  - Ability to find solutions to problems in situations where emotions are involved
  - Includes the ability to understand how emotions impact decision making
- Reality Testing
  - Capacity to remain objective by seeing things as they really are
  - Involves recognizing when emotions or personal bias can cause one to be less objective
- Impulse Control
  - Ability to resist or delay an impulse, drive, or temptation to act
  - Involves avoiding rash behaviors and decision making
- Stress Tolerance
  - Coping with stressful or difficult situations and believing that one can manage or influence situations in a positive manner
- Optimism
  - Indicator of one's positive attitude and outlook on life
  - Involves remaining hopeful and resilient, despite occasional setbacks
- Flexibility
  - Adapting emotions, thoughts, and behaviors to unfamiliar, unpredictable, and dynamic circumstances or ideas

ORGANIZATIONAL AWARENESS

The better one knows the organization(s), the more effective one will be in navigating one's way through procedures, bottlenecks, constraints, and policies. Competency in this area requires knowledge and skills in:

- Recognizing the organization's structure, culture, philosophy, operating principles, values, and code of ethics
- Interpreting organizational policies, vision, mission, and values and translating them into strategic program mission and objectives
- Recognizing and effectively addressing politically challenging situations and accurately differentiating issues and determining who needs to be influenced or kept informed
- Understanding the purpose of the functional departments and business units, divisions, and branches, and their respective managers and resources
- Explaining the organization's products and operational capabilities to stakeholders at a variety of levels
- Knowing the key partners, suppliers, vendors, and alliances
- Explaining the vision and objectives of multiple units including key functions, responsibilities, issues, and practices in the context of the organization culture; being familiar with core products and operations of the company
- Evaluating the strategic and tactical directions of products and operating units
- Networking with functional and other project and program managers
- Evaluating the organization's (competitive) position in the industry and the marketplace

LEGAL ASPECTS

A working knowledge of law and experience in contract management becomes essential in interpreting and understanding legal and regulatory aspects of the program. The skills in this competency include:

- Understanding the concepts of common, civil, statute, and administrative law
- Understanding the relevant aspects of commercial contract and tort law, international trade agreements, offset obligations, and International Commercial Terms (INCOTERMS)
- Having familiarity with the concepts and processes of claims management
- Having knowledge and familiarity with Alternative Dispute Resolution (ADR)
- Describing the importance of relevant legal issues, such as intellectual property rights, contracts, and regulatory legislation in the context of program management
- Recognizing or finding out what principles of law apply to a specific situation and knowing when to refer legal questions to the company's legal group or outside legal groups
- Identifying any relevant standards for legal issues
- Participating in legal discussions and contract negotiations including identification of contract risks and development of appropriate risk responses
- Resolving legal issues and negotiating contracts with suppliers and customers while continually working with professional attorneys in the legal group and/or from outside firms as key project or program stakeholders as required; with knowledge of commercial contracts, trade agreements, INCOTERMS, offset obligations, claims management, and ADR

FINANCE AND BUSINESS ACUMEN

Competency in this area is an added advantage for a project manager; however, in programs this competency is a necessity throughout the program life cycle from setup to closure. Skills for competency in this area include:

- Defining and building business cases and program financial evaluation models to the right level of detail and integrating risks into these evaluations
- Establishing the correct financial controls and metrics for effective program governance

- Understanding different types of costs and their treatment on different programs
- Having the ability to read and understand financial statements
- Having a working knowledge of how decisions across projects may impact the program's gross margin, profit and loss, cash optimization, and working capital
- Recognizing how program finances fit into the company operating plan
- Coaching colleagues and team members on how to effectively analyze and understand the program and individual projects' performance and the client's business in order to provide expert consulting support on complex, high-value projects and programs
- Articulating how multiple projects or programs fit into the strategy and financials of the company
- Recognizing how changes in time, cost, scope, and quality impact the bottom line
- Having the ability to manage program cash flow, working capital, and profit and loss

COMPANY TECHNOLOGY

Naturally, familiarity with the technology is essential for the program manager. Skills for competency in this area include:

- Applying knowledge and experience with the core technology of the company's products and its competitors' products
- Discussing specific functions and responsibilities of the Technology Department and its products, services, and functions; identifying its key customers; and the relevance of its relationship to the program
- Explaining the existing technology infrastructure across all major functions and articulating the key benefits and drawbacks of existing technology organizational structure and relationships
- Recognizing all core product technologies in the company with a good knowledge of the competitors' products
- Monitoring industry and marketplace experiences with technology infrastructure and processes and determining how they contribute

to technology-related best practices and processes; contributing in recommending strategic technology decisions for the program and various market segments

PROFESSIONAL DESIGNATION

Holding of professional designations are indicators that certain knowledge and experience has been attained in a specific area. While not specifically a competency, a professional designation can be an indicator of competency and the various relevant designations include:

- Project Management Professional (PMP®), by PMI®
- PRINCE2® (Projects in Controlled Environments), APMG-UK
- Program Management Professional (PgMP)® by PMI®
- Managing Successful Programmes (MSP) Foundation, Practitioner, and Advanced Practitioner, APMG-UK
- Engineering Designations such as PEng. (Professional Engineer) in Canada, Chartered Engineer in United Kingdom, and Professional Engineer in the United States
- Six Sigma Black/Green Belts
- Relevant medical, pharmaceutical, clinical, and other professional certifications

APPLICATION STANDARDS, PROCEDURES, AND POLICIES

Similar to professional designations, having a working knowledge of standards, procedures, and policies in particular specific to the locations of program executions becomes a competency area that contributes toward the overall performance of the program manager. These include skills in:

- Applying knowledge and experience in local engineering standards and best practices
- Working experience with quality standards and maturity standards such as the Organizational Project Management Maturity Model

(*OPM3)* from PMI® or the Capability Maturity Model for Integration from the Software Engineering Institute
- Working experience with local regulatory requirements such as health and safety, environmental, municipal, etc.

SUMMARY

All the competencies mentioned in this chapter contribute to the trainable talent component of the Marshall–McHardy's (1999) performance formula except emotional intelligence, which contributes mostly to habits of thought and behavior.

This chapter provides sufficient information for individual program managers to assess their own level of competency and develop plans to improve their competency and performance. However, it is important to note that even soft skills, such as negotiations and conflict management, are not habits of thought or behavior and strictly speaking are skills and techniques that can be acquired in a relatively short time with practice and following pre-determined steps and checklists. Another area under the direct control program managers is their fit with the organization they are working in as well as their fit with the specific job. While changing either of these is not straightforward neither of them requires development or training. One can, conceivably, find a new position or firm that will be a better fit and instantly improve one's opportunities for superior performance—agreeable work environments, aligned with our one values can make heroes of all of us.

The one area worth spending considerable effort in understanding and developing is anything that affects attitude, and they are mostly determined by the 15 sub-scales of emotional intelligence. Typically, considerable amount of effort and time is required to develop and to build new habits; however, the effort will pay off not only in program management performance but in all aspects of one's life. Also, this would be one area that the help of a professional coach can help to accelerate the process. Professional coaches are trained and certified to be most effective in achieving such goals.

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Information Structuring "Methodology": Tools and Techniques for Effective Program Management

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INTRODUCTION

The program/project management and industry specific methodologies describe in detail the process steps required to realize an organization's strategic goals. The realization of strategic goals is through portfolios, and this is one of the truest measures of an organization's intent, direction,

and progress. If an organization decides on a new strategic direction or just a strategic alignment, it will need to balance its enterprise portfolio(s), which inevitably will result in issuing one or more program mandates. If in the absence of an enterprise portfolio, the executive committee will issue a program mandate as a way to meet the organizational strategic goals. Once the mandate is received, the program/project management methodologies will then further detail the steps to structure, define, plan, execute, monitor, and govern the program/project endeavors.

Methodologies are prescriptive by nature; and describe steps and processes to follow to achieve the program goals. However, there is no substitute for program management experience (or as the Project Management Institute [PMI®] calls it expert judgment). This gives the program manager insight on how processes should be followed and applied to the program. What these methodologies do not cover in detail is how to set up and optimize a program from the very beginning and then throughout its life cycle. PMI's® program/project methodologies describe techniques, such as resource leveling and value engineering, but these techniques only partially optimize a program and are also carried out later in the program management life cycle.

This chapter focuses on how to establish and set up a program or a project through the optimization of information associated with the program's benefits (project deliverables) and then use this information and the application of techniques to create a taxonomy within the Program Management Office (PMO). Nearly all of the PMO's support tools are impacted, including the Program Management Information System (PMIS), to better support and control the program through the program management life cycle. This approach is called the "Information Structuring Methodology."

INFORMATION STRUCTURING METHODOLOGY IN CONTEXT WITH THE ENTERPRISE MANAGEMENT FRAMEWORK

A program's success or failure is based on whether its vision and goals have been met, which in itself is a direct result of whether or not the baseline triple constraints of scope, time, and cost have been managed effectively.

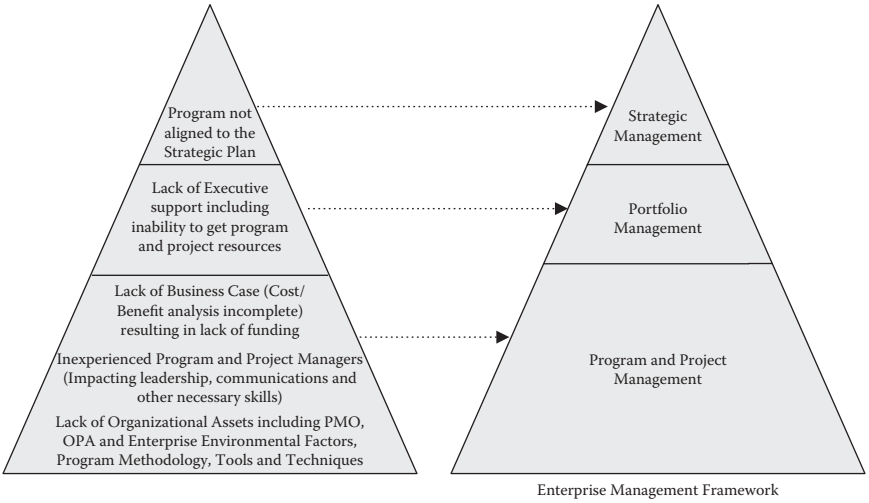


FIGURE 18.1
Top five reasons why programs fail mapped to an enterprise management framework.

An analysis was carried out to determine the top common causes of program and project failures (Standish Group, 2009, AMA, 2011). Many of the reasons given for program failure were the symptoms of a root cause. The root causes were then mapped into an Enterprise Management Framework, shown in Figure 18.1. Surprisingly, the results showed only one root cause per level of the Enterprise Management Framework outside of the Program and Project Management segment. Within this segment two root causes were directly attributed to the failure of programs/projects. One of these causes, the lack of business case benefits, is arguably outside of the program/project management (PMI®, 2008). The program manager is not responsible for the creation of the business case as it is typically created and approved prior to his or her appointment. There is a third root cause, which is within the program/project management segment on the Enterprise Management Framework; a program failure which is due to a lack of organizational assets, a lack of a Program Management Office (PMO), and insufficient tools and techniques.

By addressing the root causes as to why programs and projects fail and then mapping the corrective actions onto the same framework, it shows a different picture. The corrective actions become the key success criteria and should be used proactively to determine if a program or a project should be initiated depending if the success criteria have been fulfilled. If they have, there is a greater likelihood of the program or project meeting its vision and goals, see Figure 18.2.

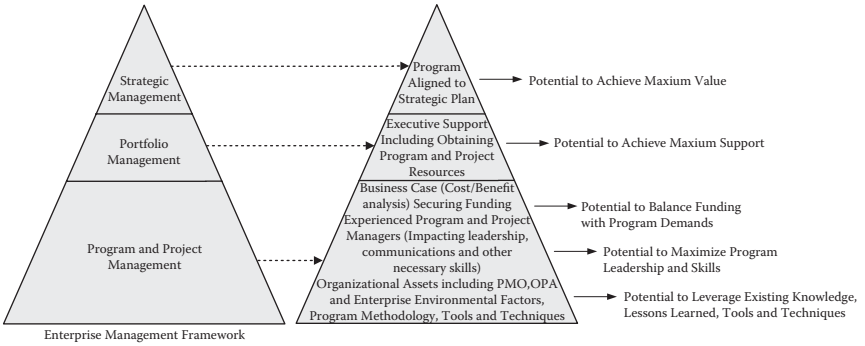


FIGURE 18.2
Program/project success criteria mapped to the enterprise management framework.

Success criteria may be met initially, but because of changing business priorities, such as market influences, changes in management as well as other factors, program misalignment will occur. Misalignments must be recognized, understood, and addressed quickly regardless if the portfolio management team, executive management, or the program manager instigates the needed corrective actions. A program manager's leadership and communications skills are required to address program misalignment. However, these skills are also required if the other success criteria are no longer in place.

An experienced program manager will be proactive in determining if the success criteria are no longer in place and should take one or more the following actions:

- If the program is not aligned with the enterprise strategic plan, corrective action should be taken by first recording the misalignment in the issue register/reports and then presenting the proposed corrective action to the program governance board.
- If the executive sponsorship is not present, then this issue can also be flagged and addressed.
- The business case is something the program manager can check to ensure it is complete, accurate, and the assumptions are sound. Also the program manager can carry out comparative advantage analysis to ensure the program is the best choice to deliver the proposed benefits and not some other program or portfolio construct.
- Program management certification should be obtained, which coupled with program experience, will directly impact the way the program is set up and executed.

- The program manager will not be able to influence to any great extent the program's external factors (PEF) such as the enterprise environment factors (EEF), both internal and external. These are dealt to the program manager similarly as if he or she was playing a game of cards. The question is, "How important the PEFs are to the success of the program, and what actions can be executed to improve and optimize the PEFs where possible to ensure that the program manager is being dealt a winning hand and how to minimize the negative impacts of PEFs on the program"?

Figure 18.3 below illustrates the degree of influence the program manager has at each level on the Enterprise Management Framework.

In the event any one of the critical success factors is misaligned, worse, or is no longer in place, then the program manager is able to influence all areas except for the EEFs (external). The degrees of influence will depend on the program manager's position within the enterprise, experience, and political/communication skills. The level and type of impact on the

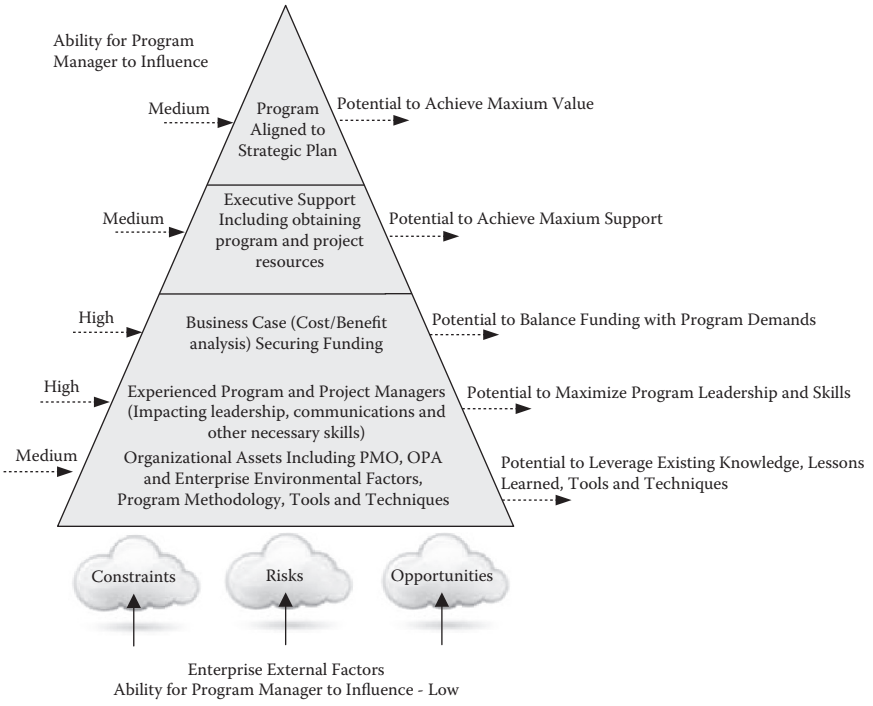


FIGURE 18.3
Ability to influence program critical success factors.

program that is due to missing or misaligned success factors will also depend on how the program manager has designed and established the infrastructure, processes, and tools. This is especially relevant for the EEFs (internal and external) where the impact, not the factors, can be influenced depending on how the program is designed to identify and manage the factors, regardless if they are constraints or opportunities. A program manager needs to fully understand the types of impacts that are caused by the program's external factors and be able to design and implement a response to each impact as the program progresses through the program management life cycle.

Note: The opportunities (positive risks) and negative risks associated with EEFs (internal and external) should be handled as part of the risk management process, which ultimately helps determine the size of the management reserve for the program.

PROGRAM EXTERNAL FACTORS

A program is impacted by external factors (influences) during its life cycle, and unless managed and optimized, the program will lose opportunities and perhaps suffer risk impacts that may not have risk mitigation or risk response plans. If the program experiences constraints that could delay schedules and also experiences "integration challenges", or if either are ignored, they will severely disrupt the program and distract program management attention that should be focused on program definition and planning.

The complexity and relationship of program external factors must be understood before any optimization can take place. Figure 18.4 shows sources of the program external factors and the impacts on the program life cycle.

Referring to Figure 18.4, a program can be impacted by five types of external factors:

1. Risks (Negative)
2. Risks (Positive) or Opportunities
3. Organizational Process Assets (OPAs)
4. Constraints
5. Integration Challenges

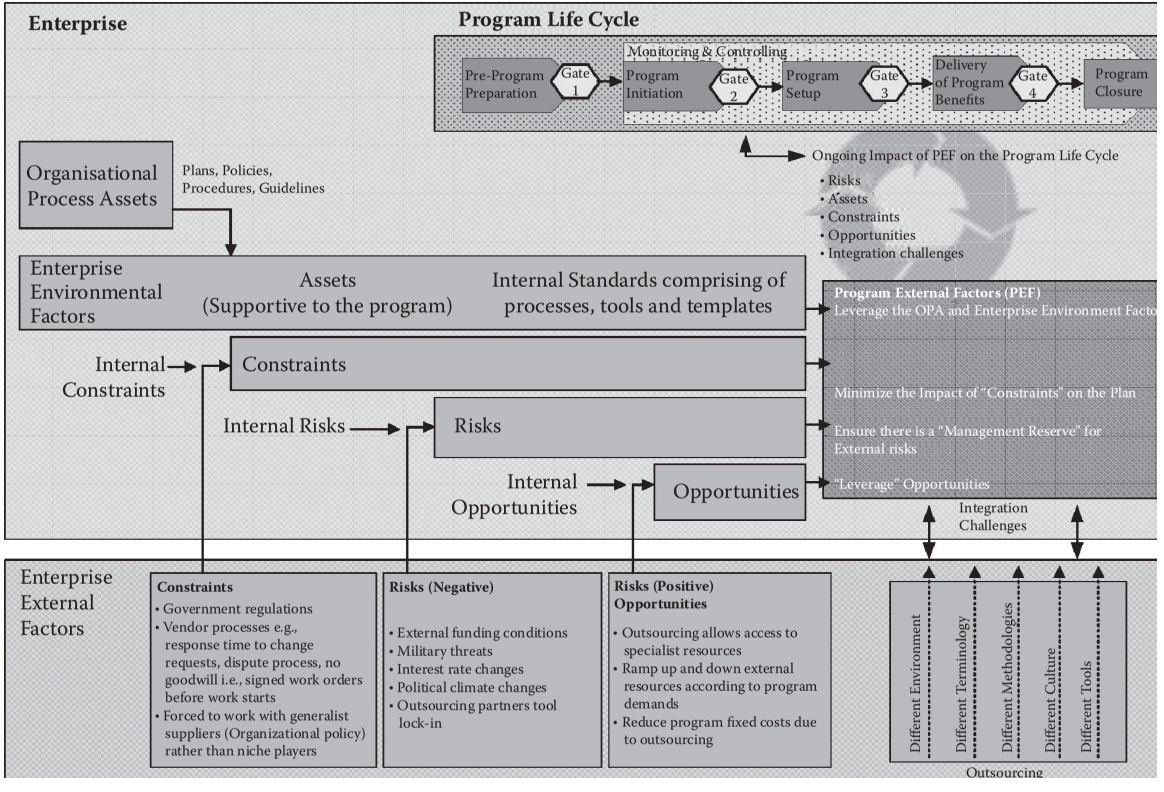


FIGURE 18.4
External factors (influences) on a program.

Each one of these factors on the program must be understood in the context of the program's vision, objectives, and strategies developed to mitigate negative influences and enhance positive factors. The process of evaluating the external influences must be institutionalized quickly within the program processes to minimize the risk of unmanaged impacts to the program.

Risks (Negative)

Risks can be categorized in the enterprise as enterprise "external risks" and enterprise "internal risks." Enterprise external risks are mainly the "unknown-unknowns," consisting of political, economic, acts of God and man-made crises not known at the time of key decision making that then may impact the program. The risks associated with outsourcing are also included. Risks, such as changes to contract conditions, service set up, and service delivery, all will impact the program in some way. Global and regional outsourcing contracts are typically outside the influence of the program manager, and as a consequence, service definition and delivery issues coupled with service disputes will impact the program's ability to perform and deliver.

Enterprise internal risks are mainly the "known–unknowns," which could impact the program's triple constraints. A detailed risk planning, identification, and risks response process should be carried out, and the program contingency reserve established by determining the cost to execute the risk response plans and to cover financial impacts of residual risks and secondary risks, i.e., after the risks response plans have been executed.

Risks (Positive) Opportunities

Opportunities can arise in obvious and in disguised forms. A disguised opportunity is one that could be perceived or interpreted as a threat. It takes skill to turn a perceived threat into an opportunity and then depending on the enterprise risk tolerance level to exploit this opportunity to achieve the maximum gain for the enterprise.

Organizational Process Assets

Enterprise assets in the form of OPAs, i.e., the plans, procedures, policies, and guidelines coupled with the EEFs (internal), should all serve as assets

to the program if they are well thought out and designed. However, in many organizations an attempt is made to globalize standards, processes, and procedures to increase efficiency and effectiveness. The risk of trying to fit everything into a "one size fits all" approach is that unless a detailed analysis and design are done, taking into account regulatory, compliance, and local considerations, the global standards instead of meeting their goals will be to the contrary, i.e., a cumbersome effort intensive and detrimental to the enterprise. Goldratt (1997) labels poorly implemented policies, processes, procedures or standards as "constraints" within the organization. This is a similar concept to bottlenecks on a production line where the objective is to clear the bottleneck to increase throughput. If in the program manager's organization there exists poorly implemented policies and procedures then what are considered assets are in fact constraints. Depending on the severity of the situation, the program manager may need to take corrective action or plan for the extra effort required to follow the poorly implemented policies, processes, procedures, or standards and use lessons learned to report back on the impact on the program.

Constraints

From the outset, every program must minimize the impact of internal as well as external constraints to allow as much flexibility while increasing the number of potential options. Therefore, when decisions need to be made, the timing of the decision and the option selected will provide the greatest benefit at the optimal time. Internal constraints include fixed deadlines, resource limitations, closeout periods, funding limitations, and limited infrastructure. External constraints include government, industry, and local authority regulations and vendor processes.

Integration Challenges

With the advent of outsourcing, new challenges arise for the program manager. Forward or backward integration for the development/support processes will be required and to a limited extent a similar implication of the "make versus buy" decisions. Outsourcing may have been introduced enterprise wide, and set roles outsourced e.g., programming, testing, integration, project management, and hardware infrastructure. This all implies that processes, tools and techniques will need to be integrated into the outsourcing partner. The success of outsourcing cannot be

measured by management metrics alone but perhaps more importantly by the willingness of program and project managers to select the enterprise preferred global or regional outsourcing company versus a program/project manager preferred known and trusted specialist company. A clear sign of whether the outsourcing contracts are well written and are a win-win for both parties are reflected by the behavior of the staff within the enterprise and their counterparts within the outsourcing companies. If there are consistent behavioral signs showing a lack of willingness to work with the outsourcing partner(s), then it is likely that the Key Performance Indicators (KPIs) being passed to management are not indicative of the true impact of outsourcing on a program, its product or service, and the Total Cost of Ownership (TCO). Outsourcing requires the creation of Service Level Agreements (SLA) defining items such as Requests for Information, Requests for Proposals, service offerings, change requests, disputes, and response times for all the listed items.

Contracts, service level descriptions, penalty, and earn back clauses are the backbone to outsourcing. However, the contractually agreed response times in the service descriptions can become serious constraints especially if there are many constantly changing factors such as change requests, issues, assumptions, and questions. The constraints are compounded if the processes and systems between the outsourcing partner(s) and the organization are manual and not integrated. Also, not to be underestimated is the effort behind creating the infrastructure to allow the outsourcing team, who may be off-shore, access to the company's development, testing, user accepted testing, and in some circumstances production systems. The same is true with all the processes that are coupled with developing a product or service.

For the enterprise outsourcing relationship to work well especially in areas that require interactive development relationships, the outsourcing partner(s) need to be tightly integrated with the enterprise and handled as a separate program. Otherwise, the challenge is with program managers themselves to determine on a per program basis how the external partners should be integrated. The consequence of a poorly thought out integration decision should not be underestimated.

Outsourcing partnerships typically last on average five years (Gartner, 2009); therefore, there is a high probability of a change of one or more outsourcing partners during the life of a program. If this is the case and the enterprise has done its homework by ensuring all development and support tools belong to the enterprise, then the impact of the change of the outsourcing partner will be minimized. However, if the enterprise made

the decision to use the outsourcing company's methodologies, tools, and processes, then the separation process will be extremely disruptive to the program, and the organization will have unnecessary one-off costs especially if the same approach is taken with the new outsourcing partner.

PROGRAM "INTERNAL" CONSTANTLY CHANGING FACTORS

Program "internal" constantly changing factors is a phrase used to express the dynamic nature of a program. These factors need to be identified, categorized and assigned to the area(s) of impact and the person(s) responsible to address them in the most effective way. As a program is established, if a plan to structure this information and manage it based on a structured methodical approach is not developed, the program manager and his or her team(s) will be continually playing a "catch-up" game, which is not the best way to start a program.

Figure 18.5 shows the types of internal constantly changing factors that impact the program and its components. However, what the diagram cannot show is the complexity of program regarding the changing factors nor

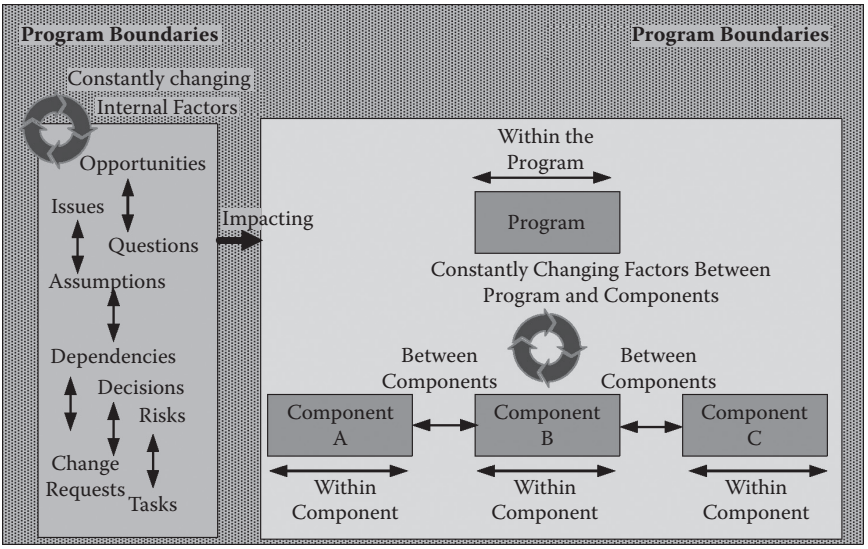


FIGURE 18.5
Program's internal constantly changing factors.

the number/complexity of each type of changing factor. Imagine the program covering several countries all with their own local related projects (components) and then all linking them back to the core program. The picture becomes increasing more complex to understand let alone manage.

In summary, the program and project managers will have to deal with constantly changing factors, which will impact the program unless the process to identify, understand, monitor, and control these constantly changing factors are defined and executed in a timely manner without losing the program's big picture.

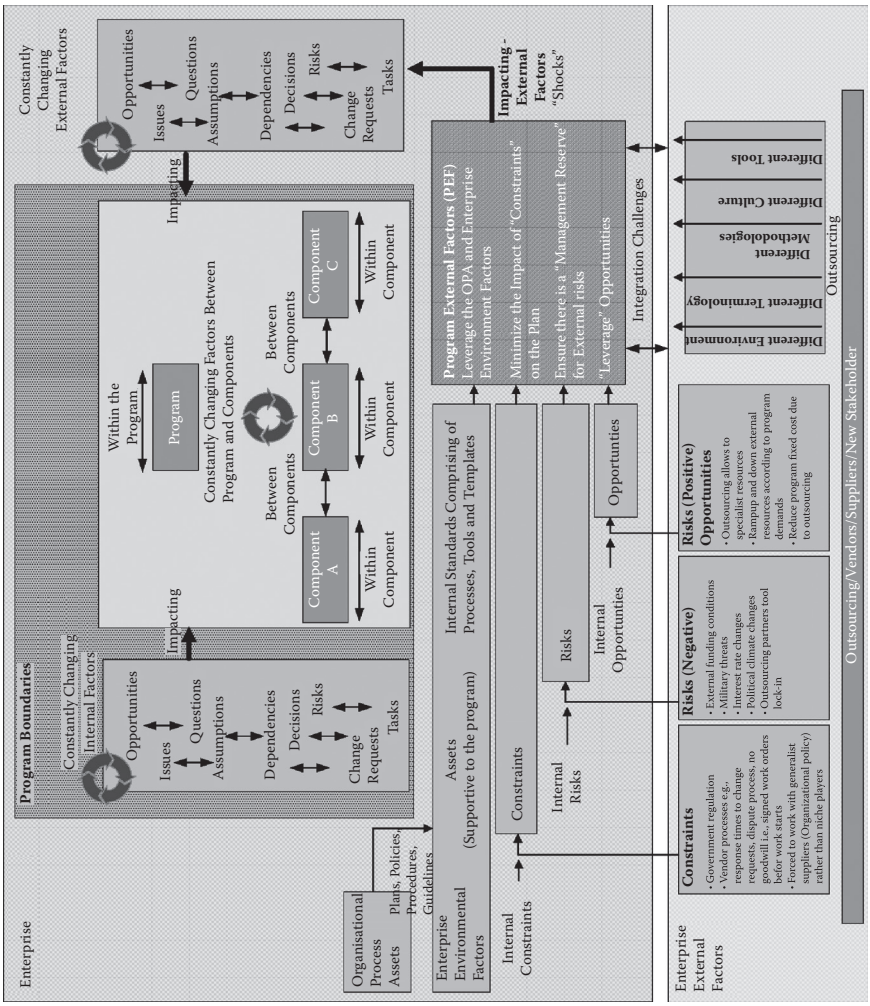
Note: Tasks are shown as one of the constantly changing factors because of their relationship to risks and issues. A risk is an unrealized issue, and an issue is an unassigned task. Therefore, as the impact associated with an issue changes over time, then the assigned issue (task) also changes accordingly to ensure that the issue is appropriately and fully resolved.

PROGRAM "INTERNAL" AND "EXTERNAL" CONSTANTLY CHANGING FACTORS

The program manager must manage program "internal" and "external" constantly changing factors to ensure control is maintained. Figure 18.6 shows the complete picture of the internal and external impacts and where they are generated.

The complexity of the program environment and its constant interactions with changing factors (influences) is hard to manage, and this may be a reason why between 30 to 70% of programs fail (Gartner, 2011). For the program manager to successfully manage complexity, the challenge is to find a way to plan and set up the program environment so it is designed to be able to handle shocks and negative scenarios as a result of a sequence of related or non-related constantly changing factors. An experienced program manager will able to manage complexity and simultaneously optimize the program environment because the control mechanisms have been designed into the supporting processes and reflected in the supporting PMIS tools (described in detail in next section).

Even with well-structured tools that directly address internal and external changing factors coupled with the ability to use best practices and access expert advice, there will be some situations that will require unplanned reactive responses. If the program manager has taken the


Enterprise
Program Boundaries
Constantly Changing Internal Factors
Opportunities
Issues
Questions
Assumptions
Dependencies
Decisions
Risks
Change Requests
Tasks
Impacting
Within the Program
Program
Constantly Changing Factors Between Program and Components
Between Components
Component A
Component B
Component C
Within Component
Constantly Changing External Factors
Impacting
Organisational Process Assets
Plans, Policies, Procedures, Guidelines
Enterprise Environmental Factors
Assets (Supportive to the program)
Internal Standards Comprising of Processes, Tools and Templates
Internal Constraints
Constraints
Internal Risks
Risks
Internal Opportunities
Opportunities
Program External Factors (PEF)
Leverage the OPA and Enterprise Environment Factors
Minimize the Impact of "Constraints" on the Plan
Ensure there is a "Management Reserve" for External risks
"Leverage" Opportunities
Impacting - External Factors "Shocks"
Integration Challenges
Different Environment
Different Terminology
Different Methodologies
Different Culture
Different Tools
Outsourcing
Enterprise External Factors
Constraints
• Government regulation
• Vendor processes e.g., response times to change requests, dispute process, no goodwill i.e., signed work orders before work starts
• Forced to work with generalist suppliers (Organizational policy) rather than niche players
Risks (Negative)
• External funding conditions
• Military threats
• Interest rate changes
• Political climate changes
• Outsourcing partners tool lock-in
Risks (Positive) Opportunities
• Outsourcing allows to specialist resources
• Rampup and down external resources according to program demands
• Reduce program fixed cost due to outsourcing
Outsourcing/Vendors/Suppliers/New Stakeholder

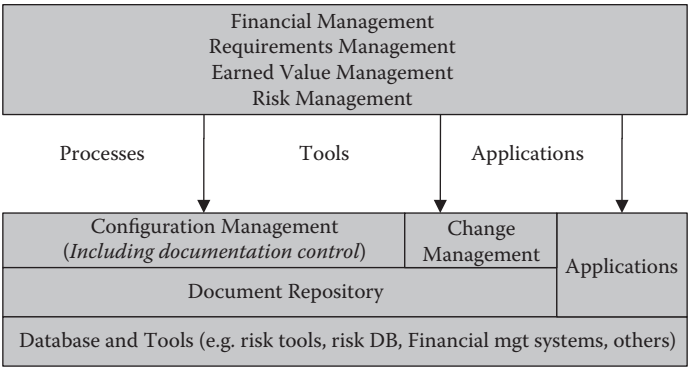


FIGURE 18.7
Representative functions of a PMIS.

necessary steps to drive the program proactively even if unplanned reactive situations arise, the control mechanisms established should be more than sufficient for the program manager to lead the program to the desired outcome.

PROGRAM MANAGEMENT INFORMATION SYSTEM TOOLS

The PMIS is a generic term to mean a series of interrelated tools supporting to collect and manage information needed to monitor and control the program. There is one other system tool that is not part of the PMIS tool set, and it is described as the Procurement Management Information System (PMI®, 2008). Figure 18.7 is for reference only to show the various functions covered by PMIS.

The PMIS and the Subset of Tools that Benefit the Most from the Information Structuring Methodology

The information structuring methodology can be applied across the whole program including the typical areas covered by PMIS such as configuration management, financial management systems, and earned value

FIGURE 18.6 (see facing page)
Holistic picture of the constantly changing "internal factors" and "external influences" on the program.

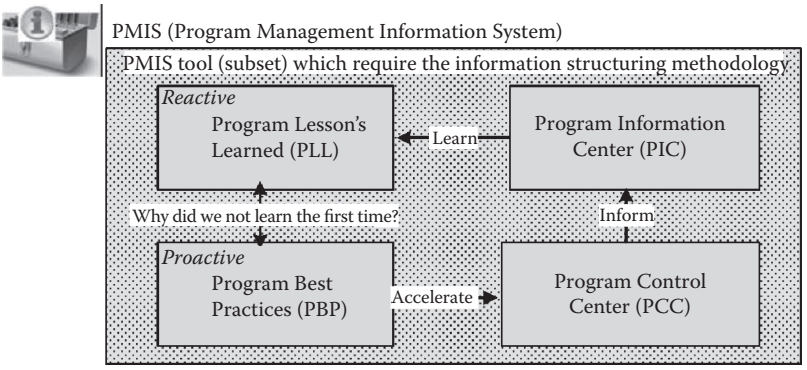


FIGURE 18.8
PMIS tools that benefit the most from the information structuring methodology.

management, but these are not impacted the most in terms of information structuring. The PMIS tools/functions, which benefit the most from the information structuring methodology especially when the methodology is consistently applied across them are shown and described below in Figure 18.8.

These PMIS tools are used across ideally across the whole of the program management life cycle, and it is only a question of how soon they can be established and operational.

Program Control Center

The Program Control Center (PCC) is the center or place to control the program. To be in control of the program requires not only the timely information of performance reports but also a complete understanding the potential impact of the constantly changing factors and how they can or are impacting on the program. To gain the full benefit of the PCC, the component or project leaders should use this tool within the embedded program information structure. Also every team member must be empowered to be able flag issues at any time, ask questions, raise new risks, update information on existing risks, and assign issues to person(s) while notifying others automatically to keep the relevant stakeholders informed. However, the PCC is only as good as to the completeness and accuracy of the information within it. The PCC empowers the program manager to make decisions quickly based on a solid foundation of facts. Its importance is when corrective actions are required; therefore, decisions

must be made to fully address the problem situations. If all the facts are available within the PCC, then very little decision time will be required to make the right decision.

A change of behaviors is required by the entire program stakeholder group, so instead of the stakeholders using emails to communicate issues, risks, questions, etc., they use the PCC, which then directly informs the recipients. This change of communication approach is one of the rules that must be applied and upheld throughout the program's life cycle. From the author's experience, some program stakeholders may be reluctant to use the PCC. If this is the case, a presentation of the tool and its benefits should be given again and available in a meeting or webinar. If there is still reluctance to use the PCC, then the information contained with their emails can be moved and mapped into the PCC to ensure completeness of information while taking into account any sensitive information. For the program and project teams if the information configuration is done correctly, the tool will empower them, and it will not take long before every team member uses it on a daily basis. The ownership and administration of the PCC ideally is with the PMO.

Program Information Center

The Program Information Center (PIC) is the second tool within the PMIS and is used as an information store so information can be pushed or pulled to the extended stakeholder community. The level and amount of detail required by the stakeholders is determined when the team prepares the stakeholder register. Information contained in the PIC includes decisions made and resultant impacts on the program life cycle and/or project life cycle. It includes questions and answers, assumptions made, and the impacts on the program life cycle and/or project life cycle. All stakeholders have access to the PIC, and it will provide a dashboard of the program status as well as an information history categorized to the main program benefits and project deliverables.

Relationship between the PCC and PIC

The PCC and PIC conceptually are shown as two tools, but they can be the same tool depending on the security, functionality, and roles built into the tool. Figure 18.9 shows them as separate tools. The PCC is where the work is assigned, monitored, and completed. The PIC ensures that

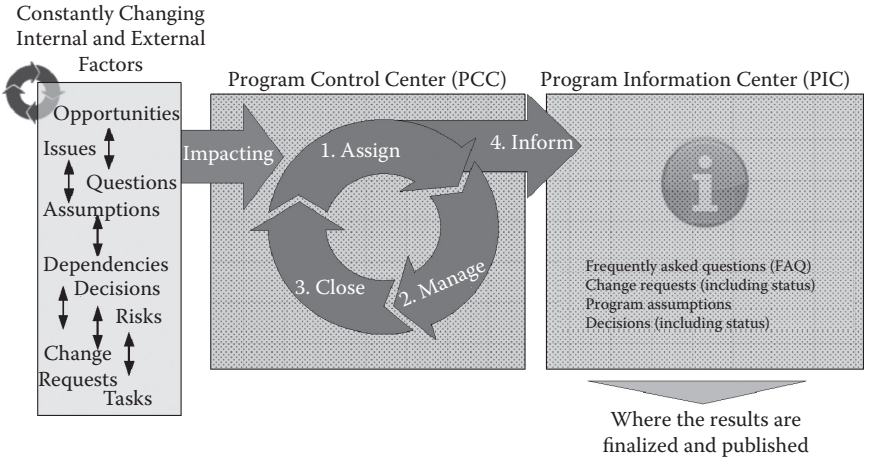


FIGURE 18.9
Relationship between the PCC and PIC.

information transparency with the extended stakeholder community is available such as what has been done, based on what assumptions, the decisions made including change requests, and published documents.

It is important to determine which stakeholders have access to the PCC because this is where potentially sensitive information is stored, whereas the PIC is for non-sensitive information for the entire stakeholder community.

PROGRAM BEST PRACTICES

Program Best Practices (PBP) contain all the templates and reference documents relating to best practices adopted within the program. It is a subset of the OPAs, and it is typically managed by the PMO.

Program Lessons Learned

Program Lessons Learned (PLL) is structured in the same way as the PCC and PIC, therefore allowing comments and reports to be captured around the activity areas (components, deliverables, and work packages). It is a non-restrictive database accessible by all. As a program is progressing, on completion of formal deliverable reviews, a lessons-learned document is written and categorized against the area/item/deliverable. On completion

of a component, key findings are reported, and the lessons learned are archived. The PLL also is managed by the PMO.

Selecting the Appropriate PMIS Support Tools

Often program managers try to manage programs with single-user tools. A classic example is to use a spreadsheet as a program task list or a time reporting system. To help program and project managers decide the best support tools to use, a simple set of critical success criteria shown below will help with an initial selection of program support tools. One of the success criteria is often challenged—a free tool, i.e., not charged to the program or project. Often, program managers are not prepared to pay a contribution for a multiuser tool and therefore decide to use a single use tool that is widely available within the enterprise. A program manager should know when to invest in the program and not be "penny wise and pound foolish." Team members and consultants cost thousands of dollars a day so doing tasks as a result of confusion or misunderstanding arising from a lack of an integrated support tool is worth that small initial tool contribution.

When a support tool is being proposed, it should be first checked against the list below to see if it meets all the success criteria. The tool should not be implemented if it misses even one success criterion because the outcome will be an unused tool, and a program will have an unnecessary risk. Guidelines for program performance tools in terms of success criteria follow.

- Multi-user—several people can update task lists simultaneously
- Easy to use—people do not change from using existing tools if the new ones are harder to use
- Globally accessible—team members regardless of where they work are able to use the same tools
- Performance—the tool has optimal performance wherever the teams are located
- One integrated tool rather than several—one view of the program and one view from all the knowledge areas
- Free to use—no additional cost to the program and/or its component project's stakeholder groups

Enterprise tools that are available and free for the program may not meet the tool success criteria for some of the intended uses. Figure 18.10 below

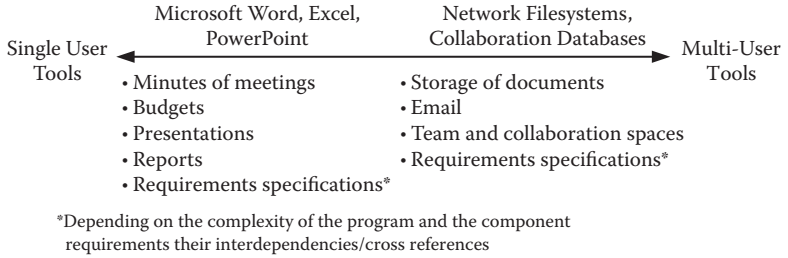


FIGURE 18.10
Program/project single and multi-user tools.

shows there are uses for single user tools, but the limitations should be understood, and the temptation to extend their uses to areas that are better served by multi-user tools should be avoided even if additional program costs will need to be incurred.

Relationship between the Program and Component Schedules and the PCC

The challenge with constantly changing factors, which includes tasks, follow-ups, documenting risks, etc., is to know what is the best PMIS tool to use to identify, categorize, and control the constantly changing factors. A program or project plan at times does not make sense to develop, as the time and effort required to insert most of the rapidly changing factors into the plans is too high and also the sheer number of them would render the plan continually out of date. Therefore, a mechanism is required to allow all the small work activities (tasks less than a day) to be captured, categorized, and assigned. Recipients should be informed within four hours, allowing immediate action to be taken. These items should be managed within the PCC. If any of the items in the PCC appear likely to impact the program's triple constraints and/or increase the risk, then they should be escalated to the program manager, and the impact analyzed. These changing factors should then be reflected in an updated program schedule or re-baselined, if a change request is approved.

A common question among some program and project teams is whether the PCC replaces the program schedule, and the answer is clearly no. The program schedule controls the program and project deliverables, work packages and sequencing, and the PCC is used to empower the teams to

allow them to do their day-to-day jobs and manage the constantly changing factors and external shocks without derailing the program or putting it into a delay. From the author's experience, the number of records (actions, questions, risks, assumptions, and change requests) in the PCC is two to three times more than the number of records in a project schedule, proving the importance of the PCC and the empowerment of the whole team.

The PMIS and Its Supporting Role for Achieving Effective Program Management

The PMIS, if used to its maximum potential, is one of the critical program success factors as it brings the OPAs and the EEFs (internal and external) together in a way that gives a clearer picture of the dynamics impacting the program. Figure 18.11 shows the central role the PMIS has as a critical support tool for the program manager and his or her teams.

In summary**,** the PMIS tools and their types, which rely on the information structuring method, have been detailed, and the next step is to describe the information structuring methodology itself. This methodology will structure and categorize information based on constantly changing factors and map them against the program benefits/deliverables. Note, if the last step is missed the PMIS tools will provide limited impact within the program.

INFORMATION STRUCTURING METHODOLOGY—TECHNIQUES

Everything described to this point has highlighted the need to be able to manage and control factors, and if successful, will greatly reduce the risk of the program requiring corrective actions. The PMIS tools, PCC, PIC, PBP and PLL, were described at a high level, and their internal structures configured based on the output of this section. The information structuring methodology aligns with the program management life cycle (PMI®, 2008), which are both iterative in practice. Therefore, as the program progresses through its life cycle, a better understanding of program's information content, deliverables, and benefits will be reflected in the information structures that are built into the PMIS tools. (See Figure 18.12.)

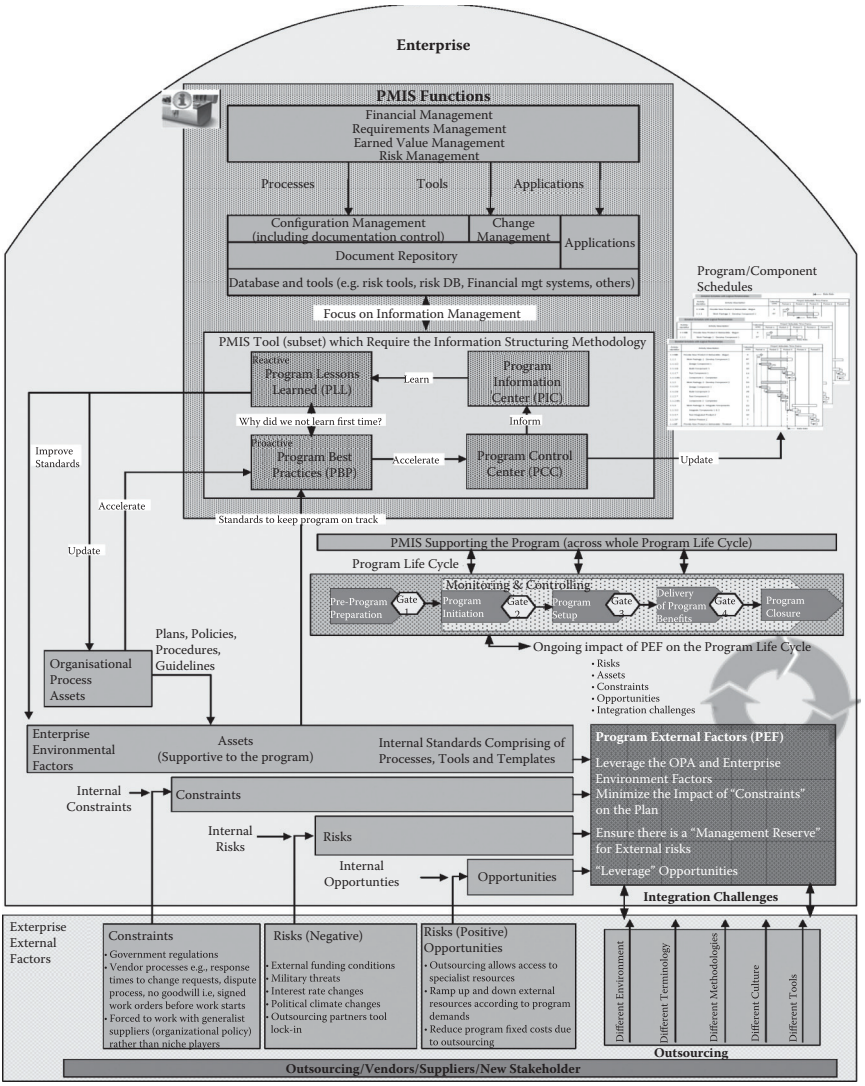


FIGURE 18.11
PMIS and its supporting role to achieve effective program management.

Process

The first step is to define the deliverable types per program/component. Then the component deliverables should be defined at a high level, and then per deliverable, the next step is to determine what internal and external changing factors may impact each deliverable. Once this list has been

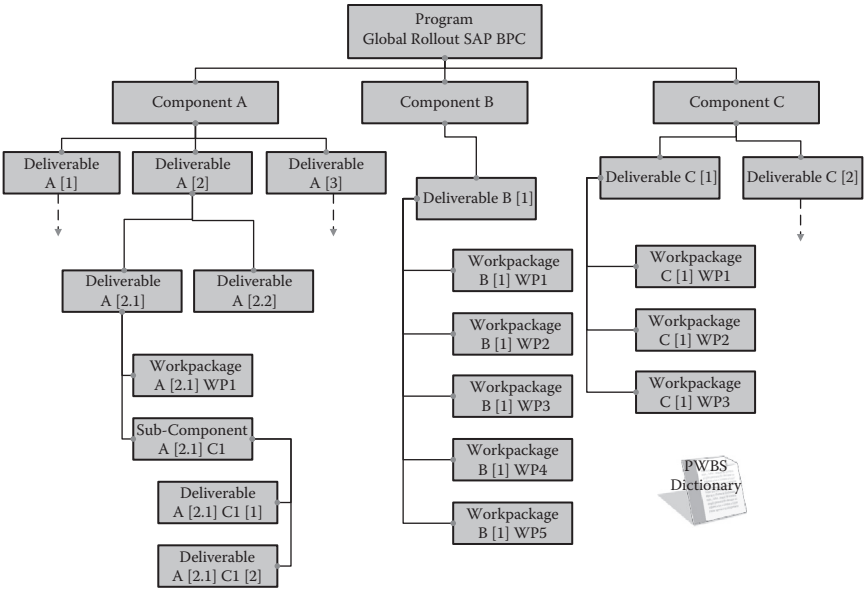


FIGURE 18.12
First draft of a high-level deliverable plan (PWBS).

created, then the program and project file structures can be created, and the PCC and PIC taxonomies can be implemented.

Program/Project Deliverable Types

From the author's observations, team members can often be confused as to what they are producing and where it is used. Some believe work packages are the end result, and others believe that program or project phases are more important than deliverables. As a result of this confusion, especially at the component level, there is a risk that file-system structuring, performance reports, and registers of various types are defined and configured in suboptimal ways that will cause inefficiencies within the program.

Programs and their respective projects produce benefits and deliverables. If deliverables are managed correctly, then the benefits will flow from them. Therefore, deliverables must be the main focus, and everything must be related and linked to them. There are five main deliverable types:

1. Documentation (deliverables)
2. Training
3. System(s)/Application(s)

4. Product/Service/Infrastructure
5. Organization(s)

The information structuring methodology focuses on the deliverable type "documents" and less on the other four deliverables types. This is because the document "deliverable type" describes the other deliverable types. Therefore the other deliverable types are managed through "the document deliverables" and the actions taken on those documents.

An example follows

The program is to rollout globally SAP's Business Planning and Consolidation (BPC) to 100+ countries, and each country will need to replace old systems, change interfaces, modify processes, install new personal computers, provide training, and adapt to their local organization because of the creation of business finance hubs in the main regions of the world. The schedule is to complete the program in three years before the old systems are out of maintenance support.

Assume that this program is in the initiation phase, and the program infrastructure needs to be established, and the PMIS is part of the infrastructure. The program team is in place, and some of the local country project resources have been identified.

However, detailed planning only takes place in the program setup phase in the life cycle, and this is the time when the program requirements are defined including component requirements. This will then lead to a program architecture to be created followed by the program work breakdown structure (PWBS). At this point the program and the project deliverables are defined only at a high level. As soon as the project managers are in place in the delivery of program benefits phase in the program life cycle, their projects are initiated, and work begins to produce their defined deliverables.

The problem with the above described timing is that until the projects deliverables are defined, the impact of the constantly changing factors and external shocks are not being captured in an effective way to understand if the deliverables are indeed possible or are still relevant.

The BPC program manager in the initiation phase understands the need to create a high-level program communications management plan to outline the stakeholder communication requirements, especially with all the questions and concerns that will be raised

on this high-profile program. He also understands the need to set up the PMIS support tools as soon as possible to be able to capture, categorize, and assign this information, which he calls constantly changing factors. The program manager organizes a workshop with the program resources, including local country identified key resources. He explains that the need of being able to capture and manage information effectively and explains the PMIS tools and the process to structure the tools. In the workshop, the team creates as best they can from their knowledge of programs and finance planning a high-level PWBS with component deliverables. Many of the program deliverables are mandatory as per the organizations internal standards, which are part of the EEFs (internal). The program manager explains on completion of the exercise that they will be redoing it during the next two phases of the life cycle: program setup phase and the delivery of program benefits phase, and each time going to the next level of detail based on new information and insight obtained as the program progresses through its life cycle.

The program manager found a way to represent each document deliverable with all the necessary information including its status in a simple picture, which can be used consistently across the program and within the components. Figure 18.13 is the template used for the document deliverable representation that would then be part of a program and components documentation plan.

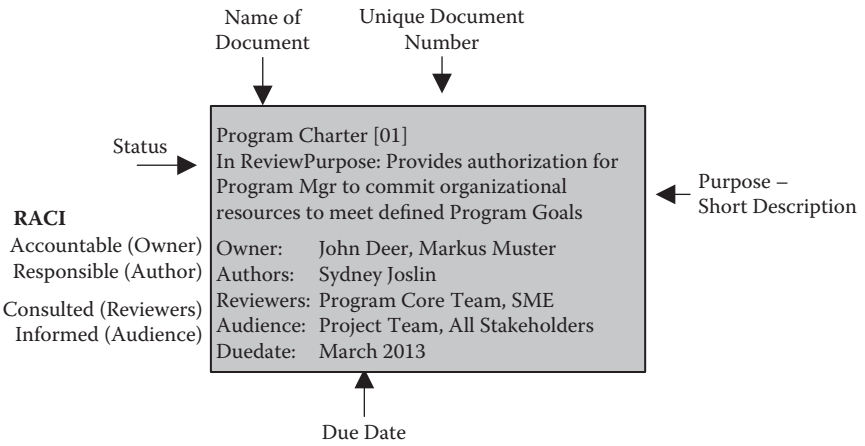


FIGURE 18.13
Depiction of a document deliverable with its key attributes.

The program manager knew that by pictorially visualizing all the document deliverables as shown above, the effort required to train managers around the world to recognize the associated information with a document would be minimal, and therefore, the added benefit was that they would see their role in either the creation of the deliverable and/or the maintenance of the deliverable once the program had transitioned into operations. This pictorial view of a document shows everything except for the effort and sequencing of the document deliverables.

Differences between "Supporting" Documents and Document "Deliverables"

Supporting documents contribute toward document deliverables but are not considered deliverables in themselves. Document deliverables should always be under version control, and supporting documents contribute to the contents of one or more document deliverables and on inclusion this will instigate a new document deliverable version.

Examples of supporting documents include minutes of meetings, interview write-ups, and workshop summaries, and all should contribute toward one or more document deliverables, e.g., the architecture specification, requirements document, or the PWBS. If supporting documents do not contribute to any document deliverable, then effort required to create the supporting document is either wasted, or the document deliverable it was intended for has not yet been identified.

The Program Document Deliverable Plan

The program document deliverable plan details the program and component document deliverables, including each document deliverable attribute. The process to determine the key document deliverables ensures that the majority of the document deliverables are identified during the program initiation phase. In organizations that are mature in program management and follow set program/project management methodologies, it is likely that the majority of the key document deliverables will be the same across all programs. The rest will be specific to the program.

High-level program estimates are done in the pre-program preparation phase of the life cycle, and the key deliverable output of this phase is the program business case. In the initiating phase the program charter is created, which also describes the components, and a high-level program

plan for all components is prepared. The process to come to more accurate program cost estimates is based on creating a high-level PWBS with deliverable types and then determining the key document deliverables. As the PWBS details 100% of the program scope, the information provided from this effort will help to fine tune the business case and reconfirm the program's financial and non-financial justification.

Depending on the program manager's competencies and the organization's program management methodology, following this process will increase the probability that the document plan is complete and accurately reflects the program's documentation needs. The process to create the documentation plan may start in the program initiation phase, or it may wait until the program charter has been approved and the program has moved to the program setup phase. Either way, there is now enough information to start the next step of the information structuring methodology to determine the potential constantly changing factors or possible program shocks per deliverable. Once a mapping of the constantly changing factors to document deliverables is completed, the program infrastructure can then be finalized. From this point forward (refer to Figure 18.14) all information related to constantly changing factors and program shocks can be recorded in the PMIS within the relevant tool(s) to show a full picture allowing the appropriate actions/decisions to be taken

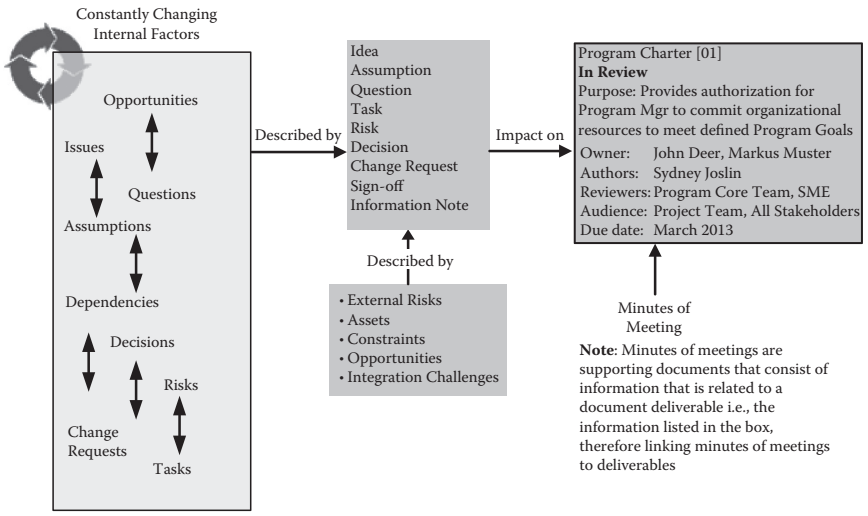


FIGURE 18.14
Distilling internal program "changing internal factors" and external program factors into impacts on a document deliverable.

based on facts including any trending information associated or linked to the deliverables.

Efficient Structuring and Governance of a Program File Management System

This section covers an important topic that often is overlooked by the program/project manager and may be left to people who lack the expertise to establish an effectively designed file management system. The impact of a poorly designed and maintained file management system is where files are difficult to find, which leads to confusion as to the process for updating and notifying document audiences that updates have occurred and inconsistent documenting naming and version control exist. This is one of the obvious indicators that program quality assurance is missing and/or not being adhered to, all of which all adds to team frustration and overall program inefficiencies.

There are sophisticated document management tools on the market that manage the document creation, storage, and maintenance process. The newer tools promote meta tagging more than hierarchical structuring (but both methods are typically supported). The same challenge exists, though, with meta tagging as with hierarchical structuring where guidelines need to be defined to ensure that the meta tagging definitions are understood across the program teams and consistently applied by the document authors. If for any reason this is not the case, then the same problems will result as with a hierarchical file management system that has been poorly designed and maintained. Regardless of whether the document management tools support hierarchical, meta tagging, or both information categorization approaches, the full benefit of these tools can only be realized if they meet the tool success criteria previously described.

The following file management system structuring guidelines are suggestions for achieving a structured approach for control with the required flexibility for the document authors, editors and reviewers.

> Guideline 1: Never mix operational and program project work—create separate directories; see Figure 18.15.
>
> Guideline 2: Previous related program or project work needs to be easily accessible in a useful format or moved into an archive directory.

Referring to Figure 18.16, this approach allows archive material to be found without confusing it with the material generated by the active program.

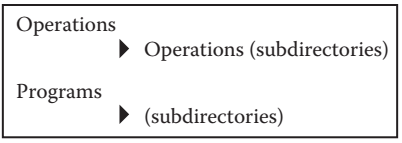


FIGURE 18.15
Separating operational and program directories.

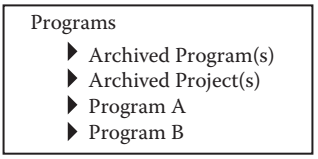


FIGURE 18.16
Separating previous program/project work from the new program(s).

If there is some effort required each time to obtain the required archive material, then the relevant material can be copied into the reference material directory—see Guideline 5.

Guideline 3: Never create a time dependent file management system.

Time-dependent file management system examples include putting in fixed dates for deliverables in the file structure or using the program or project life cycle phases. The latter example is a frequently used way of creating program and project file structures. The problem is that as the deliverables within the life cycle phases are created and updated across more than one life cycle phase; therefore, it is difficult to determine the phase to place and find the deliverable.

Figure 18.17 shows how pre-defined document deliverables (part of the EEF [internal] requirements) can be created in one project phase but completed in another creating the dilemma as to the most appropriate

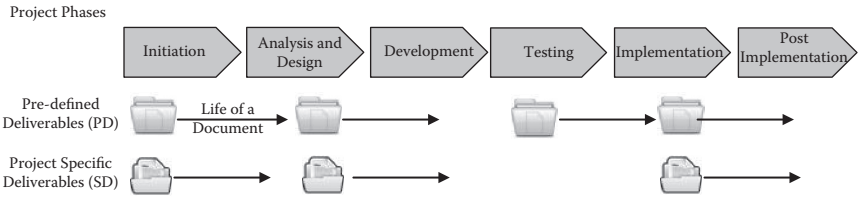


FIGURE 18.17
Locations to store documents if file management structures follow program or project phases.

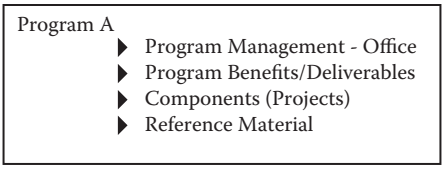


FIGURE 18.18
Core program file management system structure.

location to store documents as well as to where best find documents stored by someone else. The same dilemma exists at the program level, e.g., the business case and the benefits realization plan will span at least three program life cycle phases.

If a file management system structure is defined without time dependencies, there is no question as to where the document deliverable should be created, and all the supporting documents that contribute to the deliverable contents will be placed under the document deliverable in a support documents folder. See Guideline 4.

> Guideline 4: Separate program management, project management, and PMO documents from the document deliverables that contribute to the end result of the program; see Figure 18.18.

The program manager and PMO documents are separated from the program benefits/deliverables as the former are focused on execution and quality assurance, and the latter is where the program vision is realized, documented, and then transitioned into operations.

> Guideline 5: Separate all reference material, i.e., not produced on the program from the other directories.

Referring to Figure 18.16, the reference material directory is used as a knowledge sharing directory where articles and documents including ones from previous programs/projects, books, etc., can be stored for reference. This directory can also be for software downloads if there is no other company procedure or location for storing third party software programs. The reference material directory is often cross referenced by the PIC to inform stakeholders of useful background information. For Internet content, the PIC would directly reference the URLs.

> Guideline 6: Component projects create file management systems based on the program structure to ensure consistency within the program.

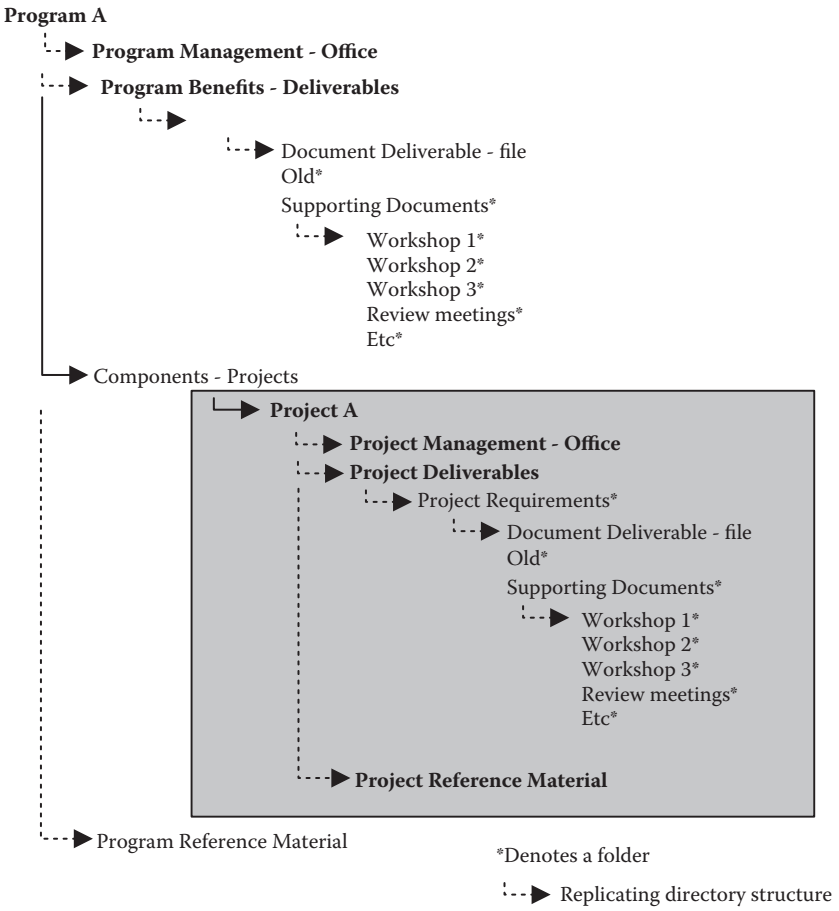


FIGURE 18.19
Replicating directory structure program to component ensuring consistency within the program.

By ensuring that the program and components file management structures are created and structured in the same way, documents that are referenced from one component project or another can be easily found. Also if a new project manager takes over a component then with a common file structure, little or no start-up time will be required. The same is true for team members working for more than one components project e.g., SME, architect, or the PMO staff. Figure 18.19 shows the concept of replicating file management structures where the component file structure is based on the program file management structure. If component subprojects are required, then a replica of the component file management should be used.

Guideline 7: Apply governance as to who can create what directories and who owns the directories.

Figure 18.20 shows a logical structure that can be prepared once the work has been done to determine the deliverables across the program and down to the component level. The governance structure is clearly defined as to who is responsible to design the file structure at each level. If it is done and maintained, then the likelihood of missing or lost documents will be minimized. Once a program file structure has been defined, its structure can then be reflected in a tool that is used in the enterprise to store the program documentation.

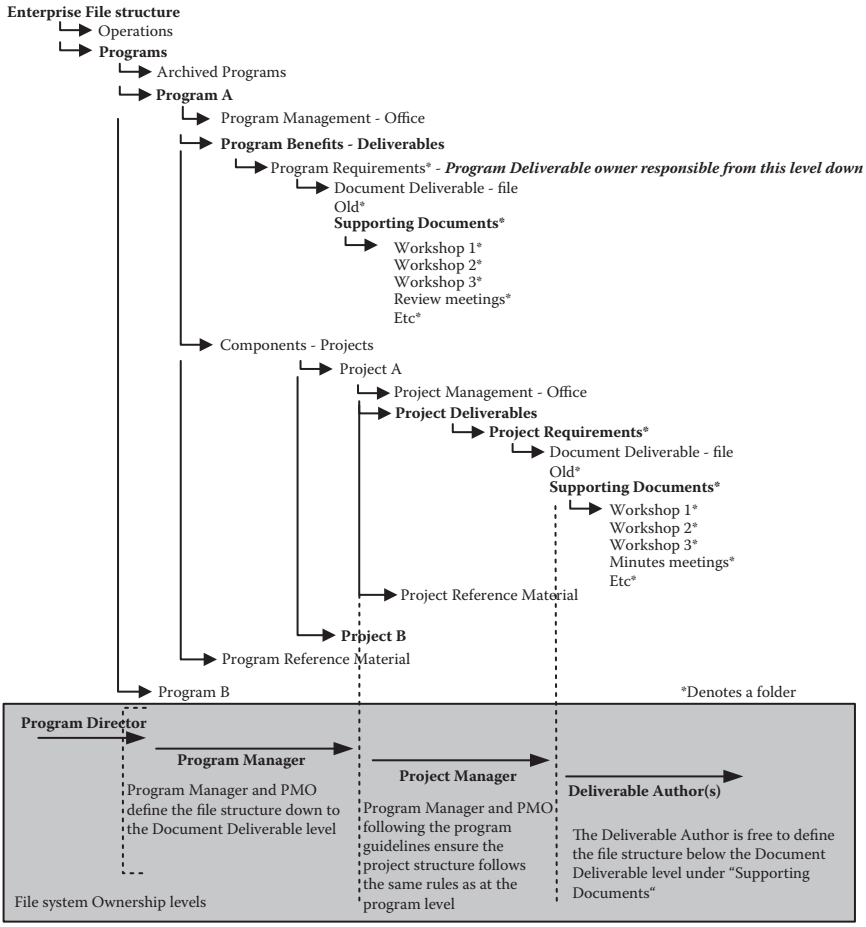


FIGURE 18.20
File management system governance from the program to project deliverables.

Directories should be named clearly and consistently, and version control should be used on documents that are subject to review and revision. Only the latest version should be available in the main directory view, and old versions should be moved to the "Old" directory.

If an hierarchical management file structure will no longer be used because the program is using a document management tool with meta tagging, it may still be useful to create a file management system on paper and then use it as a way to check that the defined meta tags (e.g., language, content, description, abstract, author, and version) can find all the documents within the program without missing one. This quality assurance activity should be carried out by the PMO.

> Guideline 8: Keep all supporting documents to a document deliverable together throughout the program and project life cycles.

Every supporting document created should contribute to a document deliverable. Therefore, the file structure should be structured in order that all of a document deliverable's supporting documents are contained within a sub-folder. This ensures nothing is lost or misplaced during the program execution; see Figure 18.21.

> Guideline 9: Every document deliverable has a unique number—never change it or reuse it for another document. Otherwise it will create an administrative overhead to redo all the cross referencing in documentation.

> Guideline 10: Never create file management system directories that *duplicate or copy documents. Cross reference from within the documents.*

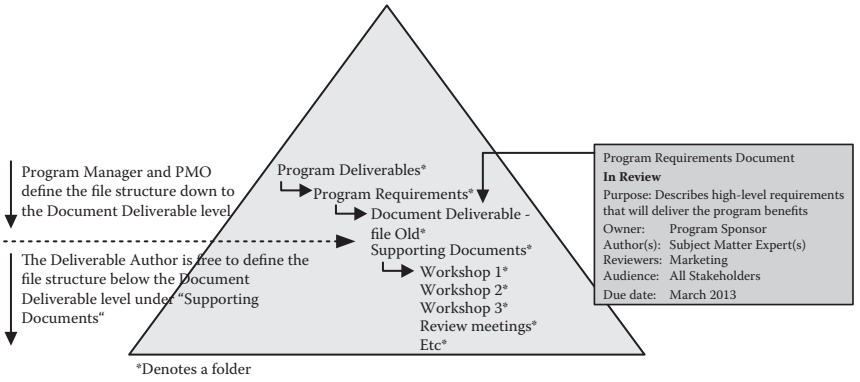


FIGURE 18.21
Structuring a document deliverable's supporting documents.

By using the above 10 guidelines to structure program and project file management systems, the likelihood of confusion, risk of repeated work, and loss of documents will be greatly reduced. The next step is to create the file management system structure for the program and projects so they both follow the same rules and are 100% related to the PWBS. This approach ensures the file management system is 100% aligned to the program deliverables and is easy to use and maintain for the team and other stakeholders.

Document naming and version control within the name should be part of the PMO's quality assurance guidelines. If the program is using a document management tool, then the author of the document will define the name based on the PMO's guideline, and the tool will manage the version control. If the program is not using a program management tool, i.e., the approach is manual, then it is essential to create document names that are meaningful and also include a version control within the file name, e.g., "Program-Requirements v1a" where "v1a" refers to the version number.

Defining Information to Be Mapped into the Program Control Center

The PCC is part of the PMIS tools and is the central tool where program transparency is obtained. The key is to replicate the program and project directories structure down to the deliverable levels and then assign from the list of constantly changing factors the ones that will impact each deliverable from the program down to the work package; see Figure 18.22.

Ideally, the PMO should determine the most applicable program control taxonomy so as to ensure any event, action, or shock to the program can be immediately identified, quantified, and assigned to a person, and the deliverable(s) most impacted is easily identified. Figure 18.22 shows a list of constantly changing factors that impact the document deliverable (Program Charter). These items are built into the PCC as part of the information structuring process and are prepared per document deliverable.

A guideline to consider is to determine whether to mix documentation with all the issues, risks, decisions, etc., or keep them separate but link or cross reference them. The decision is up to the program manager on how it should be handled, but it is important to understand the implications of storing documents in the same place as all the actions on the document or to see them separately. It is easier to manage by keeping all the actions on

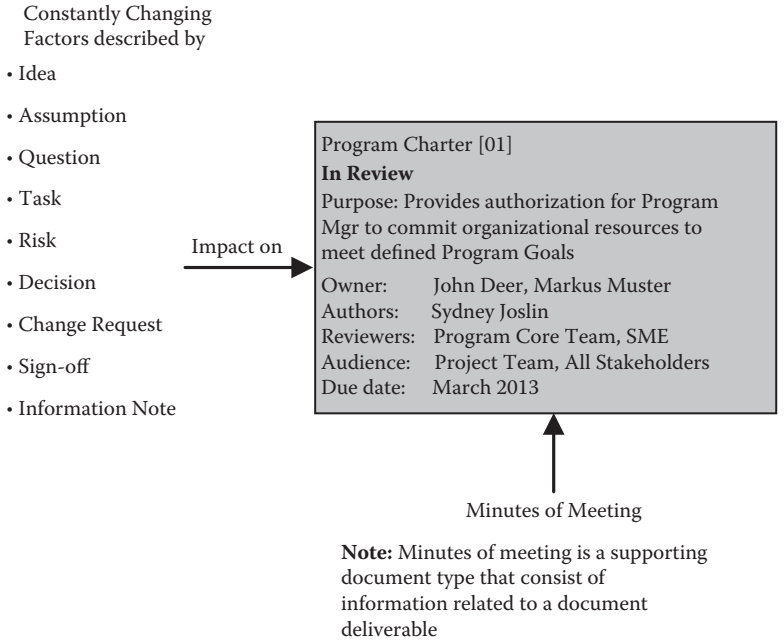


FIGURE 18.22
Information to be mapped to document deliverables with the PCC.

the document separate from the documents themselves as the actions if addressed will be closed, but the consequences of addressing the actions will be reflected in the documents themselves. On completion of the program or project the document deliverables are kept; however, all the items in the PCC may be referred to for audit reasons as well as used for lessons learned. Otherwise they have little value as the program or project goes into the closure phase.

Defining Information to Be Mapped into the Program Information Center

The process of creating the taxonomy of the PIC is the same as that used to create the program file structure and the PCC; however, the actions on the deliverables vary as this tool's primary purpose is to allow both a pull and push of information to the stakeholders. The tool should be configurable to create stakeholder groups and roles to different types of information and who need to receive specific information.

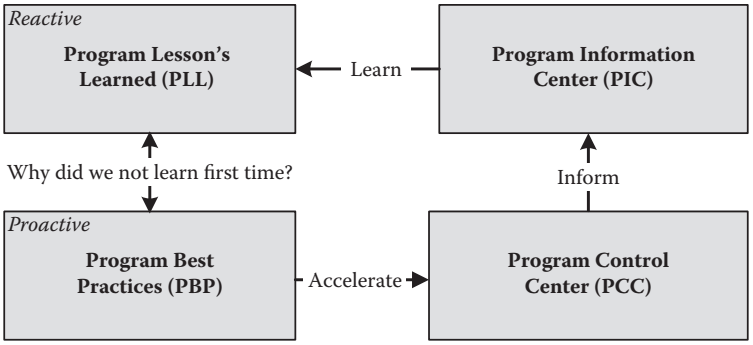


FIGURE 18.23
Relationship between the PMIS tools.

Uses of Program/Project Life Cycle within the PMIS Tools

The program/project life cycles are used only to show the impact of an assumption, decision, change request, or risk where impacts cover one of more phases of a life cycle. For example, if the program is based on a number of assumptions, then they would be captured in both PCC and PIC, and then a visual diagram of the life cycle can be used to determine specific impacts. If the assumption is no longer valid some months later, the impact to the phases of the program can be better understood, therefore providing insight into any corrective actions required. Figure 18.23 shows the relationship between the PMIS tools.

Completing the Program Infrastructure Setup

Using the guidelines described above the program manager will have a clear understanding of what deliverable types, including a detailed list of document deliverables, are anticipated to complete the program. The PMIS tools, regardless if they are highly sophisticated/integrated tools, can be customized to the information taxonomy that has been prepared to ensure that, regardless of whatever program internal constantly changing factors or program external factors occur, they can be handled in a controlled and predicable way with an empowered program team.

Gate Approval to Move from the Program Initiation Phase to the Program Setup Phase

Everything described to this point is the first iteration of the information structuring methodology impacting the deliverables file management

system and tool taxonomies. The program manager will have structured the program using the tools and techniques described to give it a good foundation to take on the challenges of the program. The gate approval of the program business case with the drafts of two required document deliverables (high-level roadmap and program documentation deliverable plan) moves the program into the program setup phase.

Program Setup and Delivery of Program Benefits Phases

There is one major step required in this information structuring methodology that will go through two iterations, once during the program setup phase and then again in more detail in the delivery of the program benefits phase. The objective is to create the contents of the document deliverables for the program and then for the components. A strong collaborative effort among the document deliverable owners, authors, and reviewers is required. If for any reason this step is not completed, there is a high probability that the program will suffer in terms efficiency and effectiveness and more than likely have issues maintaining the triple constraints resulting in dissatisfied stakeholders and increased program risk.

Creating the Contents of the Document Deliverables

As a program progresses, there is a temptation to leave the documentation to the authors and reviewers to determine the contents of each deliverable. There are obvious risks associated with this approach, such as varying uses of terminology, gaps, and overlaps between documents, and little understanding of the dependencies between documents. Some documents may be missed all together, and others could be written to mixed audiences. The result is confusion, lost time, and incurred additional costs. Advocates of agile methods may state that structuring documents this way or even documenting to this extent is not required, but regardless of the type of program management methodology, few organizations would launch a product or service with little or no development and support documentation.

Clearly documentation is required, and the process described below ensures that only the right level of detail with the sufficient number of document deliverables is required—no more, no less. This is where a program documentation architect will be the most valuable member of the core team during this document definition activity.

Steps to Prepare the Program Document Deliverables

Each document deliverable should be unique, and therefore, not overlap or duplicate information with another documents. Each deliverable should also be complete, i.e., missing no content. If this activity has been successfully completed, then the document deliverable set will be exactly as required (no more and no less) to fulfill the program's vision and objectives while ensuring the minimum effort to update and maintain the document deliverables. This requires specialist skills from the documentation architect supported by the program manager and the PMO team.

Below is a six-step process that describes how to progress the documentation plan in conjunction with the PWBS and then finally to the program schedule.

- The first two steps will have been completed as part of the program initiation phase as part of the work to complete the program charter and to develop the program information taxonomy used to set up and configure the program infrastructure, including the PMIS. Completing steps three to six requires active involvement of the document architect, program manager and/or PMO as the facilitators and to document key stakeholders (owner, author[s] and reviewers).
- Before step three is started, the PMO/facilitator should to explain the process, including the rules to determine if the content should be in one deliverable or moved and incorporated into another document deliverable.

Step 1: Document All the Mandatory Document Deliverables and Program Specific Deliverables

The first iteration of this step will start in the program initiation phase. If a PWBS exists at this stage in the program, use it as the basis to determine the program document deliverables, i.e., document names and as many of the deliverable key attributes as possible. If the PWBS has not been prepared, then prepare the PWBS and documentation plan together.

Step 2: Create the Table of Contents for Each Document Deliverable

For each deliverable, the document author(s), if known, will be given a document template provided from PMO. Depending on the deliverable, the author(s) may either tailor the template for the program by checking if an existing predefined table of contents (TOC) is relevant or if the

deliverable is unique to the program to then create the TOC down to three levels (chapter, section, and subsection), outlining the proposed content. If the document authors are not assigned at this point, then the program core team will assign the documents deliverables to the most appropriate core team resource.

Step 3: Ensure There Are No Overlaps between Document Deliverables and Gaps within the Document Deliverables

This process is the most difficult and time consuming and requires active involvement of the program document architect and the program manager as a minimum from the core team and the all of the document deliverable authors. Many discussions will be held as to if content is required, and if so, which document is the best place for the content. From the author's experience this step could take up to four weeks of intensive workshops and discussions. Figure 18.24 provides guidance to determine the most appropriate placement for document content.

Referring to Figure 18.24, each deliverable should be discussed as to the purpose and audience to ensure that it is required. Some of the document deliverables will be mandatory, such as those that are part of the program methodology. The program-specific document deliverables will not have predefined content, and they should use the appropriate program

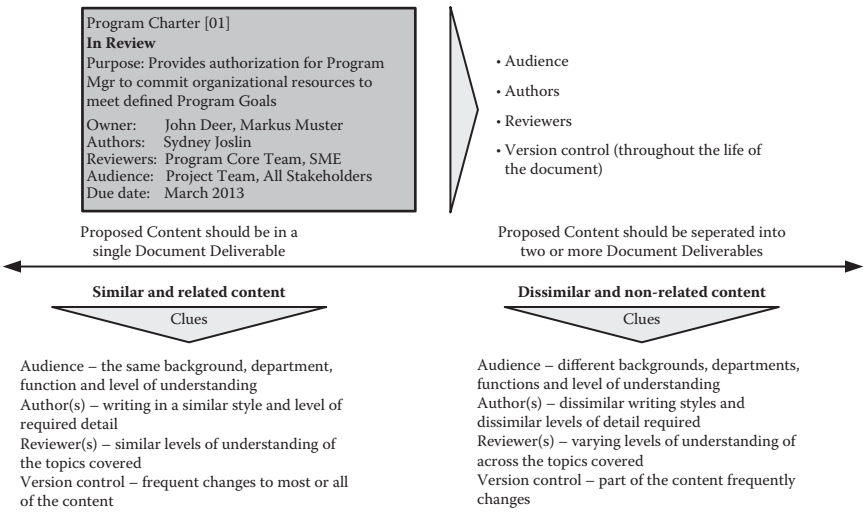


FIGURE 18.24
Use of document attributes to focus the content level for its intended audience.

templates and quality assurance process during the definition and formulation of the content, including version control and content walk through procedures. In preparing a custom set of document deliverables, the document authors will be supported by a core team consisting of the program document architect, PMO director, and/or the program manager, who should attend all the document reviews to ensure the required objective of all documents are met. The decision as to the amount of content duplication between document deliverables is ultimately made by the program manager with a recommendation from the program document architect. This process typically will take between five to 20 days of effort to complete depending on the complexity of the program and the experience of the core team.

Step 4: Create a Documentation Plan Diagram

At this point in the process, the document plan is unlikely to change if Step 3 has been properly completed. A visual of the document plan with all the document icons and their key attributes should be created, which will probably require a large paper format. The use of color (green, yellow, and red) can also be used to show a one-stop view of the program documentation status per deliverable.

Step 5: Complete the PWBS

The PWBS now should have been created to the level of program and component deliverables and should include the program packages and on projects the work packages. These are then assigned to individuals or organizations to determine the activities required to complete the document deliverables.

Step 6: Create the Program Schedule

The final step is to create the program schedule using a number of inputs, including the PWBS and document plan.

Empowering Your Program and Component Teams

Before the PCC is implemented, the program and project teams need to be empowered not only in giving them tolerances to operate and make

decisions but also to be able to act as mini managers themselves. It is easy to assume being a program manager that the program/project teams understand the details and status of the program/project schedules, and this is sufficient for them to complete their assigned work. But now take the perspective of the members of the program who are not in the program/project management teams. Team members are assigned work packages, and each work package has a series of activities and dependencies with other work package/team members. Program and project schedules will detail the sequencing of the deliverables and work packages but cannot help with the impact of the constantly changing factors on the work packages. As the constantly changing factors start to create issues, risks, etc., this will generate questions and concerns from the team members. If the team members are not empowered through transparency of information, the ability to make decisions, and be proactive, work will stop until management intervention. The impact of continual start-stopping on a program because of the constantly changing factors will erode the chances for the program to succeed unless it is quickly addressed.

For high-performing programs, the issues described above are addressed by empowering the team members to progress their work while providing them a clear picture of the status of the program through both the program/project schedules and the PCC. Using the PCC, the team members are able to drill down to their own areas and raise questions, risks, tasks, etc., in a targeted way so they can get immediate responses without having to wait for the next status or management meeting. With this empowerment, team members are able to get to the facts of the program without having to call a special meeting. Team empowerment leads to a high-performing team.

Low-performing program teams typically have not been "empowered," as shown by Figure 18.25, where they are left to their own devices to try to work together and get things done.

SUMMARY

The theme of the chapter on information structuring methodology tools and techniques for effective program management is about "being prepared." If the up-front thinking is done using lessons learned, best practices, and good preparation, the program PMIS tools can be configured and structured to exactly match its deliverables and the internal and

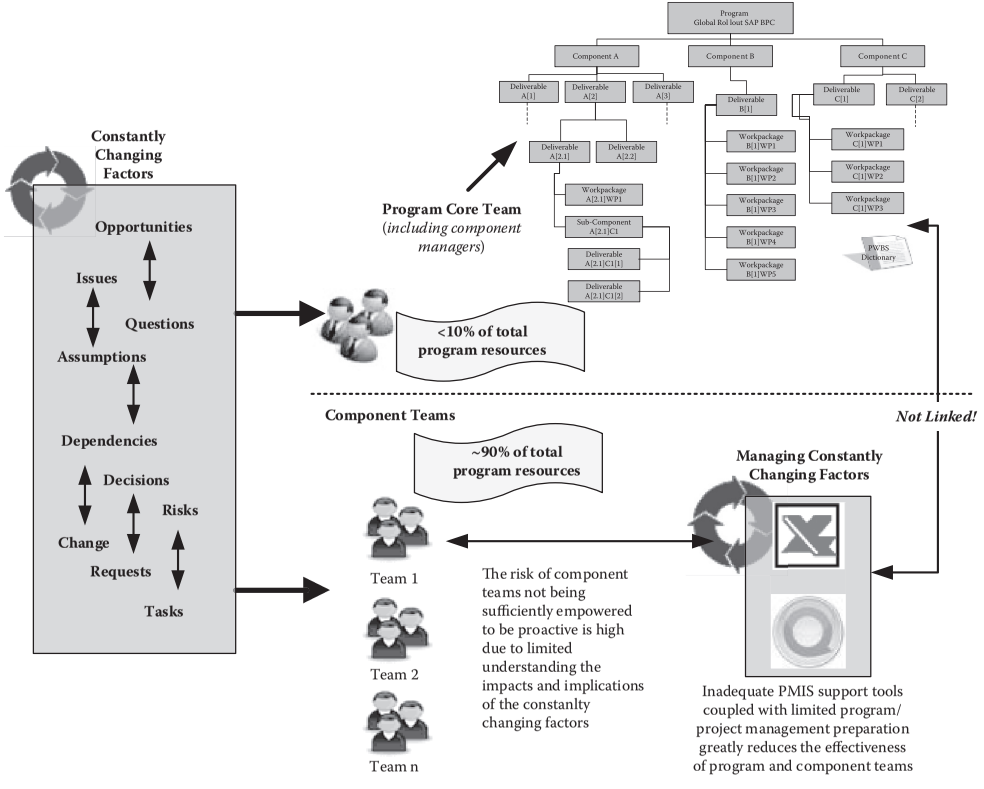


FIGURE 18.25
Risk of program/component teams "not empowered."

external constantly changing factors that will impact them. If it is done properly, then it almost does not matter whatever type of the changes the program will face and how the program management core team will be able to manage these changes effectively and while continuing proceeding with the program.

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The Influence of Consortiums in Developing and Developed Countries

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INTRODUCTION

Technology continues to evolve especially since the turn of the 20th century. World War II provided a kick-start in technology development especially as the need to develop arms provided the impetus. Since the war, technology development has been led by entrepreneurial firms such as Boeing, McDonnell-Douglas, IBM, General Electric, and others.

Then with the explosion of development as a result of the Internet with software and hardware developers, technology advancement has taken an even greater step forward. Firms such as Microsoft, Apple, Dell, Hewlett-Packard, IBM, Intel, and Texas Instruments continue to actively develop products for consumers in an effort to gain or maintain that competitive edge within their respective markets.

However new product development is taking greater resources in terms of developmental costs and intellectual capital. Firms are continuing to develop their own technology in-house; they are increasingly relying on partnerships and consortiums to further development. Take for example the National Aeronautics and Space Administration, and the technology that it created as a result of the space race and space exploration, which was the result of a multitude of firms working together to address the challenges of technology advancement to achieve the goal of space exploration. The spin-offs of these collaborative efforts touch the ordinary consumer today. Teflon, microchip processors, plastics, communications through cellular phones, Voice over Internet Profile, advanced fabrics and coating systems, and materials development are just a few of the common items we all have come to appreciate and take for granted.

A consortium is a group of separate businesses or business people joining together and cooperating to complete a program or project, working together to perform a contract for the purposes of engaging in a joint venture (American Heritage Dictionary, 2000). This chapter describes the importance of consortiums and the influence they have on advancing technology, business/economics/management, health/environment, gas/oil exploration and development, construction, education, and purchasing in developed and developing countries throughout the world. This chapter provides an overview of the evolving technology and the countries in which it has benefitted. This chapter provides background on consortiums and their development. Next it touches on the influence of consortiums in both developed and developing countries. Projects and programs provide motivational forces for firms to pool their resources to target where each firm is able to bring expertise to the collective consortium. Finally, the chapter ends with suggested guidelines for both the experienced and novice program and project managers who will be involved in managing in whole or in part of a consortium.

BACKGROUND

In the medieval period, guilds were formed by merchants that grouped together as craftsmen to pool talent and resources. From that business approach, the concept of business clustering was developed and is used in Europe, Australia, New Zealand and United States. A cluster is defined as "geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities" (Porter, 2000, p. 354), which can compete as well as cooperate. In other words, clusters are groups of businesses that co-locate in a region or in close proximity such that they can leverage off each other's businesses. The Spanish tile industry, as studied in Callarisa Fiol, Alcañiz, Tena, and García (2009), is a group of individual firms that is not in competition with each other but supports each other through each of their businesses. There are firms that manufacture tile, businesses that sell tile, businesses that perform construction which use tile, businesses that provide transportation services, etc. Similar to the clustering of companies in Spanish tile manufacturing industry, clustering has occurred in other parts of the world. The New Zealand timber industry (Perry, 2005, 2007), commercial shipbuilding industry, the wood industry in the United States (Aguilar, Bratkovich, Fernholz, Garrard, Grala, Leightley, Martin, and Munn, 2009), Latvia information technology and forest industries (Liela, Zeibote, and Stale, 2010), the carpet industry around Dalton, Georgia U.S., the myriad of Silicon Valley companies (Perry, 2005), and the City of London financial services cluster (Pandit, Cook, Beaverstock and Ghauri, 2008) are all examples of successful clustering. In the U.S., the forest products industry has adopted the clustering concept in the southern and northwestern states.

Clustering is an informal arrangement, much like an association. If members no longer want to be associated with the cluster, they can leave at any time. Porter (1998) suggests that clusters affect competition in three manners: by increasing and improving productivity and competitiveness of companies in the region; providing influence, focus, and direction of innovation; and stimulating the formation of new clusters. Within the clusters, there is collective knowledge and information, access to a broader resource base of potential employees, and a reduction of labor costs (Porter, 2000).

Clustering offers several advantages to those firms that participate such as lower recruitment costs, lower costs associated with production, knowledge improvement based on closer interaction of firms, firms leveraging products and services of participants, continuous process improvement, higher wages for employees because of competition for skilled workers, employment opportunities enhancement, and closer cooperation among companies, and with economic growth the local tax base is increased (Aguilar et al., 2009), and the role of E-commerce also increases (MacGregor and Vrazalic, 2006). From a U.S. perspective this can be thought of as a consortium of companies that come together to form an umbrella firm for the purposes of providing a product or service.

As an alternative to business clustering, a more formal business association is the consortium. Businesses form consortiums to pool resources, obtain intellectual capital, reduce risk, and develop technology. Today companies fully realize that no single company has the resources and talent to take on complex programs and projects. Also, some governments have levied requirements on companies that compete for government contracts that a certain percentage of the work has to be dedicated to small and disadvantaged businesses. There are companies that develop niche markets based on their expertise. Even universities and libraries form consortiums. Universities form consortiums for purposes of research. One such initiative involves 10 African universities and in cooperation with three major American universities in biodiversity-based medicines and nutritional products in Africa (Field, 2006).

Consortiums are able to take on issues, develop technology, and advance knowledge without any single firm having to shoulder the entire responsibility. The review of literature on consortiums showed the focus has been mostly on the construction industry in Taiwan, Hong Kong, China and Great Britain. The literature also seemed to address partnerships and factors of success (Bayliss, Cheung, Suen, and Wong, 2004; Beach, Webster, and Campbell, 2005; Lu and Yan, 2007; Cheng, Li, Love, and Irani, 2004; Chen and Chen, 2007).

The non-academic literature possesses numerous articles and business announcements that contain information on consortiums whether they are business oriented, not-for-profit, or academic related. Business consortiums have gained popularity since the mid-1960s, although they were used previously such as with construction companies who formed a consortium, for example, to build the Hoover Dam. There are consortiums formed that address technology development, pooling of financial risk,

applied research, and pooling of intellectual capital to study issues and provide recommendations. Examples of technology advancement can be seen in a consortium of investors who focused on developing a carbon dioxide replacement for hydrofluorocarbons used in air conditioning and refrigeration units. The Seacom consortium is expanding the internet in the sub-Sahara region. Parsons Brinkenhoff is leading a consortium to determine the feasibility of harnessing the 14 meter tidal range power of the Severn Estuary that spans from Lavernock Point to Brean Down across the Bristol Channel in the UK. Similarly, a consortium of Florida universities is working on a program to tap the energy of ocean currents. There are consortiums that are focusing research effort on developing gas-to-liquids technology for jet fuel in aviation engines. BASF, for example, is leading a consortium in developing the technology for a fuel cell system for commercial aircraft emergency back-up power.

The health care sector provides fertile ground for pooling of resources. One example is the HyperImage consortium that is developing new scanning machines to detect cancer and cardiovascular diseases earlier. A consortium of six Michigan health care providers are collaborating to bring emerging technology to cancer victims. Commercial manufacturing businesses employ the consortium concept to pool resources, such as the Transportation Equipment Purchasing Consortium where pooling of requirements creates economies of scale so that the costs of raw material and parts along with services are purchased at a reduced cost that no single firm could obtain on its own. Similarly, the High Performance Consortium of Victoria, Australia, in the manufacture of buses, has helped reduce waste and reduce the weight of buses thus saving fuel costs. Twelve utility companies from the United States and Australia formed a consortium with a major electrical/electronics manufacturer, ABB, to develop advanced supervisory control systems for their networks.

Today firms form partnerships through consortiums for major business projects and programs. The group of companies that are developing the F-22 Fighter and Litoral Combat Warship are two examples. The benefits of consortiums can be enormous. Companies form consortiums based on the task and goals of the project or program for several reasons: risk management, financial resourcing, intellectual capital pooling, product development, research, and competitive marketing to list a few. The European community of four countries established a consortium to compete with the U.S. dominated commercial aircraft industry, called Airbus Industries (Carbaugh, 1993) recognizing the importance of pooling

resources, financial and intellectual, to develop technology and provide jobs for a regional workforce. The Semiconductor Test Consortium, led by the major chip manufacturer, Intel, in the U.S., was formed in an effort to standardize the architecture of products into an open architecture configuration (Katz and Edenfeld, 2005). Similarly, SEMATECH, a semiconductor manufacturing technology consortium of U.S. companies was established in 1987, for the purposes of improving semiconductor manufacturing process technology (Link, Teece, and Finan, 1996) and started with 14 member firms and now has 17 member firms. Their research is focused on technological infrastructure, as opposed to individual company needs, through the pooling of intellectual capital of participating firms. The European community established a research and development (R&D) consortium called EUREKA, which was started in 1985, in response to the U.S. Star Wars initiative (Mothe and Quelin, 1999). Here again, member firms efforts are toward reducing R&D costs through collaboration, reducing duplication of investment through individual efforts, and spreading risks across a broader array of research activities. Tangible and intangible results are suggested by Mothe and Quelin (1999) through R&D consortia, which can be summarized by partners' business policies that mesh to favor resource formation, develop improved internal capabilities, and foster leadership involvement as a key contributor to resource creation. At the Kennedy Space Center, a consortium established to evaluate benchmarking findings was on par with previous studies in that costs were reduced collectively as opposed to if the work was accomplished individually, companies learned from each other, and benefited from the value of team work and continuous improvement (DeVito and Morrison, 2000).

Teaming agreements and business partnerships are tools that firms use to establish formal relationships such as consortiums. A review of the extant literature concerning partnering primarily focuses on the construction industry. Mohr and Spekman (1994) describe partnerships as a "strategic relationship between firms who share compatible goals, strive for mutual benefit, and acknowledge a high level of mutual interdependence" and suggest that firms join efforts "to achieve goals that each firm, acting alone, could not attain easily" (p. 135). Lu and Yan (2007) suggest the primary factors for partnering include: job profit for both contractors and subcontractors, quality and on time completion. Powell (1987) suggests that firms form partnerships to gain access to new technologies or markets, expand their ability to provide a wider range of products and

services, access knowledge that the individual firm does not possess, gain access to skills that would complement their own, and share risks.

Other factors for partnering span the complexity of the project or program; corporate and business levels: reduction in risks, costs, and rework; enhanced profits; expansion of market share; improved bidding position; improved competitive position; improved labor productivity; and continual improvement in products and services (Cheng, Li, Love, and Irani, 2004).

CONSORTIUMS AND THEIR INFLUENCE

A search of the literature over the last ten years, 2002 through 2011, using the key words *manufacturing* and *consortiums* revealed 78 occurrences of consortium influence in the areas of technology, business/economics/management, health/environment, gas and oil, construction, education, and purchasing.

Figure 19.1 depicts the number of occurrences in each of the areas.

Developed and Undeveloped Countries

The benefits realized through consortiums span both developed and undeveloped countries. But first an operational definition of "developed" and "developing" is needed. Three international organizations, the United

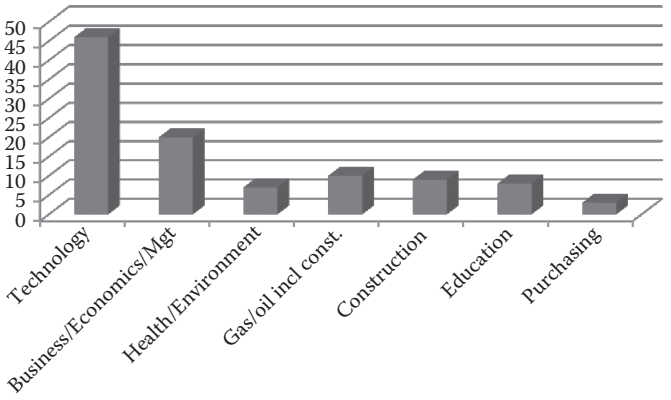


FIGURE 19.1
Number of occurrences of articles.

Nations (UN), International Monetary Fund (IMF), and World Bank all have their own definitions; each is based on their organization's goals (Nielsen, 2011). The UN (UN, 2011) states that it does not have a system established that classifies countries as developed or undeveloped. The UN Development Program, however, uses a blend of the Human Development Index and the Human Development Report. It uses the Gross National Income per capita in terms of U.S. dollars after converting the local currency (Nielsen, 2011). The IMF issues the World Economic Outlook (WEO) within which it explains that it considers three factors when classifying countries in terms of development: per capita income, export diversification, and degree of integration into the global financial system (IMF, 2011). The World Bank uses a system that classifies countries into four income groups: low income, $1,005 or less; lower middle income, $1,006–$3,975; upper middle income, $3,976–$12,275; and high income, $12,276 and greater (World Bank, 2011).

The majority of activities, projects or programs, were focused on developed countries as opposed to undeveloped countries (62 versus 27). In reviewing the consortium activities during this period, ten could be classified as providing benefits to both developed and undeveloped countries. Table 19.1 is a summary of consortium activities that have cross benefits for both developed and undeveloped countries.

Technology

Consortium activities tend to focus on technology advancement. Consortiums are generally composed of commercial entities (businesses and associations), universities, and governments. Examples of technology development include: reduction of energy consumption and greenhouse gases in Norway (Tangen, Hemmingsen, and Nekså, 2011); research and testing of various lead-free material used to manufacture printed boards (Morose, Shina, and Farrell, 2011); wireless communications engineering technologies certification in Japan (Frantz, 2010); development of an open standard specifically designed for process measurement and control applications (Ferrari, Flammini, Marioli, Rinaldi, Sisinni, 2010); seal development to increase gas turbine efficiency (Sporer, Refke, Dratwinski, Dorfman, Metco, Giovannetti, Giannozzo, and Bigi, 2008); technology for the reduction of parts production costs, enhancing the ability to fabricate

TABLE 19.1

Developed/Undeveloped Country Benefits from Consortiums

Consortium (if provided)	Date	Brief Description of the Activity
Abnormal Situation Management Consortium	2010	Study systemic and improve plant operating practices by 12 companies and universities (Bullemer, Laberge, 2010)
Food Safety Research Consortium	2010	Multi-disciplinary collaboration from eight diverse institutions addressing foodborne and zoonotic diseases (Mangen, Batz, Käsbohrer, Hald, Morris, Taylor, Havelaar, 2010)
Worldwide Interoperability for Microwave Access (WiMAX) Forum	2010/2005	Not-for-profit, industry led organization for the adoption, development, and expansion of WiMAX across the globe (Vu, Chan, Andrew, 2010; Ghosh, Wolter, Andrews, Runhua, 2005)
EUREPGAP	2009	Pioneering field level safety protocol for good agricultural practices (Amekawa, 2009)
Unknown	2009	Develop green cars and opportunities for chemical suppliers (Milmo, 2009)
Silico Biology Consortium	2006	Proposal to develop new drugs based on high risk, high reward backed by government and industry funding (Salahuddin, 2006)
Unknown (Consortium of European researchers)	2004	Research into use of plant derived vaccines to treat several diseases (Winder, 2004)
GEM Project Consortium	2004	Academic institutions, software companies, and research and development institutes study manufacturing education issues (Hunt, O'Sullivan, Rolstadas, Horan, Precup, 2004)
Consortium for Advanced Manufacturing-International	2003	Improve planning and budgeting processes (Player, 2003)

more complex and functional parts (Brown, 2008); next generation dipole magnets (Canfer, Ellwood, Baynham, Rondeaux, Baudouy, 2008); and development of car-to-car communications (Kosch and Franz, 2005).

Business/Economics/Management

Technology development is not the only goal of consortiums; advancement of business/economics/management is another area that has benefited. The non-profit consortium of International Engineering Consortium (Zhang and Li, 2011) has been instrumental in developing a model for cellular phone manufacturing. The Forging Defense Manufacturing Consortium (Irani, 2011) has been working to improve lean manufacturing practices for custom forge shops. A consortium of 12 companies and universities, the Abnormal Situation Management Consortium, is studying systemic methods and improving plant operating practices (Bullemer and Laberge, 2010). In the U.S., a consortium of executives representing healthcare providers; products, pharmaceuticals, and supply chain companies; and service businesses are cooperatively working together to improve processes and exchange ideas in an open and non-competitive forum (Orthman, 2008). An example of a government activity becoming involved in a consortium is the Department of Business and Economic Development of the state of Maryland. They established the Maryland World-Class Manufacturing Consortium in which the consortium is helping company management transition to applying lean management principles to their everyday business practices (Engle, 2007). A Japanese-based consortium, consisting of information technology vendors, systems integrators, consulting firms, research institutes, and manufactures, has developed planning and scheduling specifications to resolve problems in manufacturing enterprises (Nishioka, 2004). The High Performance Manufacturing Consortium is helping businesses improve performance through reduction of product rejects, percentage of on-time deliveries, and the amount of unscheduled downtime. The consortium provides tailored practical programs ranging from lean accounting, Lean Six Sigma, value stream mapping, and direct coaching (Light, 2004). Practical problems that are encountered by businesses are being solved through the collaborative effort of similar businesses and academic institutions. As an example, the Consortium on the Next Generation Factory Layout is one that develops alternative layouts, new performance metrics, and new methods for designing

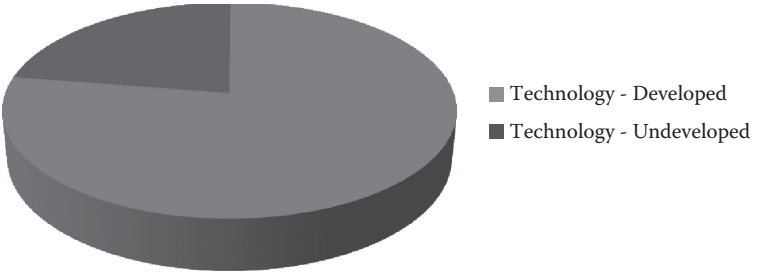


FIGURE 19.2
Share of technology contribution to developed and undeveloped countries.

flexible and reconfigurable factories (Benjaafar, Hegaru and Irani, 2002) Knowledge management is recognized as being an important element in business. The concept of process knowledge sharing is being advanced by a consortium of automotive, defense, and office machines firms within the Center for Innovation in Product Development (Bell, Giordano, and Putz, 2002). The Consortium for Advanced Manufacturing-International (Knowledge Management Special Interest Group) has developed a model for firms, thus improving business practices (Malone, 2002). The Center for Innovation in Product Development at the Massachusetts Institute of Technology, a consortium of automotive, defense, and office machines companies, has studied process knowledge sharing whether inter-firm or intra-firm (Bell, Giordano and Putz, 2002). Here the goal was to design the texts in which knowledge sharing could be practically implemented. Firms tend to be "close-hold" with their proprietary knowledge being afraid of competitors gaining an advantage. Training was a particular area that firms have felt comfortable in sharing knowledge. Figure 19.2 depicts the share of technology that contributes to developed countries and undeveloped countries.

Health and Environment

Health and environment is another category of projects and programs that consortiums pool resources where they can generally benefit both developed and undeveloped countries. Figure 19.3 shows this depiction.

Although the number of consortiums involved in health and environment is not at the level of technology development, they are no less important. The Food Safety Research Consortium is a group of multidisciplinary researchers from eight institutions whose aim is to improve

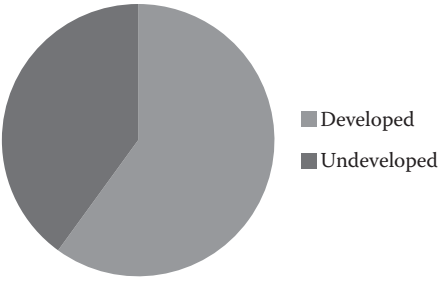


FIGURE 19.3
Consortiums and health and environment influence in developed and undeveloped countries.

public health by making food safety decision making and priority setting more science-based, risk-informed, and driven by data analysis. The work that they accomplish benefits both developed and undeveloped countries (Mangen et al., 2010). The EUREPGAP consortium, stated in 1997, was the result of an initiative by a group of European retailers to pioneer food safety protocols through good agricultural practices (Amekawa, 2009). Here again, the EUREPGAP consortium, in partnership with agricultural producers and retail customers, is producing benefits for both developed and undeveloped countries. The healthcare arena is particularly interesting in that governments, physicians, and device providers are teaming to look at issues such as healthcare priorities, cost-containment, quality, and technology. The Strategic Marketplace Initiative consortium is a collaboration of executives representing healthcare providers; medical products, pharmaceuticals, and supply chain distribution companies; and service businesses that are pooling their resources to establish and promote the adoption of new standards of supply chain performance for delivering healthcare to patients with a tool they developed (Orthman, 2008). The Scottish Medicines and Positron Emission Mammography Consortiums contribute benefits through programs and projects through analysis of new drugs and development of new methods for detecting breast cancer. Both consortiums because of the nature of their work employ program and project methodologies. Winder (2004) reported on a consortium of European researchers who were investigating the use of plant-derived vaccines in the treatment of diseases in undeveloped countries.

With respect to the environment, the Global International Council of Chemical Associations Amine Oxides Consortium works with a wide range of global organizations such as the UN's Environment Programme, the UN Institute for Training and Research, and Organization for Economic Co-operation and Development, and other intergovernmental and non-governmental organizations to strengthen and improve chemical management and achieve the objective of sustainable development (Sanderson, Tibazarwa, Greggs, Versteeg, Kasai, Stanton, and Sedlak, 2009).

Gas and Oil and Associated Construction

Gas and oil exploration in undeveloped countries are pursued by consortiums made up of international oil companies, financiers, and in some cases, construction companies. Third-world countries, such as Chad, Sudan, Mozambique, Guinea, Ghana, Tanzania, Morocco, Kazakhstan, Libya, and China, have all been the recipients of consortium exploration and development of oil and gas reserves. The consortiums that engage in oil and gas collectively share the risks as well as the profits that are obtained. Their experience and expertise enable the host countries to produce those commodities that further national development within the countries. Consortiums bring technology and expertise that the local countries do not indigently possess. Coupled with the gas and oil exploration is the construction of pipelines and refining facilities to process the finished product and be able to deliver it to a site where it is exported. Roads, housing projects for workers, electrical supply, communications networks, shipping terminals, and harbor development and improvements are just of few of the benefits that result from consortium involvement in oil and gas exploration. Many of these efforts are managed as programs based on exploration, infrastructure development, and subsequent management of the operations. In Sudan, countries such as China and India are pursuing long-term involvement, and therefore, the many projects that it will take to bring the oil production to fruition are more programmatic in nature. However, in the case of the Tanzania crude oil refinery and oil pipeline, as well as the Kazakhstan oil field development, both are being managed as megaprojects. Generally the host countries eventually take over the operation of the production facilities, but this transition will occur after many years of training and operating experience are gained.

Construction

Major construction efforts can be either managed as projects (megaprojects) or programs and typically offer an ideal environment for a consortium. Multiple companies can team up, each bringing to the consortium unique and varied expertise. The Panama Canal Expansion program is being performed by an international consortium (Grupo Unidos por el Canal) comprised of Spanish, Italian, Belgium, and Panamanian firms where the main project is the design and construction of the third set of locks, the main project of the canal expansion program. The canal expansion program is estimated to cost over $4.2B, of which the design and construction of the third set of locks is valued at over $3.1B. The entire program consists of nine separate projects (Canal de Panamà, 2011).

Major construction such as power plants also provides the motivation for firms to combine efforts and resources. AES Corporation took the lead of a consortium to build two independent power plants in South Africa. In Mozambique, a consortium of Mozambican investors, along with the South Africa Industrial Development Corporation, financed the construction of a new handling facility for the export of fresh agricultural produce.

Education

Education and training provides yet other opportunities for firms to come together to form consortiums. Academia and commercial firms will partner for a variety of reasons. The Mobile Computing Promotion Consortium offers wireless communications certifications in Japan (Frantz, 2010). The UK automotive industry recognized the need to raise the awareness of to train and recruit technicians of the future through ensuring the currency of lecturer's skills.

The Global Education in Manufacturing project consortium is a group of academic institutions, software companies, and research and development institutions who are developing curricula that will meet the needs of manufacturing organizations in the future (Hunt, O'Sullivan, Rolstadas, Horan, and Precup, 2004). In France, a group of design centers and manufacturing plants have teamed to build a research center specializing in telecom security.

The Semiconductor Research Corporation, a non-profit consortium of semiconductor manufacturers', aim is to improve the curricula for

engineers based on the unparalleled challenges within the semiconductor industry (Cavin, Pradip, Joyner, and Wiggins, 2003). Business methods and education are combined in the work of the Consortium for Advanced Manufacturing-International in which it has developed a capacity model for managers to visualize and evaluate capacity in their operations (Muras and Rodriquez, 2003). All of these consortiums share the fact that multiple groups of people can get together to collectively solve issues and advance the development of a particular area of interest.

Purchasing/Procurement

One would not normally think of a consortium and purchasing. Group purchasing leverages the collective bargaining power of several organizations in order to get the best price. Using a centralized procurement concept, the benefits can be realized through lower prices, high quality, reduced workload, reduced risks, lower transaction costs, and learning from experience with others in the group (Walker, Essig, Schotanus, and Kivistö, 2007).

Purchasing groups have a great deal of influence through volume buying. Take for example a movement in England, France, Germany, and Italy toward purchasing groups or consortiums (Sorenson and Kanavos, 2011). Another example can be seen in France where the Exeltium Consortium is leveraging the collective influence of seven chemical and pharmaceutical companies through volume buying to secure a stable and inexpensive energy supply for 15 years (Murphy, 2006). Therefore, purchasing/procurement consortiums tend to be more developed country oriented.

Project and Program Management

The Project Management Institute (PMI®) (PMI®, 2008a) defines a project as "a temporary endeavor undertaken to create a unique product, service, or result" (p. 5). Furthermore PMI® (PMI®, 2008b) defines a program as "a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside of the scope of the discrete projects in the program" (p. 5). With these definitions in mind, consortiums undertake projects, programs, or both depending on their goals. In each of the categories above, the consortiums either used project management, program management, or a combination of both to accomplish the

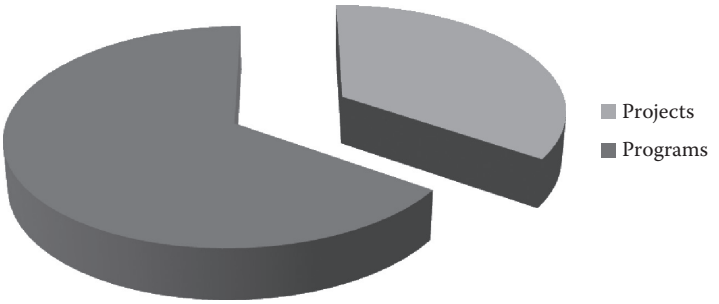


FIGURE 19.4
Project management versus program management.

goals and tasks. Figure 19.4 shows the relative magnitude of projects to programs as presented in this chapter. The consortiums that were clearly long-standing in the goals they were pursuing could be seen as employing program management. Healthcare, education and business/economics/management tended to be managed in this manner. Other activities that had a clear start and finish such as construction and oil and gas were managed more as projects.

However, under the category of technology development, both management systems are used. Figure 19.5 shows the seven categories of consortiums discussed in this chapter and the management systems each used.

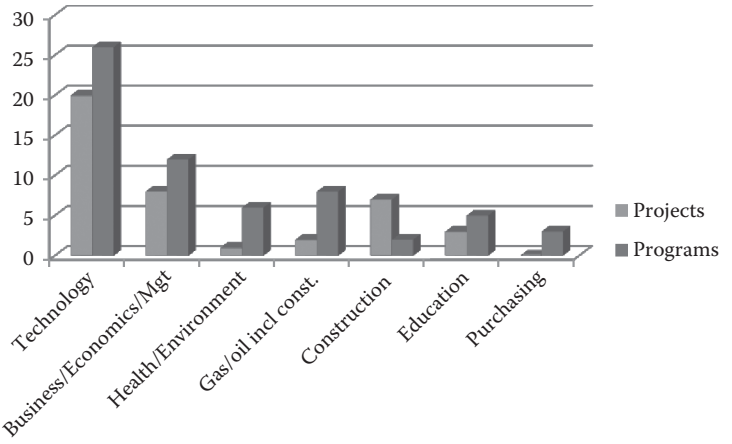


FIGURE 19.5
Relative magnitude of projects to programs within the consortium categories.

PROJECTS VERSUS PROGRAMS

When should a task or multiple tasks be managed as a project or program? PMI's® definition of these terms clearly makes the distinction between the two. When deciding which to use, management needs to consider the impact of the assignments. Some assignments can be clearly separated and do not influence the next assignment. In other words, the task can be accomplished in a transactional manner. However, when the individual tasks build upon each other and contribute to a larger benefit, then a program is the more appropriate management method.

For example, consider the advantages of a program as opposed to a project. The program is comprised of multiple projects that are coordinated in a manner such that they provide specific benefits to the customer. Each project might make up a portion of the overall benefits that are to be delivered. In addition, the accomplishment of each of the projects most likely will be either a precursor or successor of other projects. An example can be seen in the oil and gas industry. Here exploration and drilling can be one project, construction of piping and refining facilities another, and yet another the start-up and physical operation of the overall complex and subsequent turn-over to the host country. A program of this nature will be of extended duration with the potential benefits being development of infrastructure in terms of roads, utilities, and the refinery itself; training of local resources in construction and drilling techniques; developing avenues of education for the indigenous population; and contributing to the expansion of the local economy to list a few.

SUGGESTED GUIDELINES FOR SETTING UP AND MANAGING A CONSORTIUM

Once the decision has been made by senior management to form a consortium to bid on and execute a competitive procurement, there are some considerations, guidelines for teaming agreements, and guidelines for identifying potential team members that need to be factored in the planning. In addition, once the consortium has been formed, the success of the consortium will require the program manager's close involvement. "Key ingredients" for a successful consortium are provided as well as guidelines

for the program manager who is managing the consortium. The points provided are not all inclusive and are based on the author's experience. Each company will have its own policies and procedures for program managers. The points below offer the program manager suggested ideas to consider and implement, especially for the novice program manager.

- Considerations when forming a consortium.
  - Work content of the project or program
  - Team member strengths and weaknesses
  - Impact of the team member company cost on overall price
  - Competitive posture (need to take the competitor "off the street")
  - Team member reputation and expertise
  - Team member relationships based on past experiences, such as in terms of working with the firm as a whole or with working with key leadership of that firm in the past.
- Guidelines for teaming agreements.
  - Discussion of work sharing should be as non-specific as possible. An exception would be when a team member has an incumbent position to protect either in part or total.
  - Use firm developed templates whenever possible (facilitates review and passage through "risk" gates). Rely on the subcontracts staff for counsel.
  - Strive for exclusivity wherever possible and only use non-exclusive when the team member requires it. Occasionally, a perspective team member will refuse to sign an exclusive agreement thus allowing that firm the option to potentially shift alliances to a competitive consortium if it feels the initial consortium excessively limits that firm's overall business strategy. The disadvantage for the firm not being exclusive is that key proposal information may not be shared with them.
  - Be specific on requirements for proposal input, costing, non-disclosure, etc., particularly in non-exclusive situations.
- Guidelines for identifying potential team members.
  - Assess the deliverables of the contract and determine the requirements in terms of the personnel and resources needed to fulfill those requirements.
  - Assess each firm and its capabilities. Determine which firm could best satisfy specific resource and intellectual property requirements. Consider the firm's reputation, presence, and relationships.

  - Examine the budget for the program or project. Evaluate the potential partners' labor rates. Determine if those rates, when combined with the other consortium rates, are able to meet budget restrictions. Some firms may try to bid low and then make up profit by change orders (firm-fixed price unique situation). This is a dangerous business methodology especially if the client does not approve additional work.
  - Examine the potential partner's reputation for quality, excellence, ability to meet schedule and cost, as well as the business ethics the partner embraces. It is also important to determine the potential partner's history in providing products and services to the client. If they are well liked by the client that can be an advantage that can be leveraged.
  - Assess the ability of the potential partner to technically perform through knowledge of reputation of the firm, discussion with other partners, and investigation of the company's past performance in projects and programs.
  - Formally complete the teaming agreement with a documented and signed agreement with the team members.
- Methods to manage a consortium to make it successful.
  - Strive for open and honest communications between the firms. Sharing of information especially on client perceptions of the consortium can provide a means to make managerial adjustments to team resources and make restitution to issues demonstrates a concern for the client.
  - Regularly meet with consortium partners to discuss issues, evaluate progress, and recognize successes. This should be viewed as a "lessons learned" opportunity. Clients that observe consortium firms working together to solve problems view the consortium in a more positive light.
  - Avoid playing favoritism among the consortium members. Depending upon the program or project, one or more of the firms will clearly have the capability to perform multiple tasks. If the work is such that it can be parceled out to multiple firms, then it will demonstrate that more than one firm can contribute to the success of the consortium as well as be a "back-up" to other firms if capacity issues are a concern.
  - Establish a communications protocol so that the consortium "speaks" with one voice. It can become confusing to the client

if multiple firms within a consortium try to provide input especially when it may be contrary to the goals of the consortium as a whole.
    - Each firm needs to strive to build trust among the member firms at all levels. Commitments made must be kept. If they cannot, then honest communications with the consortium should be first and foremost where collectively issues can be resolved.
    - Take the client's problems as your own and work to solve the client's problems.
- "Key ingredients" for a successful consortium.
    - Ability to work together. Separate "agendas" by the consortium firms will conflict and will become noticeable to other stakeholders and clients.
    - Senior management involvement in the activities assigned to consortium member firms, which can be in terms of human resources aspects of "taking care of its people" to avoid in-fighting among members. Working together as a cohesive team leverages the best of each of its team members. The goal is for the client to have no ability to identify staff to a particular team member firm but just to the consortium.
    - Be able to deliver products and services that meet the requirements of the client. The client will measure the success of the consortium by the deliverables received.
    - Solve the client's problems. If the consortium is unable to do so, the client will become frustrated and ultimately turn to other avenues where it can get its problems solved. In addition, the client is not looking for additional problems. Problems the consortium encounters should be presented to the client with cost-effective solutions/options where the client is then able to make sound choices.
    - Work together as a team. A consortium is a team where each member is able to contribute to the collective tasks assigned.
- Guidelines for a "program manager" of a consortium.
    - Work with the leadership of the separate firms. Be honest when addressing issues.
    - Avoid pointing fingers. Admit to weaknesses but look to bridging the gaps.

- Keep the team informed. Communications and the sharing of information cannot be overstressed.
- Communicate with the client routinely and communicate with all stakeholders. Try to understand their interests and concerns.
- Recognize outstanding performance. Each firm wants to demonstrate that it is capable of performing the tasks assigned. Recognize individuals who do a good job. This recognition should be across all of the member firms.
- Admit weaknesses when they are identified. Bad news does not get better with age. Take positive action to make corrections. Involve the project managers in developing corrective action plans. Keep stakeholders informed of progress.
- Conduct periodic reviews of progress. Work with the individual project managers to the extent that each project manager requires. Provide the individual project managers with the resources and authority to perform their jobs.
- Maintain a high standard of business ethics. It not only affects the program manager but also the program. Businesses discuss among themselves the ethics they observe in other business operations.
- Closely monitor benefits delivery. Be prepared to advise the client if adjustments are necessary. Clients may or may not have a general concept of their requirements. Sometimes they have difficulty articulating what their problems are or may not be able to identify the root causes for them. The program manager that works closely with the client to sort out these issues and provide suggested solutions as options will gain respect and support by the client.
- Provide support to the project managers. Their experience will vary as do the projects they will be charged with executing. Mentorship is critical. Take the time, even though the program manager is busy, to talk with the project managers to not only assess their project progress but also their own well-being.

- Instill a constant awareness across the consortium that all business is conducted in the context of the following rules regarding the client.
  - Always tell them the truth, good news or bad.
  - Make the client a party to the solution; and
  - Never surprise the client.

SUMMARY

Businesses, institutions, and government entities are collaborating more extensively through the use of consortiums in today's business environment to accomplish myriad activities from technology development to construction to education to health and beyond. Furthermore, consortiums offer the collective firms the opportunity to share risks; share resources in terms of knowledge, personnel, and experience; and share lessons learned.

Because of the growing complexity of issues, albeit global or centric, firms have to rely on the strengths of partners because most firms do not have the necessary breadth and depth to cover multiple business opportunities concurrently.

This author is familiar with U.S. Government and specifically the Department of Defense activities contract solicitations, which are orientated toward service delivery. These contracts encompass multiple projects and are managed as programs requiring the awardees to demonstrate an extensive array of capabilities and a high level of experience. Because of the competitive nature of the market, firms tend to specialize in niche areas such as consulting services, cyber, information technology, and security, with others focusing on product development. It is therefore important for firms to collaborate through a formal teaming arrangement as a consortium to collectively bring the best and brightest resources together to accomplish the product and/or service delivery.

Because of the diverse nature of worldwide business and institutional opportunities as projects or programs, the consortium is becoming the go-to cooperative and contractual arrangement to take on those opportunities. Although most consortiums are profit seeking, there are those consortiums that pursue issues for the benefit of the perspective recipient and are not seeking financial return. The potential offered by consortiums to solve issues that individual firms and institutions could not possibly consider that is due to limited capacity or capability makes the consortium the preferred choice.

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20

The Increasing Importance of Social and Business Media in Program Management

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INTRODUCTION

To give a quick background of social and business networking, there are more than 400 social media type websites with the big three being Facebook, LinkedIn, and Twitter. Though the original intent for the majority of these sites (aside from making money from advertising and paid subscriptions) is keeping family and friends updated on what is new in one's life or with some purposeful intent of meeting one's next significant other, having a networking presence is comparable to having a cell phone, a modern necessity. However, more social sites are now morphing into more business advertising and a way of a person or business communicating to a wide audience other than the standard practice of using emails, which are often spammed and deleted. This trend in networking is continuously evolving.

There are often stories about misuse of these websites, such as posting derogatory information about one's boss or company, which subsequently resulted in the person being fired. Other actions that are even worse involve making defamatory and bullying statements, which results in lawsuits or even suicide attempts because of the embarrassment. Other uses are a new method for people to gain personal information for scams. Another is a legalized method of selling 'adult services'. These examples show it is impossible to control people who may be on these sites, but the key is to recognize how to spot them and avoid them, and in some cases, legally tolerate their presence. Additional information on avoiding such scams will be covered later in this chapter. The objective is to use these sites to ensure a predictive, positive outcome through investing one's time in business networking.

It is important to note that there are two basic type of networking: 'Social' and 'Business'. Social Networking is the non-work side of one's life consisting of family, friends, and interests that is not directly part of one's job or career focus. This social aspect is not the focus of this chapter. The chapter focuses instead on Business Networking.

As an example, I do have LinkedIn (www.LinkedIn.com) and Twitter accounts. However, I only *tweet* when doing an update on LinkedIn (see note one at the end of this chapter). If you are not one of the roughly 150 million people that does not have a LinkedIn Account, then perhaps upon completing of reading this chapter, you will create one for yourself. It is free and only involves an investment of your time. *Investment of your*

time is the key message as time is valuable, and at times it seems there is never enough of it. The objective of this chapter is to recognize the benefits and value of business networking. Of course business networking is a personal choice, but this chapter will point out some guidelines to consider and the time requirements to be successful in business networking. This chapter also will explain the importance of business networking.

Before going further, I always believe that one should, 'practice what they preach'; therefore, let me give you a brief history of my business networking experience.

In March, 2007, I was approached by Project Management Institute (PMI®) to be a pilot participant for the new Program Management Professional (PgMP®) credential. For those not familiar with the application requirements, it consists of documenting sufficient program and project management experience and finding a person(s) that can validate that experience if selected for an audit, passing a review of your experience statements by a panel of PgMP®s, and assuming you successfully complete the application and then pass a rigorous exam also finding at least 12 people who fill out a comprehensive survey as to your overall program management experience, known as the Multi-Rater Assessment (MRA) (see note two at the end of this chapter).

Fortunately at that time a co-worker suggested 'LinkedIn' (www.LinkedIn.com) as a means for finding past Intel colleagues I needed for the audit and MRA. I joined LinkedIn, and it did help me find two people. After I passed the PgMP®, I found I received a few LinkedIn connection requests each week and did continue to find a few more colleagues and other program and project managers in Arizona.

Keep in mind that at the time in late 2007, there was the start of turbidity in the economy. I was aware of friends and colleagues that had recently lost their jobs and recalled them stating they did not even have an updated current resume, let alone a solid base of business contacts or connections to start a job search. My perception was that these were smart and experienced people that I respected. I found it surprising given how astute they were that they had ignored the possibility of suddenly losing their jobs and had no real back up plan in place such as a resume, business contacts, or a network should that happen.

Being employed with Intel nearly 30 years at the time and having fortunately survived several economic downturns and having not lost my job, however, as a professional program/project manager, I realized as well that I also had no 'starting point' should I find myself in a similar situation for which I was silently criticizing others.

I quickly came to the realization that if nothing else for my own peace of mind I needed to put my own 'If I Lost My Job Today—Risk Mitigation Plan' in place, and LinkedIn would be the perfect tool to use. Again thinking as a program manager, I determined my scope would be to assume that LinkedIn had been around forever, and I started using it when I joined the US Navy back in 1976, and more importantly, when I became an Intel employee in 1980. I began dedicating between two to four hours per week to this process. I started sending connection requests to my current colleagues and searched through old email archives and distribution lists for others. I developed an Excel spreadsheet of names, which I would search on LinkedIn and did fairly well finding them at other companies. Over the following six months I had acquired over 300 connections and was pleased with my progress.

Learning more about business networking and LinkedIn features, I joined as many groups as I could and tried to actively participate in making comments to discussion posts and answering questions. In October, at the 2007 PMI® Conference in Atlanta, Georgia, I was honored as one of the 31 first PgMP®s and recall having many people asking me about the difficulty associated with attaining the PgMP® and any suggestions I might have for them. Emails and phone calls helped a few, and by end of February 2008, I passed my 500 connection milestone, and in early March decided to start the 'PgMP® Credentialed Networking Group' (see note three). Managing the group provided me the benefits of additional connections, and in October 2008, I had nearly 2,000 connections compared to about 500 from the prior year. I recall at the time I was amazed at the progress and positive changes networking was having. Additionally, in early 2008, I helped a person become a PgMP®. At this time, his wife was pregnant, and I was honored after he obtained his PgMP® that they decided to use Jeffrey as their son's middle name.

Interesting phenomena began to happen for me causing repeatedly small epiphanies as to the benefits of business networking. I was voluntarily helping people or applicants with the PgMP® process. I often was offered monetary compensation up front as many assumed I was a consultant. I

was strictly doing this all as a volunteer, respectfully declined all monetary offers, but instead suggested: "If you feel inclined, give me a recommendation on LinkedIn", and many people wrote recommendations for me. As I made connections with former colleagues I asked the same (again with the premise that I had LinkedIn from the start of my career), and many also did so based on working with me at the time. Additionally as I got more connections I noticed that more people (about eight-12 per day) were asking to connect directly with me. By April 2009, I had over 7,500 connections (quadrupled from 2008) and 300 recommendations. More importantly I was being asked to contribute to articles and books, to speak at project management events, and in October 2010, I humbly received the Distinguished Contribution Award from PMI® in part for my voluntary PgMP® LinkedIn group support. Normally, I am asked a few times each month by email if I am interested in a new position. These are relatively good positions by recruiters on LinkedIn who through doing searches find my profile. I politely decline job offers, but it is nice to be approached for interest in a job, and I have made a number of Recruiter/Headhunter type connections, which is a great and valued resource to have.

This chapter is being written in January 2012, or just over four years since joining LinkedIn. I have more than 29,000 connections and am ranked in mid 50s as most connected on LinkedIn. I have nearly 600 sincere and earnest recommendations on my profile, which means I am the third most recommended person on LinkedIn. I have been fortunate to have helped over 50 people find a position through networking with my contacts and consistently enjoy the benefits of business networking. It also led to my being asked to write this chapter for inclusion in this book. My plan is to allocate the additional effort to answer more questions on the LinkedIn 'Answers' section moving forward. In summary, for me it has been in a word, AWESOME, and I have no regrets for the time and effort I put into building my LinkedIn profile and network. Would I have done fine without it, probably, but I never would have had the many invaluable experiences.

You can look me up and I will welcome any feedback and opinions, but having read this you may be thinking, *'Hey good for Jeff but what about me?* The good news is that the rest of this chapter is focused on helping you successfully prepare and/or enhance your business network. It is now time to start!

PHILOSOPHY

First, to take networking seriously, one needs to start with the premise of actively wanting to engage with others. Over the last four years I have gained tremendous value through networking from opportunities and awareness. However what works for me may not work for you. It is a personal choice that each individual has to make. Second, decide your connection strategy with LinkedIn.

There seems to be three major thoughts, and I will refer to others but use Guppy, Tuna, and Whale for my analogies in the first person:

Guppy: I am going to be very controlling of my network. I will only invite and accept connections of people I really know well including getting and giving recommendations. I believe a small network of close and trusted associations is most valued. In networking philosophy you are considered a Turtle, which means it is hard to break through your shell, and you are slow (with respect to network growth), and the depth of your network is small as a guiding principle.

Tuna: I am going to be controlled by my network and invite and accept connections from limited sources such as my company, club, or a particular LinkedIn subject interest group and sub-group that I joined. I believe a network of close and trusted associations is valued, and I am willing to add new people and grow my network based on certain criteria. In networking philosophy this approach means one is considered a Hound Dog, where emphasis is placed on checking out new connections. However, you believe both the size and depth of your network are valuable.

Whale: I am not controlling and will have a totally open network. In networking philosophy you are considered a LION (LinkedIn Open Networker). I let anyone join my network as trusted and close connections are certainly a part of my network. I believe the size of my network is valuable in itself—to me and to others who invite me to be a contact.

Why the fish? Think about the LinkedIn network as the ocean. Currently there are over 140 million people in this network. The biggest Whale only

has about 45,000 direct connections or approximately 0.1%. In early 2009, LinkedIn put a maximum limit on connections to 30,000. So one guideline is to consider connecting with as many people as possible so when people do a search, you show up at least in their third level, which means you are not directly connected but are connected instead to someone else who is in the person's search connections, versus being a Guppy with perhaps only 45 connections where most likely you are never noticed. With business networking, volume is positive.

YOUR PERSONAL CHARTER

Consider, therefore, increasing your network into terms of it being a project. An example follows (Table 20.1), which is scalable, with the template that serves as a charter for LinkedIn.

In this example, the assumption is one is working on this project in one's spare time, and by devoting a few hours per week, one should have a LinkedIn Profile as best as it can be in three months from the start date. Track it regularly to assess progress, and assume in three months, one should at a minimum triple everything in his or her connections, recommendations, groups, and Linkulator score. What is important is that your Linkulator score is at least 60. At this time, my score is currently 94, so my personal plan is to improve to 100.

ENSURE YOUR LINKEDIN PROFILE IS OF HIGH QUALITY

The objective is to focus on networking success, which it is to have a good profile as this profile is what others see on LinkedIn. Here are some guidelines to consider so your own LinkedIn Profile is of the highest possible quality.

First, ensure your resume is current; therefore, it may be necessary to obtain professional help with a resume writer to ensure it is perfect. Then copy your resume, position by position, exact verbiage, and include your education, other achievements, skills, and interests.

TABLE 20.1

LinkedIn Project Charter

My LinkedIn Project Charter	
Problem:	My LinkedIn profile is not current, I have few connections and recommendations, and I need to make sure it is current and robust because I am looking for a new position.
Opportunity:	Using LinkedIn may help me find a new position and expand my capacity to learn new knowledge and ideas from a broad-ranging network of colleagues throughout the world.
Scope:	To ensure my LinkedIn profile reflects my current experience, education, and contacts
Approach:	I am working on upgrading my profile as my own personal project.
Timeline:	I want to achieve the following milestones as noted:

Milestone	Timing	Goal
Ensure my resume reflects my LinkedIn Profile	+ 01 weeks	Ensure resume is current
Update my LinkedIn profile	+ 02 weeks	Accurately reflects current resume
Update past and current connections	+ 04 weeks	All desired connections are first level connections
Update my 'Recommendations'	+ 06 weeks	Three to 10 for each position listed
Join groups and sub groups	+ 08 weeks	Maximum of 50 Groups and 20 sub-groups per group
Posted/or commented in 'Discussions'	+ 10 weeks	At least once for each group
Linkulator score = > 60 out of 100	+ 12 weeks	http://www.socialmediasonar.com/score.html

Second, insert a professionally taken profile photo, therefore:

- Only include a color headshot that was professionally prepared
- Do not show the upper torso or the whole body because with a thumbnail photo no one then can see your face
- Do not include your significant other, children, pets, favorite hobby, etc.
- Recognize the photo is your first impression to the world

Third, make sure your profile title is representative. One approach is to just list your name; however, another approach is to list degrees and/or credentials after it. Keep in mind the 'search' functions will find you if it is in your profile so if you put PgMP® in your title name or list it in your credential section, it does not matter.

TABLE 20.1 (continued)

LinkedIn Project Charter

Quality:	See the Quality of Your LinkedIn Profile section and ensure you have a Linkulator score that is greater than 60. {An example of the Linkulator tool is found later in this chapter}
Budget:	*(Time)* I am going to devote X (I suggest to two-four) hours per week in developing and maintaining my profile, responding to group and sub-group discussions, answering questions, giving recommendations, and inviting new connections. *($)* I am going to purchase a premium account for better searches and features.
Critical success factors:	List in this section your critical success factors for networking such as locating a job, making new connections, and learning new things.
Return on investment	State in this section how you feel your time is best personally rewarded. If you get a job through LinkedIn then was it worth your time of a few hours per week for that opportunity? List your time value here. Or consider the potential of obtaining a "nugget of knowledge" from someone or several people as a result of starting or contributing to a Discussion Forum. Such an approach may increase your standing in the program and project profession and provide extra credence. It also may help you solve a problem you may be having on a program or project or enable you to connect to a subject matter expert who can assist you.
Risks:	I may get a job offer and have to consider it.
Metrics:	I will track my LinkedIn Profile improvements as follows

LinkedIn Metric	**Benchmark**	**+2W**	**+4W**	**+6W**	**+8W**	**+10W**	**+12W**
Number of first level connections							
Two degrees away (network statistics)							
Number of recommendations in profile							
Number of groups joined							
Linkulator score							
GOAL:	>60 points	+25%	+50%	+75%	+100%	+150%	+200%

Fourth, now that your profile information has the WOW factor, start doing three things concurrently:

1. Search Groups that are of interest to you and join them. You can join up to 50 groups and 50 sub-groups. Each group can also have up to 20 sub-groups, which do not count against the 50 group maximum limit.
   a. One suggestion is to not join social or special interest non-value added groups, such as the 'Donut Club' or 'Star Trek Trikes', as it takes away from the real business value that is available from LinkedIn. Additionally people see these nuances on your profile and may get the wrong impression.
   b. Look for "keywords" of relevance to your profession (i.e., program or project, management)
   c. Look into the members of groups you join and read their profiles—ask them to connect with you (ideally with a small tailored message in the Invitation).
   d. Start searching LinkedIn contacts you know and ask them to join your network. You have 3,000 invitations available before you need to request more from LinkedIn. Then, you can obtain an additional 500 more each month.
2. After you get all known connections on your profile and have had the opportunity to connect and/or reconnect with them to a suitable extent, request a recommendation from some of them to add to your profile. Typically three to 10 recommendations for each position you list in your profile is a good benchmark.
   a. Keep in mind there are no limits as to the number of recommendations you can get or give. You also have the option to accept but not show them and also show or not show the ones you have given.
   b. My own guidance is to not show the connections or the recommendations I have given to people because I wish to focus on respecting their privacy.

OBTAINING CONNECTIONS

Assume now you have adopted an Open Networker philosophy. In my own case with over 29,000 connections, I have only have disconnected six of them for various reasons. I did so as two were people into a 'metaphysical'

arena that was not of interest to me, and three others seemed to be people who sent information to me demanding help. The sixth one was in my opinion unethical in offering to donate $1 to charity for a recommendation on his profile (see note four at the end of this chapter). Keep in mind that you have control at all times with your profile. You can remove and block connections, groups, and recommendations of any individual or group. However, recognize if you decide to block someone, you cannot unblock this person later or connect in the future.

There are hundreds of Open Networker Groups you can join and ask people to connect, or they will connect with you if you send them an invitation to do so. Open Networker or Top Linked is recommended. These groups charge a fee, such as $30/month US, but enable one to obtain an additional 600 to 800 connections per month. LinkedIn Strategies is an example of a group that gives advice on networking and the benefits to be gained from it.

Finally, there is an *I Don't Know* (IDK) this person option. Simply do not use it as if someone invites you, and you prefer not to connect with them. If this is the case, LinkedIn enables the ability to archive the invitation and delete the email. Getting too many IDKs will limit one's ability to get new connections, and it is rude to the person as he or she is just asking for an invitation from you to his or her network. These IDKs tend at times lead to emails for classes, seminars, products, and services. If you are not interested just delete the email. However, using a prospector analogy, there may be 'some gold in the ton of ore,' and you may find items of interest.

SECURITY

As the growth of LinkedIn is exponential, here are some recommended security suggestions.

They are my suggestions, but as I have coached many people, your LinkedIn Profile is a direct reflection on you, and like other personal information, you should monitor it accordingly. As you grow your number of connections, you are also going to get more 'inmail.' Inmail is an email sent through LinkedIn and shows up on your profile. Everyone is allowed so many inmails per month and more with a premium paid account. You should monitor your inbox daily, and at worst case weekly, and expect what is shown in Table 20.2. Table 20.3 presents guidelines for Inmail.

TABLE 20.2

Security Suggestions

Area/Item	I Do Not Connect	I Connect	A Judgment Call
Profile photo	A slogan, company logo, poster, strange photo, or very odd profile photo	Professional profile or headshot	No photo, a poor quality photo, or a full body shot photo
Name	Company name or abbreviated name such as 'Susan B.' or without credentials	Full name and/or with credentials	No capitals used in the name– this approach is somewhat suspicious
Job title	Not Available	If stated and especially program and/or project management in nature	Positions that lack a personal interest in connecting
Number of connections	If no other connections	If the profile has connections	Few connections
Personal message in connection request	No message	A personal legitimate message as to why the person wants to connect with me	LinkedIn default message, such as "Since you are a person I trust".
Groups	None listed	If the person belongs to any of the same groups	If the person does not belong to any similar groups
Recommendations	None listed	If the person has a least one good recommendation and is trying to build up his or her profile site	If the person lacks any recommendations
Overall profile quality and content	If resume information is not provided	If the person has a full profile	If only partial information included on the profile
Sexual in nature	Any provocative photo, adult XXX movie, or Erotica sites	I do not connect	I do not want anything like that nature associated with me professionally

TABLE 20.3

Inmail Guidelines

Type	Intent/Content	Suggested Response	Considerations
Connection requests	People want to connect with your first level as a direct connection	Use the guide above to either approve or ignore the request	Remember to check out the person's profile if you do not know him or her, give the person the benefit of the doubt that he or she is trying to make a legitimate business connection, but if you have any suspicions, then do not accept the invitation to connect.
Recommendations	A first level connection asks you to recommend the requestor, and your comments will be part of the requestor's LinkedIn profile page	If you know the requestor well enough, it is appropriate then to write a recommendation. Remember a recommendation also reflects on you so ensure spelling and grammar are correct, and the statements are impactful. Length is not a reflection of the quality of the recommendation.	If someone sends you a recommendation request, and you do not know the person well enough to do so, then politely respond with a no and why. If the individual continues to ask you, then you may want to disconnect with this person. Remember only write a recommendation for someone you know well enough to do so.
Join a group	Someone would like you to join his or her LinkedIn Group	First, take a look at the group by clicking on the group link and review it, and if interested, join it, or if not then decline the request.	Remember, LinkedIn has a limit of 50 groups one can join; therefore, be sure the group is of interest to you. You can leave a group at any time.

continued

TABLE 20.3 (continued)

Inmail Guidelines

Type	Intent/Content	Suggested Response	Considerations
Business ventures	LinkedIn is a business website so people will market their product(s) to an interested group of individuals.	Read the request and either ignore, respond 'no', or respond 'yes' for follow up if interested.	Consider first as LinkedIn is a business site, this is appropriate 'behavior', and therefore, treat each inmail on its own merit.
Direct business ventures	The inmail is a business request made directly to you	Read the request and either ignore, respond 'no', or respond 'yes' for follow up if interested.	If not interested, consider sending a polite 'no thank you' explaining why.
Forward introductions	Someone wants to connect to someone with whom you have a direct connection.	In most cases it is a best practice to pass through the request as asked.	If the requestor asks you to recommend them along with forwarding the connection request, you can decline to do so.
Charity requests	Someone is asking for a charity donation or cause	Look at the request and charity to see if is legitimate and if interested and then respond accordingly.	If you are not interested then decline, and if it is not a valid charity, then report it to LinkedIn Customer Service.

As with each inmail received, take it on its own merit and respond accordingly. You may do similar actions; therefore, you want the receivers to respond positively to your requests or at least consider them on their own merits. Keep in mind at any time you believe the request is in appropriate or fraudulent, then report it to LinkedIn using the Help Center Link at the bottom left of the webpage.

Your LinkedIn Profile should mirror your current resume and the connections, groups, recommendations, and other posted content should only enhance your presence, uniqueness, and overall strengths so manage it appropriately. This includes how you respond to requests you receive through inmail.

LINKEDIN PREMIUM ACCOUNT

One option if you will get more involved with LinkedIn is to consider getting a premium account. The premium account provides more search options, email capabilities, and priority with customer service. Premium accounts range from $5 to $500 per month (US). However, anyone can build an adequate network without the need for a premium account.

ACTIONS FOR PREDICTIVE POSITIVE CONSEQUENCES WITH LINKEDIN

Keep in mind that many people make their living or a partial living by using LinkedIn. The more connections you get, you will receive more inmails, announcements, group discussion posts and comments, and requests to connect. With this increased email volume, it is necessary to manage it accordingly which brings me to some suggestions which follow. The following are what I have learned and practice. Consider your own set of rules and be consistent in following them when using LinkedIn or networking on other sites:

1. Never IDK someone's invite unless it is a rude message or if it seems to be one with possible fraudulent intent. Just archive or ignore it if you do not want to connect with the person. For me if the greeting starts with *Wassup?*—I delete it or ignore it as I am not interested in what the person has written nor do I feel compelled to connect. I am also suspicious of a person connecting with me with little or no content on their profile and few connections. My approach is to then wait until the person has enhanced his or her profile and has other connections.
2. Put a picture on your profile, as discussed previously. Check your LinkedIn Inbox on a regular basis, preferably daily and at a minimum weekly, but be consistent rather than intermittent.
3. Respond to all LinkedIn related emails as follows:
   a. If someone sends you a standard invite—accept or archive it
   b. If someone sends you an invitation with a personal message added to it, then respond back in kind

   c. Read or delete announcements, questions, group discussions, group comments, requests to take polls, and spam emails. Your option is to respond, ignore, and/or delete, but if you do respond, do so in earnest and take the time to give a quality answer.
   d. Do not send an emotive response—keep it professional at all times.
4. Report anything rude, illegal, or unprofessional to LinkedIn Customer Service and let them deal with it versus confronting the person directly.
5. If you become uncomfortable with someone, you can always remove them from your network. However, as stated previously, if you remove and block, you can never reconnect with that person. Keep in mind LinkedIn is a business versus a social networking site, so save the twitter for Twitter.
6. If you ask for a recommendation, be prepared to return one in kind if asked. Always remember that a person's recommendation also reflects on you, so write a good quality one. Consider preparing it in Word to use its spell check feature.
7. If you join a group and sub group, then be active in the group from time to time. Respond to discussions posted and take an interest in what is being said as your goal is to learn from others in the group and share information that may be of value to them.
8. Always remember the people on LinkedIn are your connections, so you want to treat them with respect at all times as you never know when one will be a benefit to you. LinkedIn to me is a way to make long-lasting friendships.
9. Do not forget 'maintenance'—request a recommendation update if appropriate every year or so and offer the same to others. Keep in mind this request should only be from people you are working with, if there is a significant change in the relationship, or if you have new accomplishments in order that the person could write another paragraph with meaning.

RECOMMENDATIONS

Do not give and receive a recommendation on the same day. Your connections get flagged as to status changes with your profile, and it is clear to see you traded recommendations. Observe the reciprocal example in Figure 20.1.

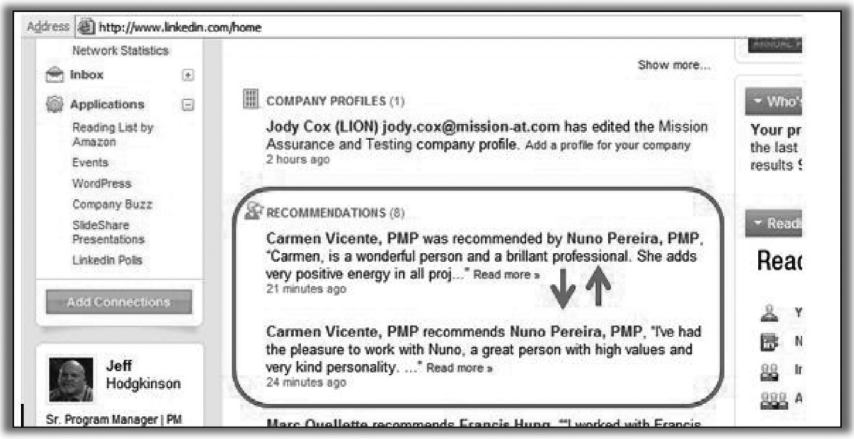


FIGURE 20.1
Reciprocal recommendation example.

LINKULATOR TOOL

Figure 20.2 is a screen shot of this tool as described in the Project Charter. This tool will allow you to score key points on your LinkedIn profile as to the robustness or competence of your profile. I advise that a score of 60 is minimal, and a score of 80 or above shows your LinkedIn profile is excellent. You should score yourself at regular intervals, perhaps monthly and then quarterly, to gauge your progress to your goals.

Take a look at the upper right corner of your LinkedIn profile. There is a drop down list with several options, one being Groups. There are over 2,000 Program Management and nearly 3,600 Project Management subject groups on LinkedIn (see Table 20.4). Many program management organizations are particularly active in LinkedIn. For example, in performing some LinkedIn searches, see the following results. This table is not used to advertise or emphasize one group or interest over another but to provide an overview of what is available on LinkedIn for the program and project professional. Keep in mind that there is an overlap with some groups, but it will provide some perspective.

A passive feature of LinkedIn group membership is an email sent periodically to members, announcing new discussions and/or jobs that are posted. One suggestion is to join groups in which you feel you can be an active participant or groups on a topic in which you wish to increase your

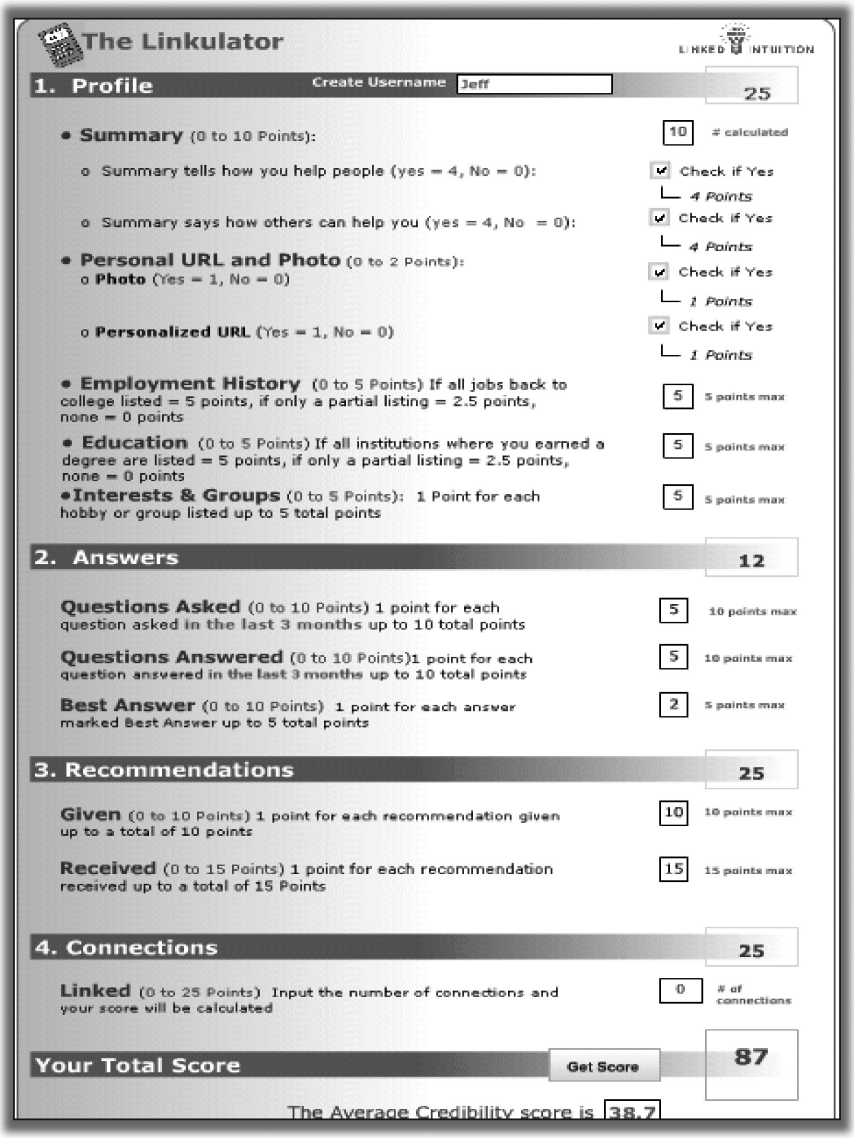


FIGURE 20.2
Linkulator tool example.

understanding by reading the posts by others in the discussion forums, such as the Information Technology Infrastructure Library (ITIL) or Agile. Make sure the groups you join are relevant to you. Many vendors and trainers offer discounts for their products and services through LinkedIn groups. There are success stories of people finding jobs, obtaining a new

TABLE 20.4

LinkedIn Group Examples

Search	Project Management	Program Management	Portfolio Management
Total number of groups	3,604	2,040	485
Project management subjects such as risk management or cost management	841	30	20
PMI Chapters	188	9	2
Agile specific	75	11	5
Projects IN Controlled Environment (PRINCE2) Groups	209	14	10
International Project Management Association (IPMA) Groups	79	2	1
Program or Project Management Office (PMO)	80	31	30
Six Sigma	33	5	3
Information Technology Infrastructure Library (ITIL)	35	4	3
Project Management Careers	40	11	7
Project Management Jobs	135	43	14
Membership	PMI® Central = 30,000+	PM Network = 250,000+	PM Community = 110,000+

Note: The PgMP® Credentialed Networking Group is ranked number eight with more than 5,000 members in the Program Management category.

credential, or making good business connections who owe at least part of their success to their group membership.

As shown in Table 20.4, there are over 5,600 program and project management subject groups on LinkedIn. All career-minded program and project managers should first ensure that their LinkedIn Profile is commensurate with their professional experience and education, then seek out, join, and actively participate in appropriate program and project subject groups. The benefits enable you to receive new information and make new professional contacts. You should choose your groups with care and ensure you follow any guidelines your employer may have.

INCREASING YOUR BUSINESS NETWORKING POTENTIAL

Up to this point I have written this chapter from a Novice perspective at Social Networking for the benefit of the reader. Some of the information

TABLE 20.5

Steps to Promote LinkedIn Recognition

Step #	Progressive Step	Why and/or Benefit
01	Use the Project Charter as a guide and make a copy of it and complete it.	The charter provides a plan and goal(s). Remember planning for best results starts with the end in mind. Setting goals will motivate you to achieve them.
02	Set aside an amount of time to this project and manage it as a project.	It is critical you carve out a few minutes per day and a set time each week to work on your LinkedIn Profile and presence. At least one hour a week is recommended.
03	Update your current resume and then copy it in your LinkedIn Profile.	Ensure your education and career experience are accurate and are in chronological order before you post it.
04	Post a professional looking profile picture.	Your photo is the first thing people see on your profile. Make sure it is professionally done.
05	Make a list of current and past colleagues and start making those connections, make some new connections, and request recommendations as appropriate.	This approach starts to expand your presence on LinkedIn. Be sure to respond promptly (I recommend daily) to all inbox items. This creates a positive reputation.
06	Join the maximum number of groups and sub-groups that interest you professionally or personally and be active in them.	Again this expands your presence on LinkedIn but also your expertise. Try to be active in a few key groups. Make new contacts and connections.
07	Update your contacts weekly with what is new with you from your profile—it is right under your photo and above your position's title. Go to the Edit Profile to find it.	This update goes to all your connections. Post information that is work or career related only. If you do not have any new news, then do not to post anything.
08	Consider posting books you have read, presentations, Twitter links, etc. This feature is located at the More Link, Learning Center, or Applications' menu at the top of LinkedIn at any page view.	Consider each posting carefully, and if you do utilize it, then do so fully. Also be sure you understand how to use it before adding it to your profile. As always you can remove it at any time.
09	Answer questions on LinkedIn as you have time even if only one per week.	Recognize this approach is an excellent way to show your expertise to others. Remember to be professional at all times.
10	Start a new Group. Check for current groups with the same interest, but if you do not find one, then start one.	Ensure you are ready to devote the time to being a group manager as it can be time consuming; however, it is also very rewarding.

you probably knew and perhaps you learned a few tips. However, what if you really want to be 'out there' and recognized? Maybe you are looking for a job, hoping to gain new business or to make new contacts, or just want people to look at your LinkedIn Profile and think to themselves 'Wow' this person has an impressive profile. The Top Ten steps found in Table 20.5 are ones that can enable you to become better recognized on LinkedIn. Again for your own personal security consider each step to your comfort level as to what you want to make public about yourself.

Maintaining the discipline on the above ten steps will be necessary until you reach your goals or comfort levels. You will know when you are there when you get the first inmail and/or email starting off with words to the effect of, 'I noticed your very impressive profile and….' Remember:

> Preserve when others fail, Overcome you will prevail…

ADDITIONAL THOUGHTS AND CONSIDERATIONS FOR THE PRO BUSINESS NETWORKER

Network: Because in this ever changing global economy and job market, it is now a requirement to network to some degree. You do not need to be consumed by it, but you should try to make it a part of your daily tasks. Today it is optional, but in the near future, it will be a necessity to network. If you have not embraced it yet, now is the time to consider doing so. You do not have to be a zealot, but you do have to make time for networking a part of your daily routine.

Perceptions: You are now interacting with people on a global level. Understand that locations, culture, language combine to make someone's approach or email to possibly come across differently than what you are normally used to reading. Be polite, objective, and professional at all times so you are not perceived negatively.

Role Modeling: The more connections, groups, and in general the more people you connect with in any way is how they see you. Your reputation is critical to protect and monitor so do not write anything that can be construed as unprofessional on your part. This does not mean you cannot give your opinion or show your passion, but do it in a way that is polite, objective, and professional. Remember you never know who is reading about you.

Helping Others: Recognize it is fine to not accept a request, but if you do get sincere inquiries for help or if someone asks a question, then respond to it accordingly. A polite response and words to the effect of, 'Thank You—I am not interested at this time, but will consider it if a future need arises,' is fine. If compelled then phone back if they provide a phone number. Again, it is business networking.

Other Sites such as Facebook: Many people are also on Facebook and other sites; some prefer to master the usability of one site such as LinkedIn. However, if you are on Facebook or similar sites, one suggestion is to keep it social, or if business, then keep it as business. The same rules noted in this chapter apply to other sites.

Face to Face and Phone Calls: As we become more and more comfortable with email and written comments, it is easy to forget that meeting face to face or having a conversation by phone is much more powerful. Writing can often be misinterpreted and does not provide the tone and inflection passed on in conversation. Another suggestion is when you make new connections, and you move forward with a business connection or a professional/personal relationship, at some point initiate or suggest a phone call. It will be much appreciated in the long run.

Take the Program/Project Manager perspective to Business Networking: Have the perspective that business networking is a personal project to manage until you reach your goals; then maintain your profile and contacts. That was the approach I took, and it worked for me. I sincerely hope it will do the same for you.

SUMMARY

In this chapter, I have discussed ways to increase your LinkedIn social network. At the start of the chapter, I described the benefits I gained from doing so. As for your benefits, that is something for you to determine. That said, in my experience LinkedIn is a valuable tool to share ideas, questions, and tips for free with fellow professionals. You can use it to validate your current methods of tackling situations (e.g., by asking a question in a Discussion Forum, you can quickly obtain responses from people all over the world) or to think of new ways of approaching situations. If you are looking for a new career opportunity, it also can help.

Whatever your core reason is for using LinkedIn, please be assured that it is not an all-consuming activity that should devour all your free time. You still have all your other life-building activities to lead. If you see the value in it, you will continue using it. Simple as that! Set yourself some specific targets in your Personal Charter and work toward them. You will see the benefits grow.

NOTES

1. You can set your LinkedIn Update on your profile page to also display the update on your Twitter account.
2. Additional information on the PgMP® application process can be found at www.pmi.org
3. 'PgMP Credentialed Networking Group' can be found at: http://www.linkedin.com/groups?about=&gid=61909. It has approximately 7,000 members with 12 sub-groups.
4. I reported this behavior to LinkedIn to investigate. Remember LinkedIn is for the most part self-policing, so if you get or observe questionable requests or behaviors, then report them to LinkedIn Customer Service.

ADDITIONAL REFERENCES

There is extensive information available, so here are five suggestions that may be helpful.

First, go to LinkedIn Groups, type in Business Networking, and do a search. There are over 17,000 groups. Scan through and then refine your search using the advanced search features to find ones of a more specific interest. Join those groups that you believe will be most beneficial.

Second, go to the LinkedIn People, type in Business Networking, and do an advanced search for any specific interests you have. This approach provides a list of people in your network so you can request connections. The caution here is many people will claim networking expertise (such as a social media expert) as they have a book, website, or training product to market. This is fine and expected, and some are excellent at networking, just consider the benefit of each to you before contacting that person.

Third, under the same drop down options, go to 'Answers' using Business Networking in the search. You will find hundreds of questions, and each question will have many answers. Investing a few hours in scanning through these questions should provide you a great education on business networking. A lot of the information will be opinions, but those

people that contribute prolific and informative answers may be good resources to you and people you may consider contacting as you build your network.

Fourth, a Business Networking search on Amazon (www.Amazon.com) yielded over 26,500 products starting with books on networking.

Lastly, type Business Networking on Google® (www.Google.com) search, and you get over 63 million hits.

21

Portfolio, Program, and Project Management as Enablers of Innovation

Brian Grafsgaard, PMP, PgMP

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INTRODUCTION

In an ever-changing world, it is widely accepted that organizations must innovate in order to survive. The phrase "innovate or die" has become a common refrain. This imperative is succinctly described by Drucker (1993):

> An established company which, in an age demanding innovation, is not able to innovate, is doomed to decline and extinction (p. 532).

But the mission of any organization is not to merely survive; it is to grow. During the recent economic downturn many organizations turned inward and focused exclusively on efficiencies and cost reduction. Although that may be an effective strategy for the short term, it has not proven to be a sustainable approach. This view is echoed by Kaafarni and Stevenson (2012):

> Cost cutting has become an art form and reducing costs to build the bottom line has become the norm. However, this is not a sustainable model. Given the massive cost cutting businesses have already sustained, top line growth is essential to continue improving the bottom line.

Phillips (2012, p. xvi) warns that "the fundamental business models in most businesses have become unbalanced, sacrificing innovation for the sake of efficiency and effectiveness." Phillips elaborates on this point by stating:

> Business models are so focused on efficiency, cost-cutting, and short-term outcome, that is makes innovation almost impossible to accomplish once, much less over time (p. xvi).

Phillips (2012) argues that organizations must balance efficiencies with sustainable innovation in order to achieve growth and long-term viability. Long-term viability requires both efficiency and top-line growth, which requires sustained innovation. But what exactly is innovation? Can innovation be managed? And, more importantly, can innovation become a consistent, sustainable capability? Smith and Fingar (2006, p. 178) respond to these questions and provides the backdrop for this chapter:

> Innovation isn't difficult because employees don't have good ideas. The world is awash with creativity and technological breakthroughs. Rather, myriad obstacles in the idea-to-cash process limit a company's ability to

> innovate. …Seen as the creator of new value, innovation isn't hit-or-miss, trial-and-error lateral thinking, but a repeatable process. What is innovative about innovation today is the realization that it can be done systematically.

In this chapter we will define innovation and discuss how portfolio management, program management, and project management provide the basis for a long-term, sustainable innovation management ecosystem that unites the dreamers with the doers. We will examine how portfolio management integrates with idea management and helps organizations "do the right work" by managing alignment and investment of resources. We will also examine how program and project management help organizations "do the work right" by managing execution.

INNOVATION DEFINED

Although commonly viewed as a modern term, "innovation" has been in use since the 16th century or earlier; Machiavelli described the perils of being an innovator in *The Prince* (1513). The term "innovation" is derived from the Latin word *innovatus*, the noun form of *innovare*, which means "to renew or change" (Innovation, 2012b). The modern definition of innovation is "the introduction of something new" (Innovation, 2012a). By that definition, innovation can be as subtle as a process improvement, a new product feature, or as revolutionary as providing a new product, service, or capability, or even a new market.

In recent years the term "innovation" has become ubiquitous. A recent Google® search (February 20, 2012) of the term *innovation* revealed 1,453,000,000 entries (nearly 1.5 *billion* entries). A recent search on Amazon® for books and publications related to innovation produced over 47,000 results. Briggs (2012) describes the problem with the ubiquity of the term:

> "Innovation" today is much like "Branding" was in the '90s; greatly overused and highly misunderstood. It's the new buzzword and its ubiquity is putting the entire concept of innovation in serious jeopardy. Putting temperature sensitive ink on your labels so you know when your beer is cold is not innovation.

Rogers (2003), whose first edition has served as a guide since 1962, elaborates on the definition of innovation as "an idea, practice, or object that

is perceived as new by an individual or other unit of *adoption*" (p. xvii). Rogers goes on to say that "an innovation presents an individual or an organization with a new alternative or alternatives, as well as a new means of solving problems" (p. xx). Kaafarni and Stevenson (2011) further clarify this concept:

> To be a true innovation, a product, service, or company has to have three essential elements: It has to be unique, it has to be valuable, and it has to be worthy of exchange (p. 9).

Implied in this definition is the distinction between invention and innovation: an invention primarily addresses the first element—often resulting in a patented concept or technology—but may not result in something of value or worthy of exchange. Too often, the view of innovation is incomplete and focuses only on the "glamorous" side of innovation, the generation of ideas. Berkun (2010) elaborates on this misperception and, through many examples, provides the real story behind some of the world's most famous inventions. The untold story for many of them was not only the extraordinary effort required to develop a viable idea or hypothesis, but the extraordinary effort required for the resulting invention to gain acceptance.

This is not hard to believe as one surveys the last 200 years and the advances that have been made, let alone in the last 20 years. In fact, consider the quote attributed to Charles H, Duell, as he (allegedly) resigned his post as the Commissioner of the U.S. Patent Office in 1899:

> Everything that can be invented has been invented.

As much as we may like it to be true, it turns out that this quote is a myth. A quick search of the phrase provides evidence not only of its veracity but also how it became a perpetual myth. Duell, as quoted in Wikipedia in 2011, provides a reference to what he actually said (in 1902):

> In my opinion, all previous advances in the various lines of invention will appear totally insignificant when compared with those which the present century will witness. I almost wish that I might live my life over again to see the wonders which are at the threshold.

Imagine if he were alive today. The world has seen many advances over the intervening years, and the rate of change is rising exponentially. But

still, we have only seen a fraction of the ideas that are out there, ideas that have not yet become inventions, or ideas that have progressed to become innovations. Scocco (2006) provides further clarity on the distinction between invention and innovation:

> [Invention] refers to new concepts or products that derive from individual's ideas or from scientific research. [Innovation] represents the commercialization of the invention itself.

The concept of commercialization, or adoption, is critical to innovation success. Rogers (2003) first introduced the roadmap to adoption in 1962, when he described diffusion (adoption) as a way in which to communicate an innovation using certain channels among members of a social system over time. This sounds similar to the recipe for effective change management, which Prosci (2011) describes as: "the process, tools and techniques to manage the people side of change to achieve the required business outcomes." It incorporates tools to help individuals make successful personal transitions resulting in the adoption and realization of change.

From the definitions above a few common themes have emerged. Innovation provides a new capability that, once adopted, provides value to the recipient. Without execution the idea never comes to fruition, and without adoption, the solution never provides the intended benefit. In short, the purpose of innovation is to provide something new that people want (even if they do not yet realize they want it). In some cases adoption may take years.

We are also beginning to sense that innovation is a process. Patniak (2010) provides a succinct reminder of the purpose of innovation and provides the necessary elements:

> Innovation is about growth, and growth takes empathy, creativity, and execution. Empathy, on an organizational scale, is a shared intuition for what people outside the company really need and value. Creativity is the ability to come up with new ideas for products, services, and businesses that are different and distinct. And execution is the art of getting things done.

These three elements also summarize well the commonly understood stages of design thinking—performed in a linear or simultaneous, repeatable fashion—by Simon (1999), whose first edition has served as a guide since 1969: define, research, ideate, prototype, choose, implement, and

learn. Berkun (2010) touches on this life cycle and the role of empathy in the innovation process, stating that "the majority of innovations come from dedicated people in a field working hard to solve a well-defined problem. …the innovators spent time framing the problem, enumerating possible solutions, and then began experimenting" pp. 40–41. A well-defined problem can help reduce the ambiguity of the innovation effort; the objectives are understood even if the "what" is not fully known.

The concept of experimentation and developing a learning environment are also critical to innovation. Managing an innovation initiative as a program versus a set of multiple related projects can improve the overall probability of success by enabling the learning process that project management alone typically does not provide. It is important that a project to test a hypothesis or conduct an experiment be allowed to fail (and fail quickly). It is not in our nature as project managers to allow failure. Defining rejection criteria in addition to acceptance criteria can allow a fact-based assessment and enable a decision to be made.

If a project to develop a proof of concept or test a hypothesis meets the rejection criteria, the entire program does not have to fail; a project to develop an alternative proof of concept or test an alternative hypothesis can be launched in support of the program objectives. Being prepared to quickly launch an alternative proof of concept or experiment can mitigate the risk to the program. To do so, it is imperative that the lessons learned be captured and leveraged for the new attempt.

We will explore further how program management, coupled with portfolio management and project management, integrate to add value to the innovation process and help eliminate barriers.

TYPES OF INNOVATION

However, before discussing these capabilities it is important to acknowledge that there are several broad categories of innovation, each with its own particular challenges. In fact, Moore (2008) identified 13 distinct types of innovation, based on the product or service life cycle involved. Bessant and Tidd (2009, pp. 21–26) identified four dimensions of innovation, including:

1. Product/service innovation—changes in things that the organization offers.
2. Process innovation—changes in the ways these products/services are created and delivered.
3. Position innovation—changes in terms of the context in which the products/services are introduced.
4. Paradigm innovation—changes in the underlying mental models, which frame what the organization does.

Within each of these dimensions lies a continuum ranging from evolutionary (incremental) innovation to revolutionary (radical) innovation. To illustrate the point, Bessant and Tidd (2009, pp. 23–25) provide examples of incremental and radical innovation across each of these dimensions:

- Product/Service Innovation
  - Incremental—improved performance of incandescent light bulbs
  - Radical—Light-emitting diode (LED)-based lighting, using completely different and more energy efficient principles
- Process Innovation
  - Incremental—improved fixed-line telephone services
  - Radical—Skype and other Voice over Internet Profile (VoIP) systems
- Position Innovation
  - Incremental—banking services targeted at key segments (e.g., students, retirees, etc.)
  - Radical—micro-financing opening up credit for the very poor
- Paradigm Innovation
  - Incremental—IBM eliminating its personal computer business to focus on its consulting and service offerings
  - Radical—Apple integrating the iPod with iTunes to become an integrated personal entertainment provider *[author's example]*

An innovation initiative may simultaneously impact one or more of these dimensions, increasing the complexity, uncertainty, and risk that has to be managed. Bessant and Tidd (2009) provide the example of a new jet-powered sea ferry, which could be both a product innovation and a process innovation. To these dimensions this author adds position innovation as well, if the provider were to market the unsurpassed speed of

passage as an alternative to flying. The provider may also decide to change its entire paradigm and, rather than remaining a low-cost, volume-based service provider, to become an up-market provider of fast, efficient service to the more affluent. The dimensions that are impacted, and the degree to which they are impacted, ultimately impact how the initiative is managed and the degree of change required.

Revolutionary (disruptive, and/or breakthrough) innovation typically introduces a higher degree of change, along with higher levels of ambiguity and uncertainty. Evolutionary (incremental and/or sustaining) innovation basically introduces less change, along with less ambiguity and uncertainty. Evolutionary (sustaining) innovation, in many ways, is the opposite of revolutionary (disruptive) innovation. Organizations typically have more mature processes in place to introduce sustaining innovations as it is less impactful to the organization and to the intended beneficiary. Disruptive innovation often takes more experimentation and effort to deliver and is typically more impactful to the organization and recipient. Disruptive innovations may require a complete paradigm shift and often requires that the beneficiary be educated about the benefits—recipients may not even be aware that they have such a need—before they are sufficiently adopted; effective change management and communication are critical in this situation.

To add another element of complexity, innovation can be driven from within the organization (closed innovation) or as a collaborative effort with stakeholders outside the organization (open innovation). This too increases the complexity of the initiative and how it is managed. Open innovation, in particular, requires a great deal of communication and stakeholder management.

It is beyond the scope of this chapter to identify and describe every category, type, and dimension of innovation. For the purposes of this chapter we will address innovation more generically, recognizing that any innovation effort results in change, which must be proactively managed across the entire life cycle, along with the ambiguity, uncertainty, and risk that is introduced. The difference is the degree of ambiguity, uncertainty, risk, and change that is introduced.

Program management effectively addresses the change, ambiguity, uncertainty, and risk inherent in the innovation process. Project management also addresses the change, uncertainty, and risk, but at a different level. Both capabilities integrate with change management to foster adoption. And, finally, portfolio management integrates with program management to bridge the gap between organizational strategy and execution

and ensure that the right ideas are being pursued. Portfolio management also ensures that the proper resources are being allocated.

Program management is especially useful in reducing ambiguity and uncertainty, a hallmark of innovation initiatives. As Thiry (2010) states, "Program management has emerged as a methodology that enables organizations to deal with increased ambiguity and complexity and is well suited to reduce ambiguity, an essential preliminary course of action for project management to be effective" (p. 17).

MANAGING AMBIGUITY AND UNCERTAINTY

Ambiguity refers to the likelihood that the objectives or the intended result of the initiative will change (the what). Uncertainty refers to the likelihood that objectives cannot be met (the how). Project management can address uncertainty to some degree through effective risk management, but the objectives of the initiative typically must be well understood. Risk management principles can be applied at both the program and component project levels to reduce uncertainty. Hillson (2004) provides an important distinction between uncertainty and risk to illustrate this concept:

> Risk is measureable uncertainty; uncertainty is unmeasurable risk (p. 6).

From this statement we can see the importance of consistently identifying and analyzing risk events (both threats and opportunities) in an attempt to reduce uncertainly. Structuring the innovation initiative as a program provides the benefit of risk management on several fronts: at the component project level and the program level, which includes both program-level risks and the component project-level risks that, in aggregate, may impact the overall program. Despite our best efforts we will never completely eliminate uncertainty, which further emphasizes the need for a learning process. As Donald Rumsfeld, U.S. Secretary of Defense, famously stated during a press briefing in 2002 ("DoD news briefing," 2002):

> …there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—there are things we do not know we don't know.

These are the fundamental precepts of risk management and uncertainty. Thiry (2010) describes ambiguity and uncertainty on a continuum:

- *Ambiguity*—related to the likelihood of objectives to change over time and expressed as a continuum from pre-existing (low, typical operational change) to developing (medium, typical of business solutions) to emergent (high, typical of organizational or societal change).
- *Uncertainty*—related to inability to predict outcomes, based on identified objectives and as a continuum from known (low, typical of operations) to knowable (medium, typical of projects) and unknown (high, typical of breakthrough research or [author's note] radical innovation).

To demonstrate how traditional project management is best suited to low ambiguity situations, even with high uncertainty, Thiry (2010) maps these dimensions (low and high uncertainty against low and high ambiguity) into quadrants that reflect the methods typically required for the various combinations. Thiry (2010) explains that in high ambiguity, high uncertainty situations, decisions must be based more on experience and intuition than data, which "requires a process where results of decisions are continually measured and objectives are adjusted accordingly" (p. 60). The experience and intuition required are gained through a learning process, applying the knowledge, skills, and competencies of the program team, as well as using the lessons learned during the innovation process.

During the innovation process, a number of decisions have to be made, some based on hard evidence and some based on intuition; however, it is beyond the scope of this chapter to cover in depth how the interdependent relationship between ambiguity and uncertainty affects the decision-making process and the implementation of those decisions.

MANAGING CHANGE

Change management is a critical component of innovation from the ideation stage to adoption and sustainment of the product, service, or capability. Change management is an art and science unto itself and one that

can be challenging if done casually. Prosci (2011) characterizes change management as both a process and a competency:

> From a process perspective, it is the set of steps followed by a team member on a particular project or initiative. For the given transformational effort, it is the strategy and set of plans focused on moving people through the change. …Effective change management follows a structured process and uses a holistic set of tools to drive successful change.

Change management is integral to program and project management and the innovation process. Every innovation initiative, by its nature, results in some degree of change. Disruptive innovations may change people's perceptions or even create a completely new market. Nearly every one of the conveniences that we enjoy today was at some point a disruptive innovation that launched a whole new market (e.g., your refrigerator, automobile, air conditioning, etc.). This concept is exemplified by Henry Ford's most famous adage:

> If I had asked people what they wanted they would have said faster horses.

Although this quote, too, is a myth (Vlaskovits, 2011) it illustrates some important concepts about creativity and the problem to be solved, as well as the aversion to change that many organizations experience.

Change management is tightly integrated with the disciplines of stakeholder management and communication management. To effectively manage and facilitate change you have to know who will be impacted by the change and how they will feel about it. You also have to continuously communicate with stakeholders to prepare them for it and ultimately persuade them to accept and adopt the change. Communication is a critical component of change management and must be performed at both the program and project levels.

But communication alone does not ensure change will be accepted, and the benefits provided by the program will be sustained. Benefits management is also directly integrated with change management to ensure that a comprehensive benefits realization plan, including plans to transition the program's benefits and outcomes to the intended recipients and ensure that they can be sustained, is defined and executed. Benefits management will be covered in more detail later.

It is beyond the scope of this chapter to cover in depth the art and science of change management; however, a wealth of information is available

(e.g., a Google® search conducted in February 2012, resulted in 94,000,000 entries on the subject).

OPPORTUNISTIC INNOVATION

We have to acknowledge that there are several dimensions and categories of innovation (on which there is no universal agreement). It must also be recognized that innovation can occur anywhere in the organization and at any time, including during the execution of a program or project; innovation does not explicitly require an "innovation" initiative. This type of innovation is more closely associated with the positive side of risk management, the continuous identification and exploitation of opportunities. The proactive identification of opportunities, managed with the same rigor and attention as potential threats, often results in process efficiencies, shortened project life cycles, an improved solution, and/or enhanced benefits. Hillson (2004) recommends that threat-based project risk management be extended to include opportunities and provides a framework to do so. The opportunity side of risk management is commonly ignored.

A good example of this opportunistic "innovation" occurred while the author was managing a Payment Card Industry (PCI) compliance program for a retail organization. As a compliance program it was in many ways the antithesis of an innovation program. Along with training and process changes, the emphasis of the program was on implementing familiar security technologies to protect sensitive data on a point of service (POS) device. One of the primary functions of a POS is to process payment cards. During the design phase for this particular project a strategic program was approved to enhance the POS to serve as a web portal, with full web browsing and e-mail capability. When you consider where most external threats to data security come from (i.e., the Internet and e-mail), it is not difficult to recognize that our objectives were in direct conflict.

Through the program and project risk management processes it was apparent that this potential threat existed. As a result, a risk mitigation

plan was prepared with the planned response: stop taking payment cards on the POS device. Although the organization was aware of this eventuality, when the time came it was a wildly unpopular option. Fortunately, through the risk management process this author also learned of a potential opportunity, driven by the perpetual change in security technologies. One technology in particular was on the horizon but not yet commercially available. The conflict presented the opportunity to act, and, despite the risk inherent in new technologies, it became possible to respond and leverage the new technology.

Because of our earlier planning, and being placed in a contradictory position, this author was able to accelerate access to the technology and meet the requirements for both initiatives, processing payment cards on the POS while it served as communication central. We had not set out to develop an innovative solution—this was far from an innovation program—but ended up designing an innovative solution combining old and new technologies. The solution was the first of its kind and has since been replicated by others. Without proactive risk management and a focus on both the threats and the opportunities this serendipitous outcome would not have been possible.

This example also illustrates how project-level risks (both threats and opportunities) in aggregate can become program-level risks. All of the other component projects (nearly two dozen) could have successfully met their objectives, but if this project failed—protecting the POS device—the entire program would have failed. The organization would not have become PCI compliant in the required time frame. With PCI compliance there is no gray area: you are either fully compliant or you are not.

INNOVATION MANAGEMENT

We have identified multiple dimensions and categories of innovation and the associated continuum of change, ambiguity, uncertainty, and risk. We have also identified the primary elements of the innovation process, from defining the problem (empathy), ideating solutions to the problem (creativity), developing and implementing the solution (execution), to realizing the resulting benefits through adoption. Phillips (2012) elaborates on this life cycle and defines the corresponding activities:

- "Spotting trends to understand potential future needs and opportunities,
- Gathering customer insights, needs, and jobs to be done,
- Generating ideas based on these inputs,
- Managing, developing, and evaluating ideas,
- Prototyping and piloting ideas,
- Selecting the best ideas to commercialize,
- Converting ideas into new products and services,
- Launching new products and services" (p. 60).

Trott (2008, p. 14), reminds us that innovation is a broad concept and provides a comprehensive definition, a concept originally offered by Myers and Marquis in 1969:

> Innovation is not a single action but a total process of interrelated sub processes. It is not just the conception of a new idea, nor the invention of a new device, nor the development of a new market. The process is all these things acting in an integrated fashion.

This definition reinforces the complexity of managing the empathy, creativity, and execution phases required to successfully innovate. It also emphasizes the integrated management of these components. But given the dynamic nature of innovation, the question remains: Can innovation be managed? Some practitioners believe the answer is an emphatic "yes." Management is required to help ensure the right problem is identified (one that supports the strategic objectives of the organization), ideas are generated to address the need, and the right ideas are successfully executed and adopted in a consistent, repeatable manner. For others, "managed" is the equivalent of "controlled" or "constrained." How can you manage having a great idea? But innovation is not synonymous with creativity. Creativity is a necessary ingredient, but innovation ultimately requires execution; nearly every organization has far more ideas than it can conceivably act upon. Govindarajan (2010a) confirms this misperception about innovation:

> Usually, managers equate innovation with creativity. But innovation is not creativity. Creativity is about coming up with the big idea. Innovation is about executing the idea—converting the idea into a successful business.

But Govindarajan (2010a) also acknowledges the importance of creativity in the innovation process:

> We like to think of an organization's capacity for innovation as creativity multiplied by execution. We use "multiplication" rather than "sum" because, if either creativity or execution has a score of zero, then the capacity for innovation is zero.

In other words, without a well-defined problem and creative ideas to solve it, there is no innovation, and without execution, there is no innovation. An integrated approach must be taken to manage both the front end and the back end. Williams (2011) identifies the pros and cons of several innovation management approaches, including the familiar new product development phase-gate approach. Williams covers the fundamentals of the Stage-Gate® Model, the most popular new product development approach, as originally conceived by Cooper (1986).

As described by Williams (2011), the stage-gate approach is a linear, step-by-step process similar to the waterfall systems development life cycle. (The Stage-Gate® Model has since evolved into iterative, learning-based models and lighter approaches, as Williams describes.) The original Stage-Gate® Model, which can be leveraged to develop service offerings as well, establishes go/no-go decision points (gates) between the typical six product development life cycle stages:

1. Discovery—pre-work designed to discover and uncover opportunities and generate ideas;
2. Scoping—a quick, preliminary investigation and scoping of the project;
3. Build the Business Case—a much more detailed investigation involving market and technical research, leading to a business case (including product and project definition, project justification, and a project plan);
4. Development—the actual detailed design and development of the new product and the design of the operations or production process;
5. Testing and Validation—tests or trials in the marketplace, lab, and plant to verify and validate the proposed new product, and its marketing and production/operations; and
6. Launch—commercialization, beginning of full operations or production, marketing, and selling.

Williams (2011) points out the Discovery stage evolved after the original model was introduced. The Discovery stage focuses on creative problem solving and idea management concepts, the "fuzzy front end" of

innovation. Some practitioners view the entire innovation process through this lens. Other practitioners warn of putting too much emphasis on the early stages of the innovation process. Govindarajan and Trimble (2010b) confirm, in their research, far more emphasis is put on the energizing and glamorous ideation stage than the seemingly humdrum, behind-the-scenes detailed work of implementation and emphasize that:

> …most companies, in their efforts to improve innovation, focus entirely on the Big Idea Hunt. Focusing on ideas may unleash more immediate energy, but focusing on execution is far more powerful (p. 4).

Because the fuzzy front end is often seen as more glamorous, a significant amount of energy can be spent developing and soliciting ideas. The result is typically a surplus of ideas with varying degrees of merit, each of which must be assessed with responses prepared. Many innovation experts recommend that an idea management solution be put in place and ideas be managed like a portfolio. The result is that idea management—problem identification (empathy), idea generation (creativity), and idea screening (high-level business case)—and the idea portfolio become part of the overall innovation management ecosystem, integrated with portfolio management and program and project management. This approach also prevents the program and project portfolio from becoming a "suggestion box."

Williams (2011) recommends viewing innovation management as a "value chain" comprising the following elements to resolve the primary points of failure common to organizations seeking to innovate:

- Aligning the innovation approach to the overall organizational strategy
  - Strategic Alignment
- Review, selection, and management of multiple ideas
  - Portfolio Management
- Execution of individual initiatives within the portfolio
- Execution management (Program and Project Management)

Williams confirms the importance of these elements within the innovation management ecosystem and describes the improved model as the Innovation Portfolio Management Model (IPMM)®, developed by the American Institute for Innovation Excellence (AIIE).

Portfolio, program, and project management integrate with idea management and each other to add value to the innovation process, from

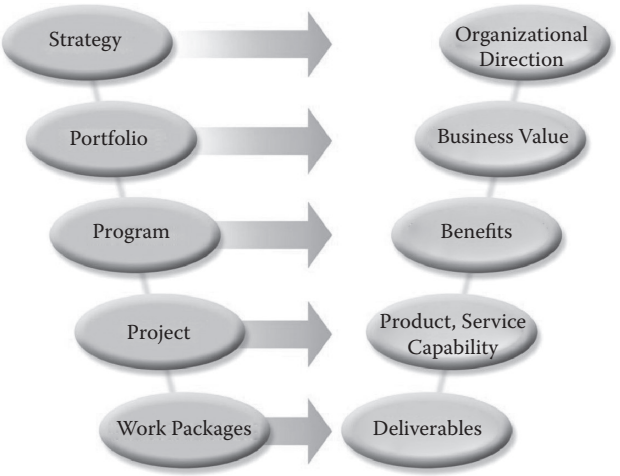


FIGURE 21.1
Portfolio, program, and project management value relationships.

organizational strategy to the discrete work packages and deliverables that are ultimately required, as illustrated in Figure 21.1. Program management effectively addresses the change, ambiguity, uncertainty, and risk inherent in the innovation process. Project management integrates with program management to produce the outcomes that contribute to the program's intended benefits. The outcome, in many cases, may be a failed prototype or experiment that can be leveraged for another attempt. Both of these capabilities integrate with change management to ensure that the program's outcomes and benefits can be adopted and sustained. And, finally, portfolio management integrates with program management to bridge the gap between organizational strategy and execution to ensure the right ideas are being pursued, and resources are being allocated to them.

Next we will explore how portfolio management supports the innovation process.

INNOVATION AND PORTFOLIO MANAGEMENT

Portfolio management is a continuous process that links organizational strategy to execution by matching investment and the allocation of resources to strategic objectives. Per Williams (2011): "Portfolio management enables organizations to identify, select and manage the investments

that will maximize business value by balancing the strategic fit, timing and sequencing, investment risk, operational capability and resource capacity" (p. 19). A quality business case, which starts at the ideation stage, is critical to assessing an initiative's fit within corporate objectives, measuring its projected benefits against investment requirements, uncovering potential risks, and identifying alternatives.

Organizational Context

The parameters used to assess initiatives and balance the organization's portfolio begin with the organization's mission. The organization's mission directs how the strategy is to be executed, which in turn defines how the organization's vision is to be achieved. Through a periodic strategic planning process, the organization's strategic objectives and performance targets are defined. Initiatives that sustain value are identified and assessed through operations planning and management. Initiatives that create value are identified and assessed during the portfolio planning and management functions.

The Project Management Institute (PMI®) in its *The Standard for Portfolio Management*, Second Edition (PMI®, 2008a) explains that "the ultimate goal of linking portfolio management with organizational strategy is to establish a balanced, executable plan that will help the organization achieve its goals" (p. 10). The organization's strategy is achieved by (PMI®, 2008a):

1. Maintaining portfolio alignment–Each initiative must be aligned with one or more strategic goals and reflected in the business case.
2. Allocating financial resources–The priority of each initiative guides financial allocation decisions.
3. Allocating human resources–The priority of each initiative also guides resource planning, hiring, training, and procurement efforts; the organization must have the capability to meet its objectives.
4. Measuring component contributions–The contribution of each initiative toward the strategic goals must be continuously measured.

"Operations" describes the day-to-day organizational activities, which may include production, manufacturing, finance, marketing, legal, information services, human resources, and other administrative services that

are essential to the organization (PMI®, 2008a). It is important that innovation program/project teams manage the relationship with the operational areas for two reasons:

1. The outcome and benefits of the innovation program must ultimately be transitioned to operational teams to sustain those benefits, and
2. Resources for the innovation initiative typically come from these operational areas, unless the capability must be procured externally.

The operational areas represent the organization's "performance engine." Relationship management requires proactive resource capability analysis and resource planning, as well as proactive, positive, and continuous stakeholder engagement and communication management. Govindarajan and Trimble (2010b) warn that "…the greatest strength of a Performance Engine—its drive for repeatability and predictability—also establishes its greatest limitations" (p. 12). The reason is that:

> By definition, innovation is neither repeatable nor predictable. It is exactly the opposite—non-routine and uncertain. These are the fundamental incompatibilities between innovation and on-going operations… Business organizations are not built for innovation, they are built for efficiency.

Lewis Lehro confirms the disconnect as he describes the early years at 3M, formerly Minnesota Mining and Manufacturing (Soken and Wenger, 2008, p. 162):

> Managing and innovation did not always fit comfortably together. That's not surprising. Managers are people who like order. They like forecasts to come out as planned. In fact, managers are often judged on how much order they produce. Innovation, on the other hand, is often a disorderly process. Many times, perhaps most times, innovation does not turn out as planned. As a result, there is tension between managers and innovation.

Lehro confirms the challenge of finding a balance between the uncertainty inherent in the innovation process and the order of existing business processes. Govindarajan and Trimble (2010b) stress that innovation leaders need the performance engine to perform many of the functions that they do not have the infrastructure or capability to do. Govindarajan (2010b) recommends that organizations adopt what he terms a "distinct-but-linked

organizational model" by creating a dedicated team for the innovation initiative with the processes and incentive necessary to partner with, rather than fight, the performance engine.

The performance engine often provides the required resources and capabilities for the innovation effort and may need to sustain the benefits resulting from the initiative. Once the organization decides that innovation is necessary to support the strategy, it is imperative that senior leaders provide the proper directives and authority to middle management and those on the front lines in order to execute the strategy. Innovation has to become a part of "business as usual" in order to secure the necessary resources and organizational capabilities and to transition the results to the organization for ongoing sustainment (and future improvements). Allen (2012) reinforces this concept:

> Strategy is less about the new, new thing than it is about actually delivering on the goals you set. A successful strategy must be translated into front-line activities that are delivered well, everywhere, every single day.

This is important to bear in mind during program and project execution. Innovation becomes business-as-usual when the capabilities and activities that enable innovation—fully aligned with strategic objectives—are executed routinely throughout the organization. Allen summarizes "…if you make your company's routine behavior mirror strategy, you can transform your business" (2012).

Portfolio Management

PMI® (2008a) describes portfolio management as the "centralized management one or more portfolios, which includes identifying, prioritizing, authorizing, managing, and controlling projects, programs, and other related work to achieve specific strategic business objectives" (p. 138). Portfolio management bridges the gap between the organization's strategic objectives and execution and can be envisioned as a funnel through which all requests for investment of the organization's resources must flow for evaluation.

Wright explains the five basic questions that must be answered for every initiative (2012, p. 2), see Figure 21.2.

These factors are continuously assessed for both new initiatives and initiatives that are in process. Monitoring of approved initiative performance

How does the project support key strategic initiatives?	Evaluates whether the project will help the company meet important short and long-term goals. Will this project advance those goals or will it be a distraction?
What is the project's financial rate of return?	Determines whether the project provides sufficient return to justify its investment. How does the project compare against other investment options?
What resources are needed to accomplish the project?	Assesses the level of financial and the people resources required to implement the project. Are these resources appropriate and available? Will they impact other initiatives?
What are the major risks to successfully implementing the project?	Highlights factors that could cause the project to miss its objectives as well as their likelihood of occurring. Can the risks be avoided or mitigated?
What are the alternatives?	Considers if cheaper, faster, and/or less risky alternatives to the proposed solution are available. What are their tradeoffs?

FIGURE 21.2
The five questions of portfolio management.

is an ongoing cycle supplemented by the portfolio, program, and project management governance processes of phase gate reviews. These phase gate reviews are similar to the new product development stage gate reviews and at some point in the life cycle are integrated. Both are decision points (go/cancel/hold) based on the information available at the time, including:

- Performance metrics—are key performance indicators still within the proper threshold?
- Viability of the solution—has the investment to date or expected return on investment been negatively impacted?
- Current risk profile—how likely is it that the solution can still be delivered?
- Availability of resources—does the organization still have the right resources available at the right time?
- Capability assessment—do we have the right knowledge, skills, and competencies?

Portfolio management serves two critical innovation management needs, according to Al-Ali (2003, p. 119):

1. Portfolio management enables the management of risks associated with innovation by diversifying the portfolio mix to include projects of varying levels of "innovativeness".
2. Portfolio management facilitates cultivation of the ability to get to market fast by presenting a snapshot of all the innovation projects across the organization, enabling allocation and shifting of human and financial resources to meet strategic priorities.

The next section provides a closer look at the key elements of portfolio management as it pertains to innovation.

Strategic Alignment

Williams (2011) stresses that: "the goal of any portfolio-based approach is to maximize the value of the overall portfolio and to balance the strategic fit, timing and sequencing, investment risk, operational capability and resource capacity" (p. 14). Johnson and Scholes (2005) define strategy as "the direction and scope of an organization over the long-term, which achieves advantage for the organization through its configuration of resources within a challenging environment, to meet the needs of markets and to fulfill stakeholder expectations" (p. 2). In short, strategy is the combination of things you need to do to get to where you are trying to go. Strategy is about positioning the organization for sustainable competitive advantage; helping ensure the long-term viability of the organization; making choices about which industries, projects, and services to deliver; and allocating resources to achieve a unique competitive position.

Organizations must recognize innovation is an enabler of strategy. Innovation strategy plays two roles, according to Al-Ali (2003, p. 120):

1. It helps define the areas in which new products (or services) will be introduced (i.e., the markets and segments in which they will compete).
2. It helps shape the mix of the innovation portfolio, and the way innovation is managed across the whole organization at the operational level.

If the organization does not recognize innovation as an enabler of strategy, innovation initiatives will quickly be dismissed at the strategic portfolio level. The innovation strategy must be communicated throughout

the organization to facilitate support for innovation initiatives, especially the layers of management that actually allocate resources, or they will be dismissed at the operational level.

Program management reinforces the continuous alignment of program objectives with strategic objectives and provides the necessary stakeholder, communication, and change management to help ensure the initiative's success.

Resource Allocation

Every organization has a finite amount of resources in terms of money, equipment, material, or labor. Portfolio management endeavors to match the demand for resources to the supply of resources. Ultimately, decision makers must balance the benefit of using those resources on the innovation program against the "lost" opportunity of applying the resources elsewhere. However, the opportunity cost of not developing an innovative solution must also be considered. What is the financial impact if the organization does not proceed? Can the organization survive without it?

Christensen (2011) provides a warning on the resource allocation process:

> Managing innovation mirrors the resource allocation process: Innovation proposals that get the funding and manpower they require may succeed; those given lower priority, whether formally or de facto, will starve for lack of resources and have little chance of success. One major reason for the difficulty of managing innovation is the complexity of managing the resource allocation process (p. 226).

The Enterprise Portfolio Management Council (2009, p. 9) describes three primary categories of resources:

1. Skills (availability of sufficient people with the right skills and experience)
2. Technology environment (the capacity of the computer systems or platforms to cope with the demands of the portfolio)
3. Facilities (physical infrastructure, networks, office space, real estate, and the like needed to deliver projects and that will be impacted by project outputs)

Each of these categories can be measured in money and are critical to the innovation process. Labor is affected by the capability and skills of that

labor. If the organization's human resources do not have the training or experience in a particular area of interest, the organization will have to outsource, partner with another firm, or invest to obtain it. The required technology, facilities, and equipment must also be available. The design and development of the first prototype or near production-quality product or service are only part of the story. Often, the much larger effort is to develop the infrastructure and capability to consistently produce and sustain the outcome. Multiple projects within the program may be required. In short, resources are not just people (and their skills, experience, and competencies). The organization's capabilities are an important factor to consider as well.

Although resources are allocated at the portfolio level, the resources must be procured at the program and project level. Special consideration is required to procure resources from the organization's performance engine. Wright (2012) emphasizes the need to quantify the resources (and skills/competencies) required across the entire program life cycle and reminds us that they must cover not only the initial investment but training and ongoing operational costs. Program management supports this approach through development of the program roadmap and the top-down and bottom-up estimating that is typically performed.

Portfolio Balance

Portfolio balance is achieved through the portfolio management governance function. Governance is accountable for investment decisions throughout the portfolio life cycle to identify opportunities, to select activities to fund, and to achieve performance targets by continuously (PMI®, 2008a):

- Selecting and funding the investment portfolio
- Monitoring and controlling portfolio investments
- Communicating decisions about the investment portfolio and constituent components within the portfolio
- Ensuring that the investment portfolio continues to align with strategic objectives

Levine (2005, pp. 95–98) provides an in-depth look at balancing the portfolio when an organization is pursuing transformational change and describes how the portfolio must be balanced across three segments of initiatives common in such as organization:

1. Maintenance and Utility initiatives—Generally support ongoing products and services that directly support business strategies and may include compliance-related initiatives. These types of initiatives always consume a certain percentage of the available resources required to sustain the performance engine.
2. Growth or Enhancement initiatives—Medium-to-high benefit aligned with the organization's strategy that support strategic initiatives and represent increased value. These initiatives generally keep the organization in a solid competitive position and typically are the largest percentage of resource consumption.
3. Transformation initiatives—Opportunities to move the organization to a new level or to introduce new products or services that could potentially dominate the marketplace. These initiatives are the most uncertain and require that the business case include most likely, potential upside, and potential downside scenarios. These initiatives exhibit a higher risk profile but can also provide higher reward, which would be expected of high risk investments.

Levine (2005, p. 98) warns "transformation projects may be 'bet the firm's future' projects" and "failure to select the right projects in this category will lead not only to failure of the project, but will also waste the monetary and human resources that could have been used for a better opportunity." But Levine also acknowledges that it is difficult to sustain business growth without innovative transformation projects, as demonstrated above.

PMI® (2008a, pp. 47–48) prescribes the following steps to achieve balance in the portfolio:

1. *Identify Components*—creating an up-to-date list of ongoing and new components that will be managed through portfolio management.
2. *Categorize Components*—organizing components into relevant business groups to which a common set of decision filters and criteria can be applied for evaluation, selection, prioritization, and balancing.
3. *Evaluate Components*—gathering information for the review of portfolio components in preparation for the selection process.
4. *Select Components*—developing a subset of the organization's components based on the organization's selection criteria that will be considered for further prioritization.

5. *Prioritize Components*—ranking components within categories according to established criteria for balancing the portfolio, including: strategic or funding category (e.g., innovation, cost savings, growth, maintenance, and operations); investment time frame (such as short-, medium-, and long-term); risk versus return profile; and organizational focus (such as customer, supplier, and internal).
6. *Balance Portfolio*—creating the component mix with the greatest potential to collectively support the organization's strategic initiatives and achieve strategic objectives, including the ability to plan and allocate resources (such as financial, physical assets, information technology assets, and human resources) according to strategic direction and the ability to maximize portfolio return within the organization's desired risk profile.

The portfolio is then authorized by allocating resources required to develop business cases or execute selected components. The allocation of resources to develop the business case is an important concept. In many organizations it is the "project before the project", involving scoping and developing a high-level business case for an idea or initiative, and often is not taken into consideration. For organizations with a continuous idea management process it can be a considerable effort.

The portfolio mix must be continuously assessed and rebalanced across strategic fit, timing, and sequencing; investment risk; operational capability and resource capacity; and understanding that transformational innovation projects may require special attention, including a range of risk versus reward scenarios.

Program management supports the ongoing assessment by providing performance metrics from the component projects and the program itself. Program management also helps maintain continuous alignment of the innovation initiative with the organization's strategy.

INNOVATION AND PROGRAM MANAGEMENT

Program management focuses on the definition, planning, execution, and control of the activities required to develop the product, service, or capability from the initial idea to introduction to the intended recipient. Project management integrates with program management to produce the outcomes required

for the innovation program to realize its intended benefits. Program management goes a step further by focusing primarily on the intended benefits and ensuring that those benefits remain at the highest level for the duration of the program (and component projects') life cycle. A key objective of program management is to ensure the results of the program are aligned with the organization's strategy, and the intended benefits can be realized and sustained.

Innovation initiatives require a cross-functional approach that involves resources from across the organization. Sirkin, quoted by Smith (2005, p. 9), states:

> Most people think of innovation only in terms of R&D or new product development—but taking an idea and turning it into cash is an effort that involves almost every part of a company. The challenge is thinking about and managing this extremely broad set of inter-related activity as a unified process.

Program management unites the disparate groups with a common objective, providing a roadmap to efficiently execute the multiple threads of activity and manage the dependencies between them. Program management also reinforces the stakeholder engagement and communication management critical to engaging the organization in the effort. The program manager becomes the catalyst to overcome the organizational inertia that may jeopardize the program.

These concepts form the basis of Govindarajan and Trimble's (2010a) prescription for successful innovation. Their first publication serves as a cautionary tale on the risks of assigning a single person to lead the innovation initiative and "go make it happen," an approach that ultimately leads to conflict with the rest of the organization. Govindarajan and Trimble recommend an approach with six specific steps across two broad objectives (2010a):

1. Build a dedicated team to perform any activities beyond the capabilities of the "performance engine."
2. Plan and frequently assess progress by designing and executing disciplined experiments.

In their follow-on publication, Govindarajan and Trimble (2010b) elaborate on the six steps to provide a more prescriptive guide to managing innovation initiatives. The authors stress the importance of building a

partnership with the performance engine to leverage the organization's capabilities—there are many functions that the performance engine, by its nature, can provide much more efficiently—and emphasize the importance of a rigorous learning process to develop the solution. The authors explain the job is to "discover what is possible (i.e., to learn) by converting assumptions into knowledge as quickly and inexpensively as possible" (p. 18) in order to make better decisions and get to a solution more quickly.

In short, innovation programs must strive for disciplined experimentation to convert assumptions and uncertainty into knowledge. Frequent decisions must be made whether to proceed with or abandon the experiment and try something else. Anthony (2012) recommends that the innovative organization develop a portfolio mindset and "have a Plan B or Plan C. What happens if two thirds of the things your organization is working on don't pan out? Make sure you have a backup option" (p. 64). The same principle applies to innovation *programs*. The program roadmap should be developed to ensure that alternatives are available if an experiment being conducted by a component project does not produce the expected results. A new hypothesis must be formed based on the results of the failed experiment, and another project must be quickly launched to start a new experiment.

With that backdrop we will explore program management and its various domains further.

Program Management

PMI® (2008b) describes program management as "the centralized coordinated management of a program to achieve the program's strategic benefits and objectives. It involves aligning multiple projects to achieve the program goals and allows for optimized or integrated cost, schedule, and effort" (p. 6). PMI® describes a program as "a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. … Programs are comprised of various components. Most of these components are the separate projects within the program…" (2008b, p. 5).

Managing multiple projects by means of a program allows for optimized or integrated cost, schedules, or effort; integrated or dependent deliverables across the program; delivery of incremental benefits; and optimization of staffing in the context of the overall program's needs. The

optimization and integration of these elements are critical to managing innovation initiatives, given their ambiguous and uncertain nature. PMI® (2006) describes the benefits of the program approach:

> Program management focuses on these project interdependencies and determines the optimal pacing for the program. This enables appropriate planning, scheduling, executing, monitoring, and controlling of the projects within the program. In essence, factors such as strategic benefits, coordinated planning, shared resources, interdependencies, and optimized pacing contribute to determining whether multiple projects should be managed as a program (p. 5).

The pacing of the component projects is an important concept for delivery of innovation initiatives. The deliberate pacing provided by the program planning process allows program activities to be sequenced in a manner that enables continuous learning and ensures an integrated result. Milosevic, Martinelli, and Waddell (2007) touch on this program/project relationship:

> The program management function links execution to strategy by integrating the deliverables and work flows of multiple interdependent projects to develop and deliver an integrated product, service, or infrastructure capability. This integrated solution becomes the means by which the strategic objectives are achieved (p. 9).

Program management adds value by taking a more holistic view, focused on delivering benefits. Ultimately, an innovation initiative is largely one of experimentation and learning, trying to find the best solution to support "the job to be done." The job to be done is an important concept illustrated by Christensen and Raynor (2003). The premise is that customers "hire" a product or service to do a job that has a social, functional, and emotional dimension. Listening exclusively to the customer (e.g., "voice of the customer" sessions) may not provide the insight necessary to develop an innovative solution (remember Henry Ford's alleged quote?). Defining the opportunity as a "job to be done" can lead to more creative solutions.

As McGinneva, quoted by Levitt (1986, p. 128) states to illustrate why people buy drill bits: "They don't want quarter-inch bits, they want quarter-inch holes." This concept is also a perfect illustration of the difference between requirements and benefits. The requirement reflects the need for a quarter-inch drill bit; the quarter-inch hole reflects the benefit to be

realized. Program management ensures that the focus is not exclusively on the product, service, or capability being created; the focus remains on the "job to be done" and how the recipient will benefit from the result.

Program Management Domains

In 2009–2010 PMI® conducted a Role Delineation Study (RDS) to identify and validate the essential job performance domains, tasks, knowledge and skills required for practice as a program manager. The resulting study outlined the domains of practice, specific tasks performed within the domains, and the knowledge and skills required to perform the tasks. The RDS, which is published as the *Program Management Professional (PgMP)® Examination Content Outline* (PMI®, 2011), comprises five domains of practice. *The Standard for Program Management*—Third Edition (PMI®, to be released in late 2012 or early 2013) is being developed in alignment with these domains.

Many of the benefits of managing an innovation initiative as a program have been explained over the course of this chapter, but a brief review of the domains and how they relate to innovation management is in order. The domains are (PMI®, 2011, p. 3):

1. Strategic Program Management—Identifying opportunities and benefits that achieve the organization's strategic objectives and maintaining alignment through program implementation.
2. Benefits Management—Defining, creating, maximizing, and sustaining the benefits provided by programs.
3. Stakeholder Management—Capturing stakeholder needs and expectations, gaining and maintaining stakeholder support, and mitigating/channeling opposition.
4. Governance—Establishing processes and procedures for maintaining proactive program management oversight and decision-making support for applicable policies and practices throughout the entire program life cycle.
5. Program Life Cycle—Activities related to the life cycle phases from definition of the program through execution and close.

The following is a brief overview of each domain and how it applies to innovation initiatives.

Strategic Program Management

The importance of strategic alignment has been covered in the portfolio management section. Portfolio management requires significant leadership attention to be effective. As a result, organizational "fatigue" can set in over time, and participants can start going through the motions rather than objectively evaluating alternatives. Program management provides the continuous alignment and performance monitoring necessary to ensure that benefits are realized as expected. Program management also reinforces strategic alignment by ensuring that the component projects and the program itself are still aligned with strategic objectives.

Strategic program management:

- Defines and aligns the program's vision, mission, and objectives with the organizational strategy through the portfolio management function
- Conducts environmental assessments and develops the program business case and program strategic plan
- Transforms the program strategy to a program roadmap and resulting program benefits and capabilities.

These elements, in turn, flow down to the component projects.

Benefits Management

PMI® (2008b) states that: "Programs and projects deliver benefits to organizations by enhancing current capabilities or developing new capabilities for the organization to use. A benefit is an outcome of actions and behaviors that provides utility to the organization" (p. 5). The Office of Government Commerce (OGC) defines a benefit as "a direct contribution to a strategic objectives. It describes an advantage accruing from the outcome" (OGC, 2007, p. 127).

One of the primary differentiators between program and project management is the concept of benefits management and realization. As indicated in the "job to be done" example above, benefits management ensures that the focus of the program is on the benefit to be delivered to the recipient rather than the specifications for a particular product, service, or capability; project management ensures that the resulting product, service, or capability has been created to the required specifications. This enables the

program to adapt as more information is learned, and the internal and external environment changes. It also ensures that preparations are made for the benefits to be accepted and sustained over time.

PMI® (2008b) notes the purpose of program benefits management is to focus the component projects on the outcomes and benefits that are to be generated over the program's life cycle. To do so, the program must continually:

- Identify and assess the value and impact of program benefits
- Monitor the interdependencies between the benefits being delivered by the component projects
- Analyze the impact of planned program changes on benefits and outcomes
- Assign responsibility and accountability for the realization of benefits provided by the program.

Benefits management is performed in parallel across the entire program life cycle and comprises the following phases as described below:

- *Benefits identification*—define the program benefits and the "job to be done"
- *Benefits analysis and planning*—define the benefits realization plan and program roadmap to determine how and when the benefits will be created, transitioned to operational areas, and sustained
- *Benefits delivery*—monitor the program and component project results during program/project execution to ensure that the benefits will be realized as planned
- *Benefits transition*—transfer resulting component project outcomes and program benefits to operations for ongoing support and sustainment.

Benefits sustainment is the final, ongoing phase. Benefits sustainment ensures that, before the program is closed, the responsibility for sustaining the benefits provided by the program are passed to the "performance engine", where the capability will continue to evolve through operational improvements, maintenance activities, enhancements, new projects, or other efforts.

Stakeholder Engagement

Stakeholder management—referred to here as stakeholder engagement since many stakeholders outside of the program team oppose the thought

of being "managed"—has been covered throughout this chapter as well. The important point to make here is that, although program-level stakeholder engagement is similar to project-level stakeholder engagement, the audience is much broader at the program level and often requires a different approach (as well as an increased ability to influence without authority). Ultimately, the innovation process benefits from engaging stakeholders at both the program and project levels to capture their needs and expectations, gain and maintain their support (especially the performance engine!), and address any opposition.

Stakeholders represent anyone who will be impacted by the program at both the program and project levels and often require direct and indirect communication targeted to their needs. Feedback must be continuously monitored for changes in "attitude" related to the program and component projects. This two-way communication helps ensure that program will deliver the benefits to the organization that the program was chartered to provide. It is critical the intended beneficiary—whether internal or external—also is taken into consideration throughout the program life cycle in order to facilitate acceptance and adoption.

An innovation program typically requires a cross-functional effort; subject matter experts from across the organization and, many times external to the organization, must be engaged in the effort. Effective stakeholder engagement and communication management are critical to engage the organization in the effort and ready the organization for the results. It bears repeating that managing productive, positive relationships with the operational areas is critical to:

1. Influence without authority in order to overcome objections, especially in relation to the allocation of resources.
2. Transition the outcome and benefits of the innovation program to operational teams to sustain those benefits.

Relationship management requires proactive resource capability analysis and resource planning, as well as proactive, positive, and continuous stakeholder and communication management.

Program Governance

The importance of governance has been covered in the portfolio management section. Both program and project management reinforce the

governance function by establishing the proper oversight in the form of governance boards (e.g., steering committees), advisory boards (to facilitate adoption and ensure that benefits are sustained), and phase gate reviews to determine whether the program should proceed. Phase gates reviews are also conducted in the same manner at the program level to determine whether component projects should proceed.

The relationship between the portfolio and program is cyclical. Strategic objectives, expectations, and constraints flow from the portfolio level to the program in early phases of the program (*initiating and planning*). Program level performance information flows from the program level to the portfolio in later phases (*executing, controlling, and closing*). Programs are comprised of projects so project performance information is aggregated from the projects. This bottom-up approach ensures the continuous evaluation of the investment at multiple levels (PMI®, 2008b).

Program governance also helps ensure that the program and component project outcomes are still aligned with the organizational strategy and that the business case for each component project is still valid.

Program Life Cycle Management

The program life cycle is similar to the project life cycle and is managed in parallel with the benefits management life cycle. The program life cycle includes the following:

- Defining the program and component projects
- Defining the program's scope and planning the program activities and component projects, including the program roadmap and pacing
- Executing the program activities and component projects to achieve the program's objectives and deliver the program's benefits
- Monitoring and controlling program and component project progress and proactively managing risk events
- Finalizing all program activities, including all component projects, executing the transition plan, and preparing the operational areas to maintain the program results.

Whereas the benefits management life cycle focuses on the delivery of the program benefits, the program life cycle focuses on the execution of the activities required to successfully complete the component projects and

maintain program performance. During a program's life cycle, projects are initiated, and the program manager oversees and provides direction and guidance to the project managers. Program managers coordinate efforts between projects but do not manage them. An essential program management responsibility is the identification, rationalization, monitoring, and control of the interdependencies between projects; dealing with the escalated issues among the projects that comprise the program; and tracking the contribution of each project and the non-project work to the consolidated program benefits (PMI®, 2008b).

The component projects are performed in the delivery of the program benefits phase after the program has been initiated and planned; component projects, which may deliver incremental benefits, are also closed during this phase. After all of the component projects have been completed and closed, the program benefits are transitioned to the necessary operational areas where the benefits are sustained for the long term.

INNOVATION AND PROJECT MANAGEMENT

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements within the constraints of time, cost, scope, and quality while proactively managing risk. Projects focus on delivering specific outputs through a temporary endeavor. Programs themselves do not produce the intended products, services, or capabilities. Component projects produce the outputs that, when combined, provide the intended benefits. Component projects may also provide incremental benefits by producing an initial version of a product, service, or capability that can be utilized by the intended recipient and continue to develop over time. In the innovation context, a project may not produce anything of value other than the lessons learned from a failed experiment or prototype. But these lessons learned also are a valuable outcome to the overall program.

Providing incremental benefits is similar to the concept of "fail fast" taken to market. This approach has been popularized by Reis (2011). Although Reis's approach is directed at startup companies, the concepts apply equally as well to innovation initiatives, which are to eliminate waste—if it does not add value do not do it—and to leverage iterative

development methodologies to provide only the bare minimum, and then use customer feedback and experimentation to build additional features over time.

Similar to the relationship between the portfolio and a program, the relationship between the program and a project is cyclical. Strategic objectives, expectations, and constraints flow from the program level to the project in early phases of the project *(initiating and planning)*. Project level performance information flows from the project level to the program in later phases *(executing, monitoring and controlling, and closing)*. Projects are comprised of tasks so project performance information is aggregated from the tasks. This bottom-up approach ensures the continuous evaluation of the investment in the program (PMI®, 2008b).

Specifically, programs provide project goals and objectives, requirements, timelines, resource allocations, and constraints to the component projects. These parameters are translated into project scope, schedule, and budget based on initial estimates of (human and financial) resource requirements. Component projects then provide performance updates to the program level, including: project status, cost performance, budget and schedule updates, change requests and approved changes (project level change control is performed in addition to change control at the program level), escalated issues and risks, and corrective actions.

Research by Stretton (2012, p. 3) reveals the primary reasons that projects may be interdependent and be managed as a program:

- The collective capability delivered by the program.
- They may share a common attribute such as client, customer, seller, or technology.
- There are interdependencies of tasks among the projects.
- Resource constraints may affect projects within the program.
- Risk mitigation activities may impact the direction or delivery of multiple projects.
- A change in organizational direction may affect the work of projects and their relationships to other projects and work.
- There are key escalation points for issues, scope changes, quality, communications management, risks, or program interfaces/dependencies.

Continuous monitoring is required to determine whether the project is still a worthwhile investment. Negative scope, cost, or schedule performance at the project level may invalidate the business case and why the

initiative was approved in the first place. If a critical project schedule slips, it may delay the entire program, and the outcome may not be the first to market. If the estimated cost is exceeded, the business case may no longer support the initiative or at least that particular component of the program. If the required scope is not provided, the outcome may not be viable in the marketplace or support the business case. In the innovation context, it is imperative that, if the project is going to fail, it fails quickly in order to limit the exposure to the organization and allow the program to proceed with an alternative approach.

We have covered throughout this chapter the interplay between portfolio, program, and project management. It is assumed that the fundamentals of project management are familiar to the reader. Traditional project management requires integrated initiating, planning, controlling, executing, and monitoring and controlling processes across the nine familiar knowledge areas (PMI®, 2008c):

1. Project integration management
2. Project scope management
3. Project time management
4. Project cost management
5. Project quality management
6. Project human resource management
7. Project communications management (*includes stakeholder management*)
8. Project risk management
9. Project procurement management

Although each of these knowledge areas is critical to the success of the component project, depending on the nature of the project, activities within some knowledge areas may not be required. Project scope, time, cost, and quality management deserve special attention as they form the baseline parameters for the project, the well-known "triple constraint" to which quality has been added as a fourth parameter. Although the trade-offs demonstrated by the triple constraint are a basic concept, the stakes can be higher in the context of innovation, especially if the organization's survival depends on it. The project manager must proactively manage uncertainty and risk, as well as many other factors, to avoid changes in these parameters; the viability of the project outcome and its acceptance may be impacted as a result.

In essence, project managers must control change, whereas program managers must embrace change. Conditions may change and alter the course of the program. In response, projects may have to be canceled, modified, or defined and launched in order to deliver the intended benefits. Project managers cannot be expected to make decisions that jeopardize their project or cause it to fail. Program managers must be able to do so.

Although, again, there are some practitioners who insist that innovation cannot be managed, they are generally describing the ideation phase, something such as "you cannot manage coming up with a great idea." But, as it is with most endeavors, there are explicit and/or implicit deadlines. Hale (2009, NASA Blogs) illustrates why the discipline imposed by project management is critical for innovation initiatives:

> Having a better idea, adding just one more function, tweaking the design through just one more iteration—all of these things are wonderful, marvelous, the very life-breath of a successful project—right up until the point where they kill the project by driving it way over budget, way behind schedule, or into an endless technology development cycle.

In the rapidly changing world, bringing an idea to fruition must occur within weeks, rather than months or years. If the organization's strategy is to develop the next generation of the smart phone, and the team is given two years to do so, the end result may seem quite antiquated at the time it comes to market. With an effective, sustainable innovation management ecosystem, such an initiative would be a non-starter.

SUSTAINABLE INNOVATION

Sustainable innovation requires that the organization develop an innovation management ecosystem to manage the entire innovation process, from defining the problem (empathy), ideating solutions to the problem (creativity), developing and implementing the solution (execution), to realizing the resulting benefits through adoption. Phillips (2012, p. 60) elaborates on this life cycle and defines the corresponding activities including:

- "Spotting trends to understand potential future needs and opportunities,
- Gathering customer insights, needs, and jobs to be done,
- Generating ideas based on these inputs,
- Managing, developing, and evaluating ideas,

- Prototyping and piloting ideas,
- Selecting the best ideas to commercialize,
- Converting ideas into new products and services,
- Launching new products and services."

This ecosystem may have its underpinnings in a new product development phase gate methodology or another methodology. The ideal solution has to cover the entire spectrum and provide an integrated approach from beginning to end, the fuzzy front end through adoption and continuous improvement.

Many innovation experts recommend that an idea management solution be put in place and that ideas be managed like a portfolio. The result is that idea management—problem identification (empathy), idea generation (creativity), and idea screening (high-level business case)—and the idea portfolio become part of the overall innovation management ecosystem, integrated with portfolio management and program/project management to create an "innovation value chain," as defined by Williams (2011).

The organization must also develop its portfolio, program, and project management capabilities in order to sustain innovation. Portfolio, program, and project management integrate with idea management and each other to add value to the innovation process, from organizational strategy to the discrete work packages and deliverables that are ultimately required.

Program management effectively addresses the change, ambiguity, uncertainty, and risk inherent in the innovation process. Project management also addresses the change, uncertainty, and risk, but at a different level. Project management also integrates with program management to produce the outcomes that contribute to the program's intended benefits. Both of these capabilities integrate with change management to ensure that the program's outcomes and benefits can be adopted and sustained. And, finally, portfolio management integrates with program management to bridge the gap between organizational strategy and execution to ensure the right ideas are being pursued, and resources are being allocated to them.

SUMMARY

This chapter has strived to provide insight on the questions posed in the introduction: What exactly is innovation? Can innovation be managed? And, more importantly, can innovation become a consistent, sustainable capability?

In response, we have identified the purpose of innovation and defined the various dimensions, categories, and types of innovation and why it is not synonymous with creativity and invention. We have identified multiple dimensions and categories of innovation and the associated continuum of change, ambiguity, uncertainty, and risk. We have also identified the primary elements of the innovation process, from defining the problem (empathy), ideating solutions to the problem (creativity), developing and implementing the solution (execution), to realizing the resulting benefits.

We have discussed various innovation management methods and provided comments from some innovation thought leaders on the topic. We have learned that innovation management requires an integrated ecosystem of multiple capabilities, from idea management to portfolio, program, and project management.

We explored how program management, coupled with portfolio management and project management, enables the innovation process and how these capabilities integrate to create value and help eliminate the barriers to innovation:

- Program management effectively addresses the change, ambiguity, uncertainty, and risk inherent in the innovation process.
- Project management integrates with program management to produce the outcomes that contribute to the program's intended benefits.
- Both capabilities integrate with change management to foster adoption.
- Portfolio management integrates with program management to bridge the gap between organizational strategy and execution and ensure that the right ideas are being pursued.
- Portfolio management also ensures that the proper resources are being allocated (although the program manager still has to procure the resources).

And, finally, we reviewed how this innovation management ecosystem enables a consistent, sustainable process. Although this chapter has referenced "markets" and commercial entities, the information is extendable to other industries and initiatives. To close out the chapter, consider some of the benefits of a sustainable innovation management ecosystem, as defined during an interview with Markgraf (e-mail communication, February 22, 2012), including the benefits of a mature program management capability:

- Provide a consistent, repeatable process to take a concept from idea to adoption, resulting in more effective and efficient innovation initiatives.
- Help create and enable a sustainable technical competitive advantage that increases growth and productivity.
- Ensure the technology plan supports the organization's strategies and provides competitive advantage.
- Identify opportunities to optimize the company's investments at the enterprise level using efficient, effective processes.
- Provide an opportunity to create a "single culture" in sharing knowledge and perspectives across the enterprise.
- Promote the sharing of strategy information between the organizational domains and foster the sharing of ideas.
- Encourage a close relationship between innovators and program/product development to improve the visibility of new innovations that further enable strategy, capabilities, and program success.
- Promote technical excellence and innovation in the products, services, and capabilities developed for external customers.
- Encourage and recognize people that contribute to the success of programs through innovative solutions.
- Partner with suppliers on the use or development of technologies that together provide an outcome that normally could not be achieved.
- Promote trade studies as part of the program's research and development (R&D) cycle to identify and select the best use of technology solutions.
- Set high expectations as program managers that encourage people to meet challenging goals and require innovative solutions to achieve superior performance.
- Act as a bridge between business development, R&D, sales and marketing, company needs, and supplier capabilities.

All the best to you in your journeys!

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Organizational Maturity: Managing Programs Better

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INTRODUCTION

We are aware of the various maturity models, and some of them are very specific to project and program management as well. Before we can drill down to the specific maturity model contributing directly to the assessment and improvement of program management, we need to understand the concept of organizational maturity as a broader concept. This is required not only to cast away some stereotype beliefs but also to have a strategic view of maturity. Program management, being closer to organizational strategy, by way of its focus on benefits management and having its own program strategy, it is only befitting to lead it to a generic organizational maturity, rather to a pre-conceived and tailor-made maturity model, making program management fit into it.

Ludden, Coates, and McGarry (2004) quote the definition of maturity from the *Random House Dictionary* as "full development or a perfected condition." Maturity is defined as "full development" (Merriam-Webster, 1997, p. 456). When someone is not fully developed or in perfect condition, anything which can be achieved seems like increased maturity, and we tend to gauge various levels of maturity with different methods. An organization is a living entity like a human being. It has a lifespan, and it must grow over a period of time. It has to learn from its mistakes, or it seeks lessons from other's mistakes or best practices. All organizations are at some stage of maturity striving to attain perfection. So considering their present state of maturity we can say their journey forward to perfection is a step further toward achieving maturity. We usually forget that there must have been some limits to maturity. There must be an optimum level for an organization beyond which it cannot grow anymore and thus cannot mature

any further, or it will fall like an over-ripe fruit. This is discussed briefly toward the end of this chapter and gives us all food for thought to put some limits to an un-ending enthusiasm toward maturity (Iqbal, 2005).

Whenever maturity of an organization is under discussion, different people view it from different points of view. Where people inclined toward quality will refer to the Capability Maturity Model (CMM), people focused on process will be talking about the Process Maturity Model (PMM), and yet project managers look at it from the Project Management Maturity Model (PMMM) and Organization Project Management Maturity Model (*OPM3*®) perspective. All of these people are talking about a maturity model, but none have formulated a universally acceptable definition of maturity as such. From a strategic point of view, if we can combine all these viewpoints and try to find how an organization really matures, we probably will be able to find the most appropriate maturity model.

To this day, all approaches fail to provide an acceptable shared definition of maturity, and literature is yet to propose a comprehensive approach, which is much needed for practical applications at strategic organizational levels. The objective of this chapter is threefold. First, it reviews the literature to find synergies among different organizational maturity models in order to propose a common definition. A second goal is to use the common key concepts to formulate a uniform standard of organizational maturity. The longer-term goal is to alleviate the theoretical shortcomings that have prevented the development of a more generally accepted organizational maturity model. After having discussed the possible maturity models, it would be proved that the ideal organizational maturity model indicated in this chapter does not really exist as such except in Utopia, but there is enough reason to believe that such a maturity model needs to be conceived. We can discuss, in light of existing maturity models, and with an idea of organizational maturity at the back of our mind, how it would apply to program management to yield maximum benefit to program management professionals.

CMM: FROM WHERE IT ALL STARTED

Maturity models are not a new concept. Crosby (1979) developed a Quality Management Maturity Grid in which he described five stages of maturity (Levin and Ward, 2012).

The CMM was the pioneer of maturity models developed by the Software Engineering Institute (SEI) for software engineering (Paulk et al., 1995). Most maturity models owe their existence to the work of the SEI of Carnegie Mellon University. Beginning in the late 1980s, the SEI began the development of an assessment framework to evaluate vendors of software solutions for the US Department of Defense. What is generally referred to as the 'Capability Maturity Model' (CMM) actually consists of five different maturity models plus an integration framework, which provides a means of evaluating various different aspects of the software production process (Mullaly, 2005).

Later the SEI developed the CMMI (Capability Maturity Model Integration) and P-CMM (People Capability Maturity Model). The CMM model is primarily concerned about the software processes and tries to develop a mechanism to bring perfection to these processes. It has five levels namely: initial, repeatable, defined, managed and optimizing, each level having its own key process areas (KPAs) identifying issues that must be addressed to achieve a maturity level (Ludden, Coates, and McGarry, 2004). The CMM levels are broadly accepted in the software industry, and almost all maturity models are trying to emulate the same leveling mechanism in one way or the other. It is clearly imminent by the wide use and success of the CMM in the software industry that it does serve to improve quality, but the problem is that the base on which it was designed came from software industry, and it hinges only on software processes. Just as the CMM was becoming so popular, and other industries were eyeing the software industry with anguish for having the CMM, the SEI released a generalized version namely the CMMI in 2000. It was later updated in 2002, 2006, and 2009, and is now generally referred as CMMI-Development or CMMI-DEV (latest version 1.3), with a focus on integrating software and systems engineering. It was followed in 2007, by a CMMI-Acquisition or the CMMI-ACQ model (latest version 1.3), emphasizing the acquisition process. In 2009 the CMMI-Services or CMMI-SVC (latest version 1.3) was released, focused on service organizations since the development of quality service processes leads to improvements in performance, customer satisfaction, and overall profitability (Phillips and Shrum, 2010). Although the levels for all of these models are the same, the processes have been slightly tailored to address specific orientations. It still serves to improve the quality, which though is extremely useful, but misses the

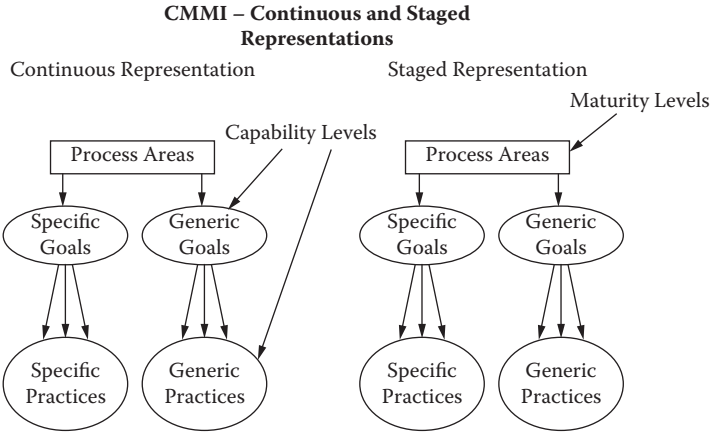


FIGURE 22.1
CMMI: Continuous and staged representations.

point to having organizational maturity because quality or processes are not the only ingredients contributing toward an organization's maturity. The CMMI has done a great job in encompassing all possible areas contributing to organizational maturity. In the process it has given special attention to project management by adopting the Project Management Institute's (PMI®) standards in the CMMI and using the same terminology. The People Capability Maturity Model or P-CMM (latest version 2.0) is also a SEI maturity model with a focus on people competency development and human resource capability improvement, and thus was again addressing a specific view (Iqbal, 2005).

All CMMI models have three parts: an introduction, the process areas and generic goals and practices, and the appendices. All CMMI models contain multiple process areas that each has a purpose statement, one or more goals, and multiple specific practices. They all have generic goals and practices that apply to all process areas, see Figure 22.1.

All CMMI models share 16 core process areas tailored for each model but contain essentially the same information. These process areas include practices that cover concepts in project management, process management, infrastructure, and support. These basic concepts are fundamental to process improvement in any area of interest (i.e., acquisition, development, or services). The core process areas of each model express these concepts in the context of that area of interest. In addition to the core process areas, each model also includes process areas found only in that model.

CMMI Model Foundation (16 Core Process Areas)

1. Causal Analysis and Resolution (CAR)
2. Configuration Management (CM)
3. Decision Analysis and Resolution (DAR)
4. Integrated Project Management (IPM)*
5. Measurement and Analysis (MA)
6. Organizational Process Definition (OPD)
7. Organizational Process Focus (OPF)
8. Organizational Performance Management (OPM)
9. Organizational Process Performance (OPP)
10. Organizational Training (OT)
11. Project Monitoring and Control (PMC)†
12. Project Planning (PP)‡
13. Process and Product Quality Assurance (PPQA)
14. Quantitative Project Management (QPM)§
15. Requirements Management (REQM)
16. Risk Management (RSKM)

Process areas found only in CMMI for Acquisition:

1. Acquisition Requirements Development (ARD)
2. Solicitation and Supplier Agreement Development (SSAD)
3. Agreement Management (AM)
4. Acquisition Technical Management (ATM)
5. Acquisition Verification (AVER)
6. Acquisition Validation (AVAL)

Process found only in CMMI for Development

1. Product Integration (PI)
2. Requirements Development (RD)
3. Requirements Management (REQM)
4. Supplier Agreement Management (SAM)¶
5. Technical Solution (TS)

---

* Integrated Work Management (IWM) in CMMI-SVC
† Work Monitoring and Control (WMC) in CMMI-SVC
‡ Work Planning (WP) in CMMI-SVC
§ Quantitative Work Management (QWM) in CMMI-SVC
¶ Supplier Agreement Management (SAM) is shared between CMMI-DEV and CMMI-SVC

6. Validation (VAL)
7. Verification (VER)

Process areas found only in CMMI for Services

1. Capacity and Availability Management (CAM)
2. Incident Resolution and Prevention (IRP)
3. Supplier Agreement Management (SAM)¶
4. Service Continuity (SCON)
5. Service Delivery (SD)
6. Service System Development (SSD)
7. Service System Transition (SST)
8. Strategic Service Management (STSM)

The models also contain generic goals and generic practices that apply across multiple process areas. They describe the characteristics that must be present to institutionalize processes that implement a process area. All generic goals and generic practices are internally consistent and apply to every model.

The staged approaches use maturity levels to show the state of the organization's processes as a whole, while the continuous approach uses capability levels to characterize the state of the organization's readiness in an individual process area.

The CMMI model is applicable to project management as its Levels 2 and 3 focus on it extensively. Level 2, for example, emphasizes requirements management, project planning, project management and control, supplier agreement management, and configuration management, with Level 3 including a focus on requirements development, integrated project management, and risk management, among other areas (SEI, 2000).

OTHER EXISTING MATURITY MODELS

Ludden et al. (2004) opine that CMM has been reused for the development of many other maturity models in many fields including project management. Since the original development of the CMM for software, many other organizations have developed maturity frameworks to support different industries and disciplines, not least of which is project management

(Mullaly, 2005). According to Cooke-Davies, Schlichter, and Bredillet (2001), there are estimated to be over 30 maturity models serving the marketplace. Rosenstock, Johnston, and Anderson (2000) listed 23 capability maturity model resources that covered quality and project management. Currently there are approximately 50 different maturity models in circulation, and each addresses a specific aspect of the organization. The list has been taken from Copeland (2003) and has been updated to specially highlight 17 maturity models related to project, program and/or portfolio management (bold and italic from numbers 9 to 23). It follows:

1. Capability Maturity Model for Software (SW-CMM)
2. Capability Maturity Model Integration—Acquisition (CMMI-ACQ)
3. Capability Maturity Model Integration—Development (CMMI-DEV)
4. Capability Maturity Model Integration—Services (CMMI-SVC)
5. People Capability Maturity Model (P-CMM)
6. Integrated Product Development Capability Maturity Model (IPD-CMM)
7. IT Service Capability Maturity Model (IT Service CMM)
8. Business Excellence Model, European Foundation for Quality Management (EFQM)
9. **Project Management Maturity Model (PMMM or KPM3) by Harold Kerzner, IIL**
10. **Project Management Maturity Model (PMMM) by J. K. Crawford**
11. **Portfolio Management Maturity Model by J. K. Crawford**
12. **Berkeley Project Management Process Maturity Model PMPM or (PM)2 by Young Hoon Kwak and C. William Ibbs**
13. **Organizational Project Management Maturity Model (*OPM3*) by PMI®**
14. **PRINCE2 Maturity Model by OGC, UK**
15. **Portfolio, Programme, and Project Management Maturity Model (P3M3) by OGC, UK**
16. **ProjectFRAMEWORK™ Project Management Maturity Model by ESI International**
17. **ProgramFRAMEWORK™ Program Management Maturity Model by ESI International**
18. **PortfolioFRAMEWORK™ Portfolio Management Maturity Model by ESI International**

19. **Programme Management Maturity Model by Russ Martinelli and Jim Waddell**
20. **Cultural Project Management Effectiveness Model (CPMEM) by PMGS**
21. **IMSI Project Management Assessment Model by Steve J. Holmes and Robert T. Walsh**
22. **Project Portfolio Management Maturity Model by James S. Pennypacker, PM Solutions**
23. **Project Risk Maturity Model (RMM) by Martin Hopkinson, QinetiQ, UK**
24. Risk Maturity Model by David Hillson
25. Earned Value Management Maturity Model (EVM3) by Ray W. Stratton, Management Concepts
26. Broccoli Maturity Model
27. Services Maturity Model
28. Self-Assessment Maturity Model (SAMM)
29. Testing Maturity Model (TMM)
30. Web Services Maturity Model
31. Security Maturity Model (SMM)
32. Operations Maturity Model
33. e-Learning Maturity Model
34. eGovernment Maturity Model
35. Outsourcing Management Maturity Model
36. Change Proficiency Maturity Model
37. Performance Engineering Maturity Model
38. IT Architecture Maturity Model
39. Information Process Maturity Model
40. Learning Management Maturity Model (LM3)
41. Automated Software Testing Maturity Model
42. Website Maturity Model
43. Internet Maturity Model
44. Usability Maturity Model
45. Software Reliability Engineering Maturity Model
46. System Security Engineering Capability Maturity Model
47. Configuration Management Maturity Model
48. Common Assurance Maturity Model (CAMM)
49. Business Development CMM by Nutt, Kessler, and Levin
50. Organizational Maturity Model by HP

PROJECT MANAGEMENT MATURITY MODELS

With the strong realization of the budding discipline of project management, a new understanding was developed, which was of establishing a link between strategies of an organization to its projects. This was very romantic in the sense that all changes in an organization can actually be brought either through strategy or projects. The CMMI was addressing only processes without specifying whether the processes are operational or project related. Generally it was assumed that it applies to all processes. But the interesting point here is that an operational process tested for maturity, if it needs improvement, it must go through a change process, which leads to a project. Quality has an equally important role in project management, and even the CMMI can very smoothly apply it, but there was a need for some further deliberation. With opening of this new line of thinking, a number of project management maturity models were suggested, used, and tested, but it opened up another unending list of maturity models, this time related to project management. Project management has its own level of development in an organization like projects, programs and portfolios, which also are indicative of some level of maturity.

Where Peterson (2000) sees project management maturity model as a logical framework that defines different levels of project management capability, Hillson (2001), being a risk management expert, views it as providing a structured route to excellence in project management. Kerzner (2001, p.41), referencing strategic planning and its relation with project management, states the model should assist companies in performing strategic planning for projects. Johnston (2003) also supports Kerzner's view of strategic planning by highlighting that firms are recognizing the value of establishing measurements and indicators that provide a perspective on overall performance against strategic objectives. It is generally agreed that project management maturity models must provide an assessment framework that enables an organization to compare its project delivery with best practice or against its competitors (Hillson, 2001).

Levin and Ward (to appear in 2012) provide a comprehensive introduction to project management maturity models as follows:

> The Project Management Institute (PMI®, 2003) defines a maturity model as "a conceptual framework, with consistent parts that defines maturity in the area of interest… it also may describe a process whereby an

> organization can develop or achieve something desirable… this process can result in a more highly evolved organizational state; in other words, a more mature organization" (p. 5). Capability Maturity Models (CMM) "attempt to define industry practices that correlate with increasing levels of process maturity. The resulting CMMs seek to provide (a) an industry standard or 'framework' by which relative maturity can be assessed, (b) a clear path to evolve processes to achieve increasing mature states, and (c) specific guidance on best practices and their applicability and implementation" (Nutt, Kessler, and Levin, 2003, p. 11).

Organizational project management (*OPM*) (to include programs and portfolios) according to PMI® (2008b) then is "the systematic management of projects, programs, and portfolios in alignment with the organization's strategic business goals" (p. 9). The emphasis is to ensure that the programs and projects under way are reflective of the organization's overall strategic goals and objectives and also that the portfolio management process continues to serve these goals and objectives and remains relevant as shown in Figure 22.2.

While it is true that the CMM includes project management as one of the capability areas that it evaluates, it addresses only a subset of the project management discipline. The majority of independent project management maturity models are designed to be on some level transparent with respect to industry and the underlying technical disciplines being managed (Mullaly, 2005).



FIGURE 22.2
Organizational Project Management (*OPM*). (From Project Management Institute (2008). *Organizational project management maturity model (OPM3®)*, second edition. Newtown Square, PA: Project Management Institute.)

Segregating only the maturity models dealing with projects, programs and portfolios, we have a list of 17 such maturity models, which are separately listed here.

1. Project Management Maturity Model (PMMM or KPM3) by Harold Kerzner, IIL
2. Project Management Maturity Model (PMMM) by J. K. Crawford
3. Portfolio Management Maturity Model by J. K. Crawford
4. Berkeley Project Management Process Maturity Model PMPM or (PM)2 by Young Hoon Kwak and C. William Ibbs
5. Organizational Project Management Maturity Model (*OPM3*) by PMI®
6. PRINCE2 Maturity Model by OGC, UK
7. Portfolio, Programme, and Project Management Maturity Model (P3M3) by OGC, UK
8. ProjectFRAMEWORK™ Project Management Maturity Model by ESI International
9. ProgramFRAMEWORK™ Program Management Maturity Model by ESI International
10. PortfolioFRAMEWORK™ Portfolio Management Maturity Model by ESI International
11. Programme Management Maturity Model by Russ Martinelli and Jim Waddell
12. Cultural Project Management Effectiveness Model (CPMEM) by PMGS
13. IMSI Project Management Assessment Model by Steve J. Holmes and Robert T. Walsh
14. Project Portfolio Management Maturity Model by James S. Pennypacker, PM Solutions
15. Project Risk Maturity Model (RMM) by Martin Hopkinson, QinetiQ, UK
16. Risk Maturity Model by David Hillson
17. Earned Value Management Maturity Model (EVM3) by Ray W. Stratton, Management Concepts

The first three maturity models, developed by Kerzner, Crawford, and Kwak/Ibbs, are specific to project management and are flat models developed on the lines of the CMM. Similarly, several other models in this list are staged just like CMM and have three to six levels. Such models may be simple to understand and implement but being one-dimensional, would only serve one direction or aspect, and definitely not the multi-disciplinary organizational maturity. *OPM3*® is probably the only model, which has

used a novel approach of addressing the maturity issue from three different dimensions, and therefore makes much more sense. Still it addresses only projects, programs and portfolios and not strategy or operations of an organization. On the other hand the CMM by the SEI addresses a lot of areas even including project management (and not program or portfolio management) but in a traditional flat structure of stages or levels.

Out of the 17 models listed, at least four maturity models do exist which take into account the program management maturity to some extent. *OPM3*® naturally leads this group followed by OGC, ESI, and Martinelli and Waddell. Out of these four program management maturity models (*OPM3*®, P3M3, ESI, and Martinelli/Waddell), only *OPM3*® is multidimensional as indicated earlier. On the portfolio side, at least two of the models (ESI and PM Solutions) on the long list specifically address portfolio management maturity, and the IMSI Project Management Assessment Model, shows portfolio management as one of the levels (Level 4) of project management maturity. We have two models that deal with risk management maturity and one for earned value management.

Project Management Maturity Model (PMMM or KPM3) by Harold Kerzner, IIL

Kerzner, in 2001, developed a five-stage Project Management Maturity Model (PMMM) also known as KPM3, see Figure 22.3. While in Level 1, he emphasizes on establishing a Common Language for consistency, Level 2 focuses on Common Processes to make the processes repeatable. In Level 3, Kerzner debates about the need for a Singular Methodology as process control can be facilitated, while in Level 4 he suggests Benchmarking where an organization needs to benchmark with other companies to maintain a competitive advantage. The last level is Level 5, which emphasizes Continuous Improvement, see Figure 22.3.

As it is clearly imminent, that this maturity model may just be indicative for its use in program management, but cannot be said to have been designed only for that specific purpose. So will be the case with some of the subsequent maturity models discussed.

Project Management Maturity Model (PMMM) by PM Solutions

The PM Solutions PMMM, with five levels of maturity is designed more closely in syntax to the CMMl and used the nine Knowledge Areas of

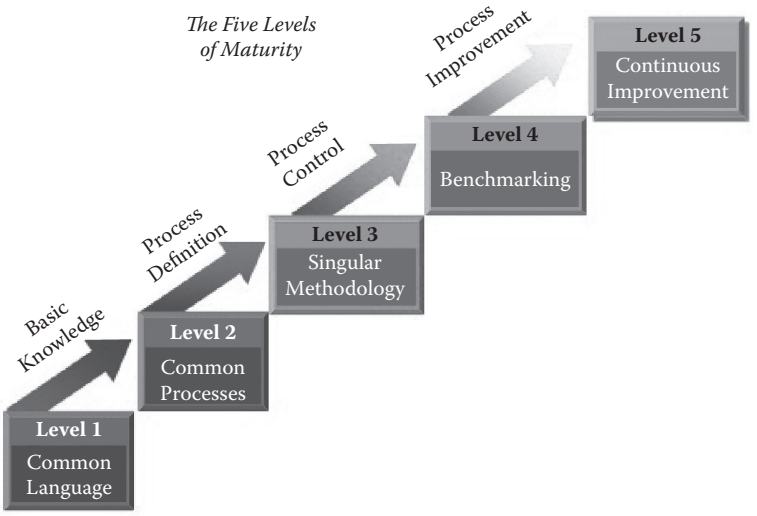


FIGURE 22.3
Harold Kerzner's project management maturity model. (From Kerzner, H. (2001). *Strategic planning for project management using a project management maturity model*. Hoboken, NJ: John Wiley.)

PMI's PMBOK® Guide (PMI®, 2008a) to ascertain maturity in each area. The levels of project management maturity used are as follows:

1. Level 1—Initial Processes
2. Level 2—Structural Process and Standards
3. Level 3—Organizational Standards and Institutionalized Process
4. Level 4—Managed Process
5. Level 5—Optimizing Process

According to Crawford (2007), it was necessary to break down each of the nine areas into key components. This is where the real measurement of maturity takes place.

Portfolio Management Maturity Model by PM Solutions

The PM Solutions Portfolio Management Maturity Model follows a similar structure to that in its Project Management Maturity Model. The only difference is the components which are as follows:

1. Component 1—Portfolio Governance
2. Component 2—Portfolio Opportunity Assessment

3. Component 3—Project Prioritization and Selection
4. Component 4—Portfolio and Project Communication Management
5. Component 5—Portfolio Performance Management
6. Component 6—Portfolio Resource Management

There is a clear lack of any maturity model for program management from PM Solutions, but it can be understood that if such a model had been developed, it would have similar levels, but the components may have been different. Again we can observe that we have a simple but flat model here, which may have several dimensions unexplored.

Berkeley Project Management Process Maturity Model PMPM or (PM)2 by Young Hoon Kwak and C. William Ibbs

The (PM)2 model provides a means for identifying and measuring project management levels by integrating nine knowledge areas with five project processes under a quantified scheme. It is well suited to assess an organizational (PM)2 level. Furthermore, the (PM)2 Model provides an orderly and disciplined process to achieve higher levels of project management maturity. This model should be continuously refined to reflect advances in the project management knowledge base. This refined (PM)2 model could further determine and evaluate an organizational project management maturity level more effectively, as shown in Figure 22.4 (Kwak and Ibbs, 2000).

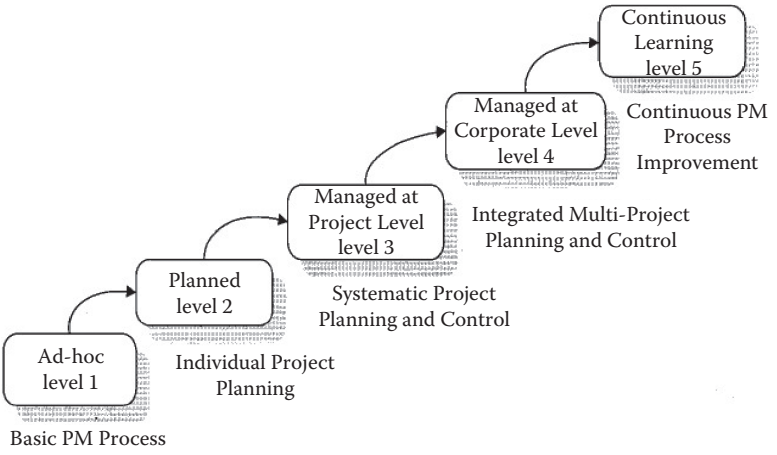


FIGURE 22.4
Project Management Process Maturity PMPM or (PM)2 model. (From Kwak, Y. H., and Ibbs, C.W. (2002). Project management process maturity model (PM)2 Model, *Journal of Management in Engineering*, July 2002.)

Organizational Project Management Maturity Model (*OPM3*®) by PMI®

The *OPM3*® by PMI® (2003) is so far the most comprehensive maturity model for projects, programs and portfolios, and it can rightly claim to be an organizational maturity model, but only in the areas of the overall domains of project, program, and portfolio management. As mentioned earlier, *OPM3*® does not stray into the areas of strategic management or operations management and therefore cannot be compared directly with the CMM or similar approaches. PMI's® *OPM3*® is the latest addition to the list of maturity models, and it is much more attractive as it starts with addressing the organization and not the projects. Moreover its maturity model is also interesting as it is not in conventional layers but is a three-dimensional model. The three dimensions are processes, domains, and stages, where processes include all the five process groups of project management, i.e., initiating, planning, executing, controlling and closing and comparable process groups in program and portfolio. Domains are projects, programs, and portfolios, and stages are standardize, measure, control, and continuously improve. *OPM3*® is a major leap in project management maturity models, but it makes the whole model extremely complex, and Kerzner's PMMM then, for example, seems comparatively simpler to implement. Again the focus is on the domains, which are project related.

Levin and Ward (to appear in 2012) provide additional information on *OPM3*®:

> PMI® (2003) in 1998 initiated a global project to develop *OPM3*® as a standard for organizational project management. This standard was published in 2003, comprising three areas:
>
> Knowledge—the contents of the standard
>
> Assessment—a method for comparison against the standard
>
> Improvement—an approach to establish a process for possible improvements based on the standard

PMI® developed *OPM3*® to help strengthen the relationship between strategic planning and the execution of programs and projects so the results were ones that were "predictable, reliable, and consistent, and correlate with organizational success" (2003, p. xi). As part of this standard,

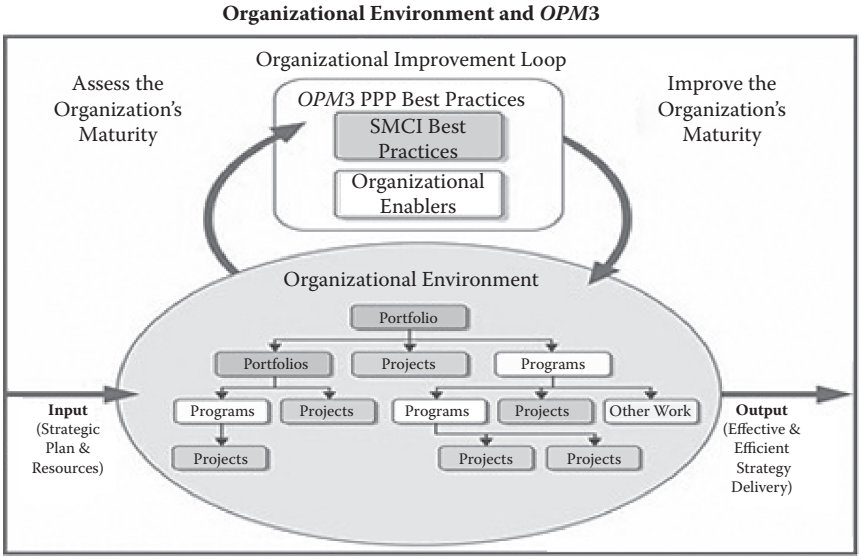


FIGURE 22.5
Organizational environment and *OPM3®*. (From Project Management Institute (2008). *Organizational project management maturity model (OPM3®)*, second edition. Newtown Square, PA: Project Management Institute.)

an approach for a self- assessment was included along with directories that contained over 600 best practices, capabilities, and outcomes.

OPM3® is set up in a manner in which assessments can be conducted on project management, program management, and/or portfolio management according to the following four stages of process improvement: standardize, measure, control, and continuous improvement. *OPM3®* does not contain levels of maturity but instead emphasizes best practices that need to be in place for multiple perspectives of maturity, see Figure 22.5.

The Second Edition of the Standard (2008b) contains 488 best practices or optimal ways to achieve stated goals or objectives in order to deliver portfolios, programs, or projects predictably, consistently, and successfully to bring to fruition the organization's strategic intent. These best practices are based on at least two capabilities or specific competencies that must exist in the organization. These capabilities each have multiple outcomes and key performance indicators (KPIs) associated with them. The KPIs are used to see if each outcome associated with the capability is in place and can be either quantitative or qualitative. There are also dependencies within the best practices in *OPM3®*, enabling a sequence

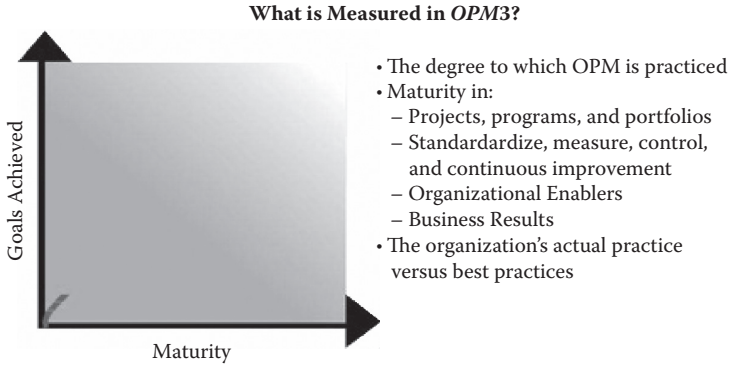


FIGURE 22.6
What is measured in *OPM3*®. (From Project Management Institute (2008). *Organizational project management maturity model (OPM3®)*, second edition. Newtown Square, PA: Project Management Institute.)

to follow to achieve best practices that are not in place as noted during an assessment. The best practices are mapped to the knowledge areas in portfolio, program, and project management. Business results, including predictability of success, resource use, and the balanced scorecard, are other areas that can be assessed using *OPM3*®, see Figure 22.6.

While the *OPM3*® Standard contains an abbreviated assessment method, an *OPM3*® On Line assessment tool is available as well as detailed assessments conducted by individuals certified as *OPM3*® Professionals who have the ability to conduct assessments using the proprietary Product Suite methodology, a detailed on line tool to not only determine the best practices in place in an organization but also to chart an improvement plan or roadmap to help organizations achieve other best practices.

In PMI's® second edition (2008b), 74 organizational enablers are part of the 488 best practices. These organizational enablers cover areas such as those shown in Table 22.1.

TABLE 22.1
Organizational Enablers

OPM Policy and Vision	Competency Management	Sponsorship
OPM Practices	Success Criteria	Resources
OPM Techniques	Benchmarking	Knowledge Management
Training	OPM Communities	OPM Methodology
Management Systems	Metrics	Strategic Alignment

Portfolio, Programme, and Project Management Maturity Model (P3M3) by OGC, UK

The Office of Government Commerce (OGC) also has been active in the development of maturity models in portfolio, program, and project management. Beginning as part of a project management maturity model in its PRINCE2 (PRojects IN Controlled Environments) methodology, in 2006, OGC released its Portfolio, Programme, and Project Management Maturity Model (P3M3). It then was updated in 2008 and 2010, recognizing that more organizations were moving into program and portfolio management. Even with the updates, OGC (2010) has set up each new version so it is comparable with the first model, making it easier for organizations to use the assessment approach. Its emphasis is to identify an organization's current capabilities, enable the organization to compare its current state to its desired state, and determine needed improvements. OGC also has a self-assessment tool available. See Figure 22.7 for an overview of the P3M3 structure.

OGC purposely set up P3M3 without interdependencies between the models in order that independent assessments can be conducted. It also follows a five-level staged approach, building on the CMM-SW structure:

1. Level 1 = awareness of the process
2. Level 2 = repeatable process
3. Level 3 = defined process
4. Level 4 = managed process
5. Level 5 = optimized process

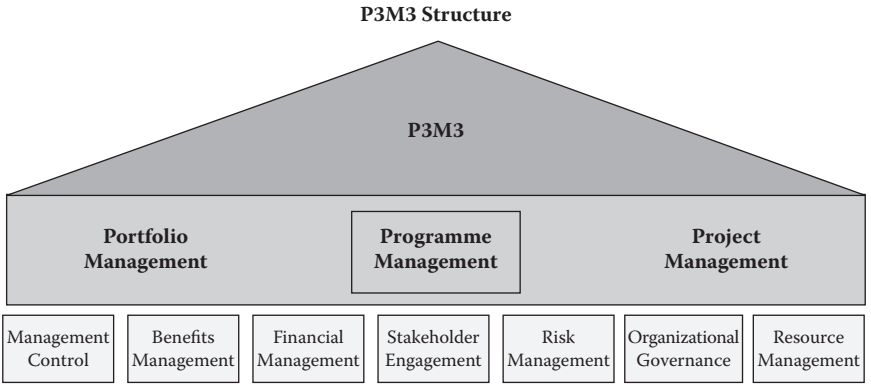


FIGURE 22.7
P3M3 structure. (From Office of Government Commerce (2010). *Portfolio, programme, and project maturity model (P3M3)*® Version 2.1.)

The seven perspectives as shown in Figure 22.7 are in each of the three models and can be assessed at each level. Attributes are part of each perspective, with specific and generic attributes described as appropriate. The emphasis is to provide a flexible approach to meet an organization's specific and unique requirements.

Although a self-assessment approach is included, similar to PMI® in *OPM3*® with its Certified *OPM3*® Professionals, the APM Group accredits consulting organizations to develop maturity questionnaires.

PRINCE2 Maturity Model by OGC, UK

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

P2MM is derived from the Portfolio, Programme and Project Management Maturity Model (P3M3). The P2MM can be used by organizations that have adopted PRINCE2 as the basis for their project management method, in place of the Project Management Maturity Model (PjMM) that forms part of the P3M3.

The PRINCE2 Maturity Model uses the same structure as the P3M3 from which it is derived, using:

- A five-level maturity framework to characterize the levels of organizational maturity
- Seven process perspectives covering key aspects of organization-wide project management
  - Management Control
  - Benefits Management
  - Financial Management
  - Stakeholder Engagement
  - Risk Management
  - Organizational Governance
  - Resource Management
- Specific and generic attributes for each level of maturity within each of the process perspectives.

Project, Program, and Portfolio Management Maturity Models by ESI International

ESI International, since 1999, has developed three separate models for project, program and portfolio maturity as follows:

- ProjectFRAMEWORK™ Project Management Maturity Model
- ProgramFRAMEWORK™ Program Management Maturity Model
- PortfolioFRAMEWORK™ Portfolio Management Maturity Model

Based on a paper and presentation by Fincher and Levin (1997), ESI International began the development of the Project Framework Maturity Model. These five levels and their definitions also were similar to those of the CMM-SW:

1. Initial—Ad hoc, no formal project management process
2. Repeatable—Implementing a project management methodology
3. Defined—Project management practices used and adapted
4. Managed—Project management practices measured and controlled
5. Optimizing—Focusing on process improvement

Fincher and Levin proposed goals for Levels 2–4 based on each of PMI's® knowledge areas in the PMBOK® Guide of 1996, with Level 5 consisting of seven goals.

ProjectFRAMEWORK™

ProjectFRAMEWORK™ (Levin, Hill, DeFillipis, Ward, and Shaltry, 1999) expanded on this work with the purpose of the model to provide guidance to organizations to improve the way they manage projects throughout their organizations. It focuses on continuous improvement in managing and developing project management at the organizational level. ProjectFRAMEWORK™ consists of five levels, similar to those originally proposed by Fincher and Levin, but with Level 3 titled Integrated, and Level 4 titled Comprehensive.

Following the work of the SEI in the CMM-SW (Software) and in discussions with the SEI, ProjectFRAMEWORK™ describes for Levels 2–5 objectives, commitment to perform, ability to perform, activities

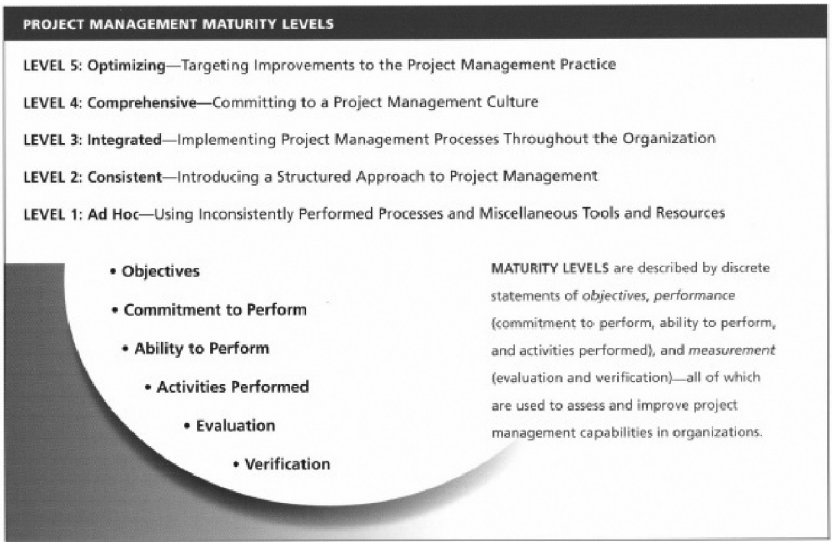


FIGURE 22.8
Project Framework™. (From Levin, G., Hill, G.M., DeFilippis, P., Ward, J.L., and Shaltry, P. (1999). *ProjectFRAMEWORK*™. Arlington, VA: ESI International.)

performed, evaluation, and verification, with examples in each area based on the PMBOK® knowledge areas, see Figure 22.8.

The model was once available on ESI's web site for downloading at no cost by interested organizations. It was accompanied by a detailed assessment methodology, which included a questionnaire to be sent to project professionals at a variety of levels, questions to ask during interviews held, and items for consideration in review of organizational documents, such as policies, procedures, and processes in project management, along with different items for review of documents prepared on actual projects. ESI established a training program in use of the model and certified professionals at the completion of this program. ProjectFRAMEWORK™ was updated after the second, third, and fourth editions of the PMBOK® were issued. In 2010, Levin, Arlt, and Ward prepared comparable models and assessment methodologies for program and portfolio management based on the second editions of the PMI® standards in these areas.

ProgramFRAMEWORK™

Levin, Arlt, and Ward (2010) developed ProgramFRAMEWORK™, a model with five levels similar to ProjectFRAMEWORK™. Level 1 "adhoc," has no specific objectives or activities described assuming all organizations would

be at this level of program management by default. Level 2 "Consistent" focuses on establishing a foundation of basic program management processes and eliminating fundamental problems by characterizing a methodology, governance, and training. Level 3 "Integrated" serves to establish the base founded in the previous level and focuses on gaining a strategic competitive advantage. Level 4 "Comprehensive" recognizes the value of grouping interdependent projects into a program management structure and the benefits associated with program management, with emphasis on stakeholder and benefits management. Level 5 "Optimizing" suggests an organization where all established mechanisms are being used appropriately and is being continuously improved, resulting in expansion of an expert/knowledge-base systems for decision models.

PortfolioFRAMEWORK™

PortfolioFRAMEWORK™ by Levin, Arlt, and Ward (2010), like the previous two models by ESI, has exactly the same Level structure, and Level 1 in this case is again like ProgramFRAMEWORK where no specific objectives are defined. Level 2 "Consistent" focuses on establishing basic processes and standards for portfolio management and to ensure that management has some visibility into the portfolio management process. An organization with Level 3 "Integrated" is motivated to gain a strategic, competitive advantage through its portfolio management process with an emphasis on organizational standards and institutionalized processes. At Level 4, the organization recognizes the value of portfolio management, and all programs, projects, and operational activities contribute to the organization's strategic goals and objectives. At Level 5 "Optimizing," an organization's portfolio management methodology operates routinely and efficiently, and the portfolio is assessed regularly. The organization focuses on the processes by which portfolio management is practiced, ensuring that any common causes of problems are prioritized and systematically eliminated. It strives to improve its portfolio management processes and further refine them to meet new business challenges.

Programme Management Maturity Model by Martinelli and Waddell

The benefit of using a framework for introducing and/or maturing the program management model within an organization is that it provides a

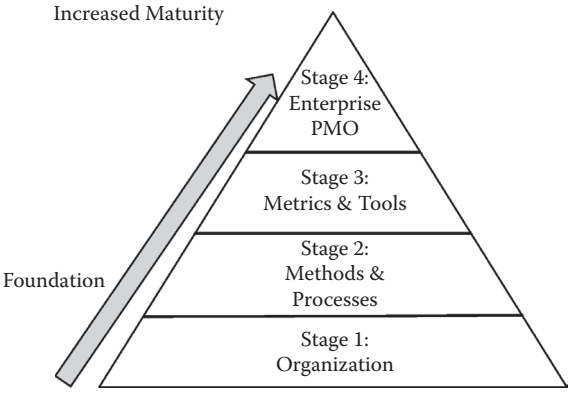


FIGURE 22.9
Program management maturity model. (From Martinelli, R., and Waddell, J. (2007). The program management maturity model—A framework for change, *PM World Today*, March 2007, Vol IX, Issue III.)

structured approach for setting direction, initiating actions, driving decisions, and changing the cultural components of the enterprise. Figure 22.9 illustrates the stages of the PgMMM (Martinelli and Waddel, 2007).

Martinelli and Waddel's (2007) Program Management Maturity Model has only four stages as compared to traditional five levels in other models. Stage 1 is "Organization," which is the foundation upon which program management is built. It is critical that the right organizational structure, management governance, and roles and responsibilities be put in place for the program management model to yield effective business results. Stage 2 is "Methods and Processes," which establishes the core development life cycle framework and the primary program and project management methodologies and associated processes to consistently manage programs to success. Stage 3, "Metrics and Tools," brings in a consistent and effective set of metrics to measure the achievement of the business objectives driving the need for each program. Additionally, a suite of program management tools are phased into the organization to support increased productivity and efficiency. Stage 4, "The Enterprise Program Management Office," establishes program management as a true function within the organization on par with the other key development functions. This stage brings a strong alignment between business strategy and program execution, consistency in business results across programs, and development of a true program management career path and competency development (Martinelli and Waddel, 2007).

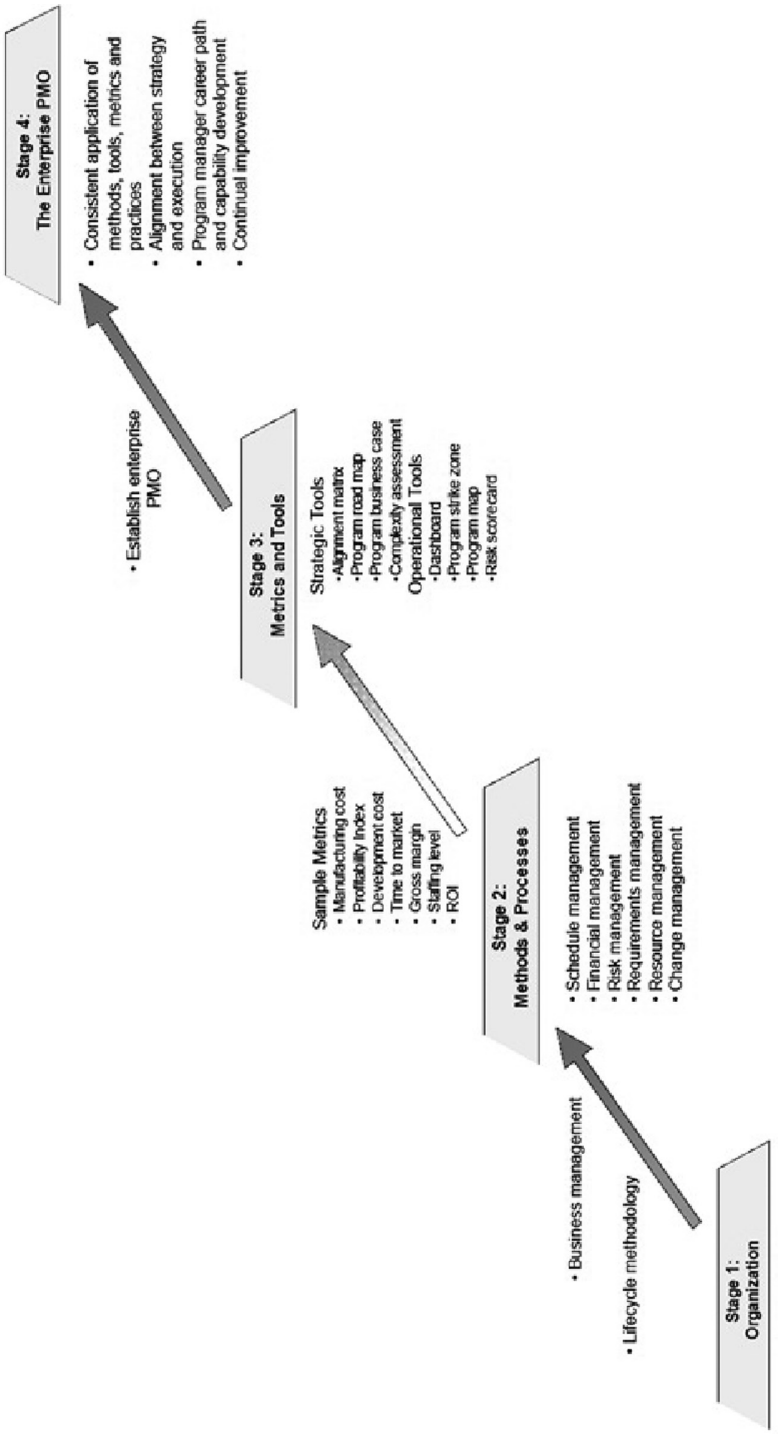
A robust development life cycle methodology must first be established to provide a consistent framework to synchronize the cross-project, cross-discipline work within a program. Once the life cycle is established, the supporting program management processes are developed and put into practice. Also in stage two, the program manager takes on the business management responsibilities associated with his or her program. This means focusing on creating the business case for the program; establishing and managing to the business success criteria; monitoring the market, customers, and competitors; and ensuring continued alignment of the program to business strategy.

With the establishment of effective program management methodologies and processes, as well as consistency in the practices involved in managing programs to success, an organization is ready to move from stage two to stage three. The focus of the transition from stage two to three is on establishing the correct set of metrics to measure performance and a suite of tools to generate the measures.

The final stage of program management maturity is the introduction of an enterprise program management office (PMO). The PMO addresses two of the most common problems that arise as the use of program management increases within an organization. First is the need for consistency in the definition, planning, and execution of all programs within a business unit. Without consistency across the portfolio of programs, business results are not predictable or repeatable on a recurring basis. Second is the need for a single program management point of contact within an organization as shown in Figure 22.10.

IMSI Project Management Assessment Model by Holmes and Walsh

The Integrated Management Systems, Inc. (IMSI) Assessment Model is employed to identify incremental steps to improve how a company manages its projects and to increase the likelihood of achieving project success. The IMSI assessment model looks at each of the project management knowledge areas and the enablers, critical elements, and processes associated with them. If the benefits derived from project management increase in proportion to how well project management processes are used, the intent of the IMSI project management assessment model is to help organizations better use the project management processes, elements, and enablers (Holmes and Walsh, 2005).


Stage 1:
Organization
• Lifecycle methodology
• Business management
Stage 2:
Methods & Processes
• Schedule management
• Financial management
• Risk management
• Requirements management
• Resource management
• Change management
Sample Metrics
• Manufacturing cost
• Profitability index
• Development cost
• Time to market
• Gross margin
• Staffing level
• ROI
Stage 3:
Metrics and Tools
Strategic Tools
-Alignment matrix
-Program road map
-Program business case
-Complexity assessment
Operational Tools
-Dashboard
-Program strike zone
-Program map
-Risk scorecard
• Establish enterprise PMO
Stage 4:
The Enterprise PMO
• Consistent application of methods, tools, metrics and practices
• Alignment between strategy and execution
• Program manager career path and capability development
• Continual improvement

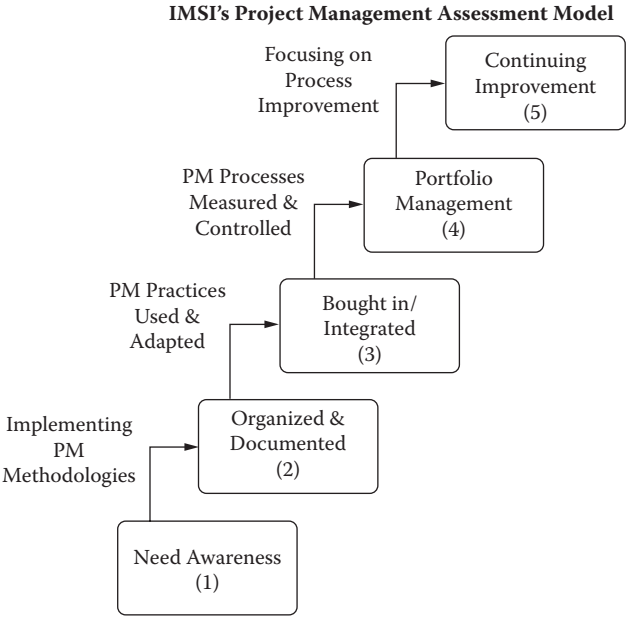


FIGURE 22.11
IMSI project management assessment model. (From Holmes, S. J., and Walsh, R. T. (2005). Conducting effective project management maturity assessment interviews, *IMSI TECH*.)

Like previous maturity models, the IMSI Project Management Assessment Model also consists of five levels, Level 1 being the lowest and named "Need Awareness." When some project management methodologies are developed and implemented, an organization may reach Level 2, which is "Organized and Documented." With better project management practices used and adapted, it will promote to Level 3, which is "Bought In/Integrated." Interestingly, the IMSI model does not have a separate model for program and portfolio management, but it shows Level 4 of its basic model as "Portfolio Management," which the authors insist can be acquired through measured and controlled project management processes. Like other maturity models, Level 5 here is "Continuing Improvement," which comes through with a focus on process improvement. The maturity model is shown in Figure 22.11.

FIGURE 22.10 (see facing page)
Transitioning in program management maturity model stages. (From Martinelli, R., and Waddell, J., (2007). The program management maturity model—A framework for change, *PM World Today*, March 2007, Vol IX, Issue III.)

STRATEGIC VIEW OF ORGANIZATIONAL MATURITY

Looking at the progress made so far on the various maturity models and especially those related to program management, it is observed that there always was an awareness of the organizational strategy in all the models so far evolved, but because of the inclination of these well-noted and respected authors toward project management, they tend to focus more on the topics related to project, program and/or portfolio management, and organizational maturity is still not the main focus. *OPM3®* is probably the only model, which starts addressing the organizational aspects, but it still remains predominantly project oriented. All maturity models look at the organization from their window of choice and pamper their own area of interest more than any other, gradually building a strategic justification for their respective maturity model. It is agreed that, whether the focus is on quality, people, or projects, it is definitely going to contribute positively to overall maturity of the organization. It is also agreed that if all these maturity models are analyzed and somehow tailored together, it will still be a positive contribution. But the question is, has organizational maturity even been considered in isolation? The maturity of an organization is a very broad issue and must be addressed top-down rather than evolving it in bottom-up fashion. The bottom-up approach will definitely miss some very important strategic ingredients, which will let this never-ending evolution continue forever.

FROM LEARNING ORGANIZATIONS TO LEARNING MATURITY

Learning Organizations

To find a solution to this problem, we have to take a unified strategic view of organizational maturity. This probably will not be possible without an intimate knowledge of organizational behavior, which to some extent has already been taken care of in developing several of these maturity models. Senge (1990) and Senge et al. (1994) introduced five learning disciplines at the core of the learning organization namely, personal mastery, mental models, shared vision, team learning, and systems thinking. It has also been repeatedly reported that organizations seriously committed to quality management are uniquely prepared to study the "learning disciplines"

(Senge et al., 1994, p. 10). Strategic thinking starts with reflection on the deepest nature of an undertaking and on the central challenges it poses.

Projects and Strategy

Project management has an edge here as project management becomes the way to implement corporate strategy (Turner 1993; Frame 1994). Projects, being the catalyst for change, are instrumental in realizing the strategic objectives of an organization. They are undertaken to add value to the organization. Therefore, in the private sector this means increasing the value of shareholders of equity in the company. But performance also comes from the maturity of an organization to deal with projects, especially through the aspects of learning (Bredillet, 2003). Bredillet proposes a method in his design for a life-long learning model, in which he discusses two dimensions: individual/organizational dimension and synchronic/diachronic dimension. Some development including knowledge management and measurement of performance is based on Bontis (1999) as shown in Figure 22.12.



FIGURE 22.12
Four fields of knowledge management in two dimensions (Bredillet, 2003; Bontis, 1999).

Figure 22.12 serves to portray that the highest level of input at the organizational level is organizational learning, where maturity models are placed at a lower tier with more orientation toward a diachronic dimension. As we are discussing organizational maturity here, we will not focus on the individual dimension, but the organizational dimension alone. *OPM3®* bases its three-dimensional model more on the best practices, and thus performance is measured in relation to the model evolved from these best practices. We can see that best practices lie more on a synchronic dimension and are at much lower tier on organizational hierarchy. The second dimension of *OPM3®* catering to projects, programs, and portfolios, does show an inclination toward organizational learning, but this aspect is not very well emphasized. The next revision of *OPM3®*, scheduled to be released in 2013, is expected to further improve the model and make it more organizational.

Programs and Strategy

Where projects are catalyst for change, they are dependent on the organizational strategy to tailor a solution to bring about that change. Organizational change is not usually handled directly by projects. In mature organizations, the organizational strategy is broken down into smaller strategic objectives, which may be organized in the shape of programs. These programs would have their own program strategic objectives, naturally in alignment with the overall organizational objectives. All the projects under a program would be organized in a way that all projects are aligned with the overall program objectives. Projects do have their separate business case, but they are focused on delivering the product, service, or result, and are not much concerned about the long-term benefits, as these benefits would be available to reap much after the project has already closed down. It does not mean that the business case of a project does not justify these benefits. It simply means projects would not be there when the benefits will be realized. Programs take account of the benefit realization as they are designed to last as long as the benefits are satisfactorily realized. They are therefore of generally longer durations as compared to the projects. In case of independent projects working directly under organizational strategy, it becomes the responsibility of the organization to ensure benefits realization. Organizations, probably cannot be mature enough without the existence of programs, and if there are no

programs, then they probably have some kind of project support mechanism in shape of a PMO to take care of issues related to benefits or transition of products after the projects have closed down. Generally it is not the responsibility of the PMO to look after benefits management except when the level of PMO has intentionally been raised to an enterprise or strategic level. *OPM3*® addresses the maturity of programs very appropriately as domains are one of its dimensions.

Portfolios and Strategy

For a mature organization, all the three domains, projects, programs, and portfolios, have to meet the maturity standards. The portfolio plays a high-level strategic role by ensuring that project investments are being managed most appropriately. The portfolio is the level closest to the organizational strategy and is wholly responsible for investment in all programs and projects being run under the organizational control. Portfolios have a much higher responsibility of an investment portfolio, and thus it would not be appropriate to involve portfolio management with daily running of program and project management. The portfolio may control strategic resources and investments and may even have a PMO at the portfolio level to assist in its own strategic objectives, but we seldom assign the responsibility of physically managing or day-to-day monitoring of individual programs and projects to the portfolio. This clearly shows the maturity requirements of a portfolio are completely different from those of programs or even projects. From the perspective of project management, the portfolio is the highest level, which communicates with organizational strategy and that is where all project management maturity models lose track of organizational maturity. *OPM3*® is the only model, which addresses all aspects of projects, programs, and portfolios, to be assessed and managed for maturity, but as soon as it comes to the organizational strategy, project management maturity models are lacking. Naturally, for operational aspects or from dimensions of capability, quality, or risk, we may have to assess an organization's maturity through some other maturity model, but here is the disconnect. All maturity models are different structurally, and the unified strategic view, we are expecting to emerge, is not likely to emerge. To find or develop a common unified maturity model, we need to evolve, as suggested by Senge (1990) in the concept of organizational learning.

Learning Maturity

Learning maturity is applicable when subjects use external structures (i.e., technologies) in new and novel ways to perform behaviors that were previously unattainable. (Templeton, 2003). Organizations, as explained earlier, are living organisms and therefore are like intellectual intelligence (IQ) and emotional intelligence (EQ) in human beings, Templeton (2003) proposes a model (Figure 22.13) of effective intelligence for learning organizations, which is a summation of technological intelligence and natural intelligence. Learning maturity, according to him, contributes directly to technological intelligence.

An organization needs to accumulate use-development experience and have access to technology to learn maturity, thus increasing its technological intelligence and subsequently effective intelligence. This contribution to the learning organization may not be apparently visible as the maturity is diachronic and will yield results in long run. Only if organizations can focus on the learning processes, they can actually work toward their maturity. All maturity models can only serve to provide them a mean for measurement of their performance. Even after understanding the importance of having a unified strategic view of organizational maturity, the learning organization and learning maturity, we have only reached a state of common understanding that none of the existing maturity models serve organizational maturity as a whole.

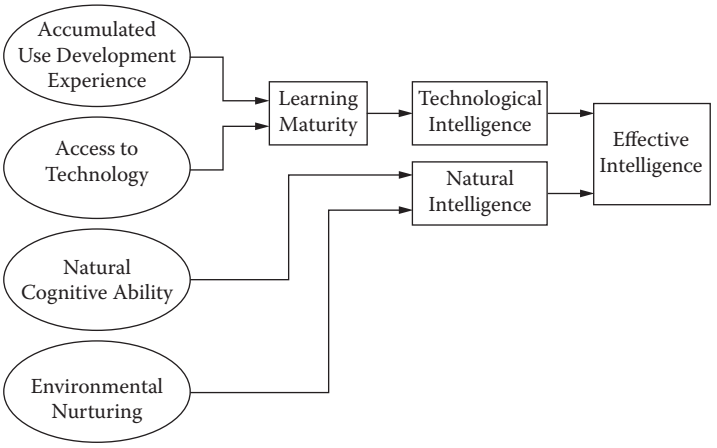


FIGURE 22.13
Proposed model of effective intelligence (Templeton, 2003).

HOW MUCH MATURITY IS REQUIRED?

It is now necessary to return back to the very important question of how much maturity is required. This is something we forget to understand when we start growing up, we do not estimate how much we want to grow and how much maturity is suitable for us. Will it be fine for a child to be as mature as an adult? Definitely a child does not need to be as mature as an adult, and thus the level of maturity is less. Similarly if an organization has limited strategic objectives and needs not to grow more than a specific limit, will any of these maturity models serve it well? It may improve its processes, its quality, its human resources, and even its project management skills, but for how long and how much? The size of organization plays an important role in its maturity, and therefore, a model which can adjust itself to the needs of an organization must be developed.

Moreover, we need to understand that all organizations and businesses have a definite span of life, and like humans and programs and projects, they have to die one day. Continuous improvement is good motivator, but an organization has to understand that improvement beyond its life span or beyond its strategic objectives is not desired. There is a need to explore this new area of research and find a well-suited organizational maturity model which can answer all these open questions.

SUMMARY

The research has highlighted and indicated a very important and missing research area, which can change the shape of maturity models for the times to come. The need to bring all the maturity models to the drawing board and consolidate their results to form an organizational maturity model may even not be enough, and some creative and fresh thinking is required to identify all ingredients of organizational maturity. This also brings us to the realization that various organizations may have different maturity requirements, and therefore, the new organizational maturity model must address it appropriately. Currently useful research is under way in the field of organizational maturity, but the irony is that, most of it is specific to a certain area, and the spirit of organizational maturity is not being addressed as such.

The objective here is not to propose yet another maturity model but to find synergies among several viewpoints on organizational maturity and to answer the question "How does an organization mature and why?" If this question is well-responded, we can start working toward the next question "How can we find a common standard for organizational maturity?" Future direction from such a study would be to formulate a universally-accepted *organizational maturity model*.

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23

Sustainability Program Management

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INTRODUCTION

The International Institute for Sustainable Development (2012) has a definition focused on sustainable management of organizations: "Adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future." Important in this definition is the mentioning of the "…needs of the enterprise and its stakeholders today…". This aspect of the definition recognizes that without profitability today, care for the environment and humanity cannot be sustained. Elkington (1997) identified this as the 'triple bottom line' or 'Triple-P' concept: the balance between economic sustainability (Profit), social sustainability (People) and environmental (Planet) sustainability as illustrated in Figure 23.1.

Another definition of sustainability from the International Institute for Sustainable Development is the "capacity to endure." This definition fits quite well with the application of economic, social, and environmental endeavors within the world of program management. An important aspect of this application is that everything in our world is connected and must be treated accordingly. Sustainability must be coordinated with proper oversight from a holistic vantage point in programs, projects, products, services, and results (Barnard, Ackles, and Haner, 2011).

One of the many roles a program manager takes on is to have a thorough understanding of the efforts it takes to be sustainable. Exactly what does it

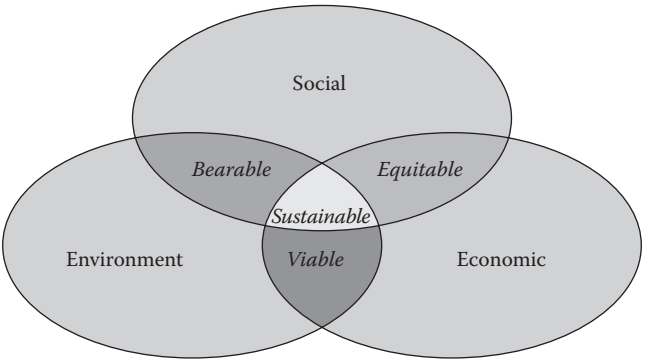


FIGURE 23.1
The triple-P concept of sustainability.

mean to be sustainable? Buzz words such as reduce, reuse, recycle, renew, repurpose, reclaim, redesign, and refresh all circulate in the program management industry—and what can be relied on is a way to measure against criteria on profit sustainability, people sustainability, and planet sustainability. These performance indicators should then be applied on the level of the program itself, its benefits (improved operations, growth, employee morale, etc.) and its effects (the impacts of what the programs deliver).

According to Silvius, Gilbert, and Smit (2009), an important source of knowledge about sustainability performance indicators is the Global Reporting Initiative (GRI). This organization's objective is to harmonize sustainability information provided by organizations for benchmarking of indicators. It developed a set of sustainability performance indicators for use by organizations to reference in reports. These indicators are downloadable on the website: www.globalreporting.org. Some examples of indicators:

Profit indicators for sustainability:

- Financial benefits
- Market and competitive position
- Other economic effects.

People indicators for sustainability:

- Labor (e.g. health, safety, education, development, career opportunities, etc.)
- Human rights (e.g. child labor, freedom of religion, gay rights, etc.)
- Society (e.g. community development, corruption, competition, etc.)
- Product (e.g. product safety, marketing, privacy, etc.).

Planet indicators for sustainability:

- Materials used (e.g. losses, waste)
- Energy consumption (e.g. direct consumption, indirect consumption)
- Water consumption
- Transport
- Emission of greenhouse gas
- Etc.

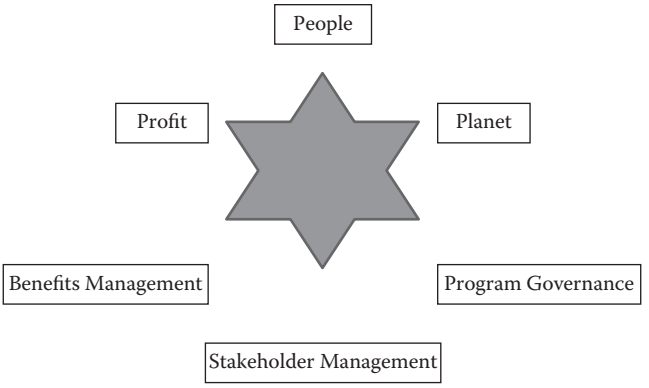


FIGURE 23.2
Sustainability program management star.

Sustainability makes good program management sense. Each day, on any given program around the world, program managers are making decisions that affect the Triple Bottom Line. As described above, the Triple Bottom Line is Profit, People, Planet. As a program manager, it is important to make choices that count.

This chapter has two parts. Part I covers the Sustainability Program Management Plan, and Part II covers sustainability tools and techniques. Three appendices also are included—one contains some sustainability job aids, while the other two present web sites for additional information.

The sustainability program management star, shown in Figure 23.2, integrates sustainability and program management. It is based on the Triple Bottom Line (the pillars for sustainability) and the three main themes of program management. The star shows that, to integrate sustainability in program management, these two basic models can be combined into one. To successfully integrate sustainability into program management, there has to be a balance between all the six factors. If not, the success of the program may be at risk.

PART I: SUSTAINABILITY PROGRAM MANAGEMENT PLAN

Sustainability program management is the systematic process of planning sustainability into a program as well as identifying, analyzing,

and responding to program sustainability risk items (SRIs). A published sustainability program management process helps ensure that sustainability management is included in the planning processes of programs. Sustainability due diligence suggests that programs can be managed from start to finish with reference to a sustainability program management plan and a sustainability information management system (SIMS).

Definitions

Sustainability Program Management Plan: a model of processes mapping sustainability management activities for a program. It is important to plan for the sustainability management processes that follow to ensure that the level, type, and visibility of sustainability management are commensurate with the scale, complexity, value, priority, visibility, and the risk of the program to the organization, the community, and the environment. The SPMP may be a subsidiary plan to the program management plan that governs the management of the program across the program life cycle.

Sustainability Information Management System: a central data base dedicated to the program that acts as a record of all sustainability planning, identified sustainability risk items, response plans, and responsibilities therein. This data base also provides a platform for communication and agreement among the program stakeholders and program communities at large. The SIMS is also an integral part of program change control. It is considered a living document for the life cycle of the program. This sustainability information system can be incorporated into the program management information systems so there is a single system for the program.

Sustainability Risk Items (SRI): identified sustainability risks. These items are potential events that may or may not occur in the future. Each item has an associated level of probability that may be difficult to ascertain. Once sustainability risks have been identified, qualitative and quantitative analysis can be performed to determine the severity of each one, and the measures that the program manager can take to protect the integrity of the program plan can be determined.

First Steps

Building a sustainability program management plan requires a description of the processes by which sustainability will be managed in the program. The SPMP may be considered an organizational standard on the

management of sustainability within programs. A SPMP may be scaled or tailored to fit the specific program. It may be applied evenly to all programs or scaled up or down according to the specific program and organizational needs. The SPMP is a key document within the program management suite of documents. Once established and adopted by the organization and the Program Management Office (PMO), it is rarely changed except for any ongoing process improvement efforts.

Recommended SMP Contents

***Executive Summary*:** A brief summary of the document (typically limited to a single page) addressing what the plan is and why it is being used on this program.

***Purpose*:** Describes the intent of this document as it relates to program sustainability management and the other programs and projects within the organization.

***Key Sections of the SMP*:**

1. Model of the sustainability management processes across the program life cycle.
2. Responsibilities and commitments reflecting the organization's definition of and commitment to sustainability efforts. A brief statement of organizational, senior management, and stakeholder commitment to the sustainability management processes. **Note:** This is an important component in facilitating stakeholder buy-in and involvement in the development of a sustainability culture, openness of the challenges of sustainability, and ultimately, the day-to-day roles and responsibilities of planning and managing sustainability. Sustainability can only be managed with the buy-in and involvement of the entire program and project management community and/or the organization itself.
3. Accepted sustainability risk methods—the best possible approaches to addressing risks as appropriate.
4. Identified and defined review triggers for sustainability within the program.
5. Budget and scheduling of sustainability management activities.
6. Determination of risk categories related to sustainability.
7. Definitions of sustainability risk probability and impact along with related scales and metrics.

8. Stakeholders' tolerances related to sustainability risk.
9. Use of a Sustainability Breakdown Structure (SBS).
10. Reporting methods and formats.
11. Selected tracking and forecasting tools and techniques.

Scope of Sustainability Program Management: The areas of the program that sustainability program management addresses and does not address.

Formal and Informal Sustainability Verification Techniques: Consists of reviews, internal and external audits, walk-throughs, inspections, etc. This section includes the forms and templates used by the program community for sustainability management.

Definitions and Glossary: A full list of sustainability terms and definitions used in the document

Change Management Process: Describes how this document is to be managed and changed, what is expected of stakeholders, and risk notification documents.

References: References to organizational and industry standards for sustainability, books, white papers, research, and any other materials quoted or intellectual capital referenced by the SPMP.

Steps to Build and Implement the SPMP

Once the SPMP has been developed and signed off, it is essential to ensure its processes are applied, and the spirit of sustainability management exists within the decision making and oversight of all programs. One suggested guideline is to publish the sustainability process model documented in the SPMP and promote it through the organization. The SPMP must be available to everyone in the program management community, the program stakeholders, and all levels of management within the organization.

Note: Proper implementation of a new SPMP may require a complete change management plan and an implementation plan with supporting communication, training, coaching, and applied performance metrics. Never underestimate the importance of planning for the practical psychological and emotional challenges of changing the thoughts, actions, and behaviors of the people within an organization.

For sample SPMPs and best practices for creating these plans, see http://www.iispm.org.

Summary: Part I

Part I describes the content and intent of a Sustainability Program Management Plan (SPMP). Its purpose is to show why such a plan is important and useful in programs. It also clarifies the various stakeholders that typically are involved in the program sustainability community and identifies the strategic sustainability risks related to the program. It explains the importance of stakeholder signoff and authorization as part of the SPMP.

PART II: SUSTAINABILITY TOOLS AND TECHNIQUES

Sustainability plans require new understanding and practical experience unique to the world of sustainability. Sustainability planning provides processes, tools, and techniques that complement the current best practices in program management around the world today.

All inputs available to the program manager, project managers, and program teams may help and be used as part of the sustainability planning process. A great place for the program manager to start is a review of the SPMP, the defined program scope, and any relevant Enterprise Environmental Factors (EEFs) and Organizational Process Assets (OPAs). Together, these program elements help the program manager, and the project managers, establish the boundaries of sustainability planning within their program effort.

The sustainability practitioner must consider a modified list of tools and techniques available for sustainability planning. They are discussed as follows.

Cost/Benefit Analysis

No reference needed. Sustainability variables should be incorporated into the qualitative and quantitative components of a program's cost/benefit analysis. Incorporating sustainability requires redefining what "cost" and "benefit" mean to the organization in addition to the typical values

expressed through "cost" and "benefit" metrics used in traditional formal business management, business analysis, project management, and program management. Adding sustainability to the analysis activities may also require developing new metrics to enable the measurement and expression of sustainability items.

For example, a challenging discussion around sustainability today is the idea of "real" costs. When an organization decides to procure a product from a new vendor that is 16 thousand miles further away for a cost savings of 2.5% per unit of a product for resale, what are the true costs, and are they part of the equation used to determine cost savings to the organization? How does a decision to pursue sustainability in an organization influence the value of these costs relative to their perceived and real benefits?

With respect to costs, some sustainability variables expected to be seen in the analysis calculations may include:

1. What type of materials are being used?
   a. Poisonous or not
   b. Grey list or black list or not
   c. Virgin materials or recycled with a percentage breakdown
2. How are the materials being processed?
   a. Are they being processed in a way that is harmful to the community or to the environment?
3. How dependent are we on non-renewable resources for the procurement of raw materials, processing, manufacturing, logistics, etc.?
4. Do any of our actions cause increased carbon footprint, community displacement, community impact, or any other negative long-term impacts?
5. If we are using petroleum products, is the cost of those products reflected simply by the mere price tag of the current market value in oil trading, or are the real costs much more complicated?

For example, how does the program:

1. Incorporate the cost of the depletion of the trilogy of nonrenewable fuel products used today: oil, natural gas, and coal?
2. Estimate the cost of waste products created from the extraction processes used in procuring these products?
3. Estimate the cost of the impact to communities living in proximity to the geographical locations of the processing plants of these products?

Typically, these questions are not asked in traditional, formal business analysis, or business case development, but they should be! The sustainability program management practitioner must ask questions like these and many others to show due diligence in the plans to protect the organization, the community, and the environment to ensure a net positive impact therein.

In many cases of global procurement and manufacturing of products, the cost estimates related to the above mentioned variables are not incorporated into the cost/benefit analysis included in the business case proposals.

Each program proposal must be treated as a unique and distinct effort. Sustainability variables must be considered at length in a way that is commensurate with the complexity, probable risk, and percentage of unknown-unknowns in the program itself.

Material Composition Analysis

Assume that a Material Breakdown Structure, or "MBS," is created of all chemicals, products, and inputs to the defined scope of a program. In essence, this is the data base of materials to use on the program and becomes the basis for the materials composition analysis.

Organizations are responsible for the materials used directly or indirectly by their programs, projects, processes, services, and products. This is a changing business area that must be considered for legal and regulatory compliance. New laws are being passed every year that vary from one country to another. These laws may have a direct impact on the management of material composition of any product from product inception to its retirement and "death" as well as for any recycling of its components. These laws regulate the use of any and all materials as part of any project, product, service, or result that is created as a result of program activities.

The organization, program manager, project team, and all key stakeholders of the program management community must be aware of the legal and regulatory compliance concerns both today and in the future. Many organizations choose to go beyond the set standards mandated by law and regulatory compliance as part of their approach to sustainability. Any such plans must be incorporated into the program plans, adhered to, measured, reported, and managed by the program manager, program management team, program community and/or the PMO.

Sustainability Materials Filter

A materials filter is a guide that outlines what materials, chemicals, and products are acceptable for use by the organization and its organization's customers and business supply chain. There are many chemicals that are black or grey listed around the world that the program manager must be aware of when building a MBS for the program.

Many supply chain management standards related to sustainability may impact the selection of approved materials for a program.

Black lists and grey lists are lists of banned or limited chemicals or chemical compounds. These lists are established by government bodies, regulatory agencies, and other organizations. Another list to consider when planning manufactured products is the Persistent Organic Pollutants (POPs). This list was established in 2001, by a United Nations (UN) pact to end the use of a range of pesticides, dioxins, and polychlorinated biphenyls (PCBs). The UN's intent was to save lives and protect the natural environment.

The program manager must be aware of these lists and any related chemical composition constraints on the program. Plans must be made to adhere to identified constraints and provide viable alternatives where needed.

Environmental Impact Assessment

An environment impact assessment addresses the potential environmental impacts of sustainability as part of the program costs. The assessment also looks at the potential hazards or risks that may be caused directly or indirectly by the actions and end results of a program.

In these assessments, programs are assessed for their unique qualities and distinct inherent risks relative to sustainability. The assessments are a mechanism to get stakeholder involvement and buy in to the program's sustainability approach and any potential environmental impacts.

When designing processes and products, one assessment step is to consider greenhouse gases that require reduction:

1. Carbon dioxide (CO^2)
2. Methane (CH^2, 21 times CO^2)
3. Nitrous oxide (N2O, 310 times CO^2)
4. Hydro-fluoro-carbons (HFCs, 1,300 times CO^2)

5. Perfluoro-carbons (PFCs, 6,500 times CO^2)
6. Sulphur hexafluoride (SF6, 23,900 times CO^2).

Another tool available to the sustainability program management practitioner is the electronic products environmental assessment tool (EPEAT). This tool is used to assess electronics relative to the following areas:

1. Reduction and/or elimination of environmentally sensitive materials
2. Materials selection
3. Design for end of life
4. Product longevity/life cycle extensions
5. Energy conservation
6. End-of-life management
7. Corporate performance
8. Packaging

"The Melbourne Principles for Sustainable Cities were developed in Melbourne, Australia, in 2002, during an international Charette, sponsored by the United Nations Environment Programme and the International Council for Local Environmental Initiatives. The Melbourne Principles consist of 10 short statements on how cities can become more sustainable" (Edwards, 2007). The 10 principles are a set of foundational building blocks in the design of any product environmental plan. Although they are macro level in their scope of intent, the spirit of their principles can be applied at the micro level of any program. As they are designed to be read by decision makers, they are an excellent guide for anyone concerning what defines urban sustainability and provide a good starting point on the journey toward sustainability. They can also apply to any city in the world. Although all the principles are central to create sustainable cities, Number 8, for example. "Expand and enable cooperative networks to work towards a common, sustainable future" is perhaps the most pertinent for SustainableMelbourne.com and SustainableCitiesNet.com. This example illustrates the need for multiple approaches, people, and institutions to work together to create sustainable urban environments.

The 10 principles are:

1. Provide a long-term vision for cities based on: sustainability, intergenerational, social, economic, and political equity and their individuality;
2. Achieve long-term economic and social security;

3. Recognize the intrinsic value of biodiversity and natural ecosystems and protect and restore them;
4. Enable communities to minimize their ecological footprint;
5. Build on the characteristics of ecosystems in the development and nurturing of healthy and sustainable cities;
6. Recognize and build on the distinctive characteristics of cities, including their human and cultural values, history, and natural systems;
7. Empower people and foster participation;
8. Expand and enable cooperative networks to work toward a common, sustainable future;
9. Promote sustainable production and consumption through appropriate use of environmentally sound technologies and effective demand management; and
10. Enable continual improvement, based on accountability, transparency, and effective governance (Edwards, 2007).

Three additional directives that the program manager can use when assessing an environmental plan are:

1. Waste Electrical and Electronic Equipment (WEEE): This directive requires that manufacturers take responsibility for the full life cycle of the products they create, including packaging.
2. Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS): This directive requires the elimination of various hazardous substances in electronic components such as lead, mercury, and cadmium.
3. Registration, Evaluation, and Authorization of Chemicals (REACH) used in a product.

Design Philosophy Assessment

There are design philosophies that incorporate sustainability into systems and products in different industries around the world today. These design philosophies establish new sustainability benchmarks for program managers. When developing any new product or system, first research whether or not a design philosophy already exists. This enables a smooth transition of knowledge, lessons learned, and continuous improvement, as well as helping to develop a global sustainability practice.

For example, Google is developing IT systems with sustainability objectives to reduce energy usage (e.g., by modifying the use of fans, heating, and cooling, cycling times, down time, etc.) to incorporate the use of renewable energy forms to reduce the use of the energy trilogy: oil, coal and natural gas and to reduce waste. As with this Google effort, any breakthroughs in sustainability design should be shared with the global community of practice. What it comes down to is that even as cutting-edge companies like Google and startups are embracing openness with their knowledge, there is an exponentially larger pool of companies who have yet to understand and internalize the economic and sustainability benefits of sharing.

It is positive to share, and there is the Triple Bottom Line imperative to share and be open about sustainability knowledge. The world is at stake, and time is of the essence.

Still another example is Interface, one of the largest carpet manufacturers on the planet. Interface has probably set the best example to date:

1. Eliminating waste from its processes
2. Creating an 80% reduction in landfill waste per unit of production since 1996
3. Reducing water intake for manufacturing by 80%
4. Reducing total energy usage by 43% since 1996
5. Reducing Green House Gases (GHGs) by 94%
6. Managing 30% of global energy usage from renewable forms of energy
7. Transitioning European factories to now run on 100% renewable electricity
8. Offsetting 200 million air miles by planting 106,000 trees (Anderson, 2009)

Additional Planning Tools

"Fit for Use" Assessment

A practical design approach is to ensure that a product or system is built to do nothing more than what is required. In order to ensure this in the design, requirements must be written, tested, and approved.

"Make-or-Buy" Assessment

When an organization has the capacity to design and build its own products and systems, it has to weigh the benefits of doing so. For this reason,

many organizations reassess their core business and purposely decide to only build things that align with their organizational goals and objectives.

Anything outside their core business must be outsourced. This approach frees up resources to focus on their main business. With that said, it is a common practice to calculate the financial benefits of purchasing a product or service over building it internally. Additionally, there are often tax considerations and government incentive programs that may influence organizations criteria for make-or-buy decisions.

Life Cycle Assessment (LCA)

A "composite measure of sustainability" analyzes the environmental performance of products and services through all phases of their life cycle: extracting and processing raw materials; manufacturing, transportation, and distribution; use; re-use; maintenance; recycling; and final disposal.

When part or all of a program involves the creation of products, the life cycle of the product and all its parts must be considered. In the past, it was common to use virgin materials to make a product, use the product for a few years, and ultimately discard the product to a landfill. Today, this is deemed as environmentally unacceptable.

Additionally, there are new legal and regulatory compliance concerns that impact the life cycle and waste of any product or components thereof. An example of this is Volkswagen. In Germany, Volkswagen is producing vehicles that are completely recyclable at the end of their life cycle (Barnard et al., 2011, p. 25).

Another example is that of toilet paper manufacturers. There are toilet paper products in Europe that consist of paper and cardboard rolls that disintegrate completely when immersed in water in order to eliminate any impact to municipal water systems. There are many consulting groups and Universities that will perform a LCA of the products and processes, and detail any and all chemicals and chemical compounds used therein (Barnard et al., 2011, p 25).

Life Cycle Costing

Costing of a life cycle takes the LCA and adds direct and indirect cost estimates to it. A consideration here is the long-term environmental and community costs associated to the manufacturing, shipping, usage, and dismantling of any product.

For example: international firms often relocate their manufacturing facilities when their local operating costs increase beyond acceptable programmed limits. The questions are:

1. How does this practice impact the communities left in their wake?
2. Can these communities replace these jobs as they are relocated to countries thousands of miles away?
3. How sustainable is this practice?
4. If an organization does this continuously, will it eventually harm the financial welfare of the market it depends on for its ultimate revenue?

There are no easy answers to these questions, but they are questions that must be asked by prudent sustainability program management practitioners.

Cradle-to-Cradle Planning

McDonough Braungart Design Chemistry (MBDC) has established the trademarked concept and practice called Cradle to Cradle (C2C). This entails the planning and creation of a product life cycle that runs from creation of a product to the end of its use (Barnard et al., 2011, p. 26). See MBDC at http://www.mbdc.com. The key difference with a C2C to Cradle design is the planning and management of the transition of a product's end-of-life. An effective plan manages the dismantling and ultimate 100% reuse somewhere in the world.

A common sustainability practice that often conflicts with this plan is dematerialization. Many engineers and designers have been tasked with the responsibility of reducing the quantity of materials used in a product in an attempt to be better stewards of nature and reduce costs. In some cases, the inadvertent negative impact of this approach is the result of a product that cannot be recycled or reused in a feasible way. An example is the thin plastic water bottles available in the water bottling industry. Some companies have attempted to thin these bottles as an objective of dematerialization. The end result is a bottle so thin, that it can no longer be recycled in a feasible way. If the bottles were slightly thicker, recycling companies could make enough profit recycling them to make it a feasible business practice (Barnard et al., 2011, p. 27). As a result of dematerialization, there are many products believed to be recyclable that are actually finding their way to landfills around the planet. This is a good initiative that has gone wrong in application.

When planning sustainability initiatives, it is essential to fully comprehend the goals and steps required to achieve those goals. Additionally, tracking and measuring the outcome of plans is needed to ensure that the end results are in fact what were planned. Otherwise, it could become an example of green washing the program plans with ideas that sound good but often fall gravely short of the intended objectives

What is green washing? It is whitewashing, but with a green brush. Whitewashing is considered to be a way to hide unpleasant facts, especially in a political context, while "green washing" is the same premise, but in an environmental context. It is green washing when a company or organization spends more time and money claiming to be "green" through advertising and marketing than actually implementing business practices that minimize environmental impact. A classic example might be an energy company that runs an advertising campaign touting a "green" technology they are producing, but that "green" technology represents only a sliver of the company's otherwise not-so-green business, or may be marketed on the heels of an oil spill or plant explosion. Another example is a hotel chain that calls itself "green" because it allows guests to choose to sleep on the same sheets and reuse towels, but actually does little to save water and energy where it counts—on its grounds, with its appliances and lighting, in its kitchens, and with its vehicle fleet. Other examples are a bank that is suddenly "green" because finances can be conducted online, or a grocery store that's "green" because it will take back plastic grocery bags ("About Greenwashing," 2012).

Expert Judgment

Refers to the application of practitioner knowledge, experience and acquired intellectual capital. It is expected that the applied actions of a practitioner imply thoughtful planning, methodical execution, the ongoing monitoring and controlling of work performed, and necessary corrective actions to keep the program on track, due diligence of actions required, and the appropriate closure activities of all work performed.

Summary: Part II

Part II describes the challenges of planning the sustainability of a program. Whether the program is a sustainability program or simply has one or more sustainability projects within it, to manage sustainability, a

different approach is needed other than that the approach provided by traditional business management and program management training.

CHAPTER SUMMARY

Program managers must be committed to strengthening a program with the knowledge, contributions, and the success that comes from creating and managing a sustainable program and, therefore, contributing to a sustainable earth. The program manager, with the project managers, is responsible and accountable for the advocacy and support of improving the profit, people, and planet's impact in all phases of the program's life cycle. Being committed to participating in a sustainable earth through our programs—personally and professionally—will play an important role for the future of sustainability program management.

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APPENDIX I: SUSTAINABILITY PLANNING JOB AIDS

"Top Ten Questions" when designing a new product:

1. Is there a viable alternative to this product?
2. Is waste minimized in the design and manufacturing therein?
3. Is the product made from virgin or recycled materials? % Breakdown?
4. Have the requirements been achieved with minimal overall materials?
5. Is the product made from local materials with minimal community and environmental impact?
6. Are the materials reusable?
7. Is the product toxin or poisonous free?
8. Do the product materials have market value as recycled materials?
9. Can the packaging be recycled?
10. Are all the chemicals, parts, and components of the product sourced from sustainable organizations? (Barnard et al., 2011)

APPENDIX II: SITES FOR TECHNICAL AND/OR CHEMICAL COMPOSITION INFORMATION

1. American Chemical Society Education: http://acs.org/education/greenchem
2. EPA Green Chemistry Homepage: http://epa.gov/greenchemistry
3. The Green Chemistry Institute: http://chemistry.org/
4. Green Chemistry Network: http://www.greenchemistrynetwork.org/
5. Royal Society of Chemistry, Green Chemistry Homepage: http://rsc.org/is/journals/current/green/greenpub.htm
6. Green Chemistry at the University of Oregon: http://uoregon.edu/~hutchlab/greenchem
7. More Green Chemistry Links: http://zerowaste.org/resources/07b_gc_resources.htm
8. National Health Information Center, Harmful Chemicals in Everyday Products—What to Look Out For: http://www.health.gov/NHIC/

APPENDIX III: LEGAL, REGULATORY COMPLIANCE, AND GOVERNMENT PROGRAMS

3.a. Green Business Guide to Energy Audits (NRDC). An energy audit format that analyzes and evaluates your company's existing energy-use practices with an eye toward cost savings: http://www.nrdc.org: Natural Resources Defense Council. *Smarter business: greening advisor.* Retrieved January 11, 2011, from http://www.nrdc.org

3.b. How to Conduct Your Own Energy Audit (Nicor). A simple step-by-step guide to conducting an initial commercial energy audit: Nicor Gas, *Conduct an energy audit.* Retreived January 11, 2012, from http://nicor-gas.aglr.com/Business/EnergySavings/ConductanEnergyAudit.aspx

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3.e. Rapid Energy Modeling (Autodesk). Workflow software specially designed for rapid assessments with limited data for modeling energy use and building auditing: Autodesk. *Sustainable design.* Retrieved December 29, 2011, from http://usa.autodesk.com/adsk/servlet/pc/item?id = 14981691&siteID = 123112

3.f. Insulation Thickness Computer Program (3E Plus). An energy management computer program that determines the amount of insulation necessary for a variety of industrial sites and operations: http://www.pipeinsulation.org. Retrieved December 28, 2011.

3.g. Cool Roof Calculator (DOE). Estimates cooling and heating savings for flat roofs with non-black surfaces: http://www.roofcalc.com: Roof Saving Calculator (RSC). Retrieved December 28, 2011, from http://www.roofcalc.com/index.shtml

3.h. EPAGreenScapesProgram. A website that provides cost efficient solutions for large- and small-scale landscaping. Also includes tips, potential benefits, and case studies: http://www.epa.gov/greenscapes: U.S. Environmental Protection Agency. *Wastes—resource*

conservation—reduce, reuse, recycle—GreenScapes. Retrieved December 28, 2011, from http://www.epa.gov/epawaste/conserve/rrr/greenscapes/index.htm

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3.s. Environmental Specialty Catalog (General Services Administration). Extensive online directory of greener products and services: http:/http://www.greensuppliers.gov/: Green Supplier Network. Retrieved December 29, 2011, from http://www.greensuppliers.gov/

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3.ac. Green Suppliers Network (EPA and National Institute of Standards and Technology Manufacturing Extension Partnership). Collaborative involving large companies that provides low-cost "Lean and Clean" facility assessments to small and medium-sized businesses: http://www.greensuppliers.gov

3.ad. U.S. DOE Industrial Assessment Centers (IACs). Offer free energy and waste assessments to eligible small- and medium-sized manufacturers: http://www.eere.energy.gov

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3.ag. "The Good Haul: Freight Innovations for the 21st Century" (Environmental Defense Fund). Guide that highlights case studies of innovative transportation technologies: www.edf.org

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3.at. Federal and State Incentives and Laws (DOE). Contains a database of federal and state laws and incentives related to alternative fuels and vehicles, air quality, fuel efficiency, and other transportation-related topics: http://www.afdc.energy.gov/afdc/laws/

3.au. Hybrid Trucks Financial Incentives Guide (Environmental Defense Fund). Guide to financial incentives for purchasing hybrid trucks, including federal funding and state and local tax credit programs. EDF also offers customized incentive funding assessments for companies considering hybrid truck fleet purchases: http://business.edf.org/projects/fleet-vehicles/hybrid-trucks-financial-incentives-guide

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3.aw. Fleet Greenhouse gas Emissions Calculator (Environmental Defense Fund). Tool to calculate fleet greenhouse gas emissions using aggregate fuel use data: http://innovation.edf.org

3.ax. EcoTranIT. Web-based software tool for assessing direct and indirect energy consumption and emissions of freight by various transport modes. Calculates energy consumption, carbon dioxide, and other emissions: www.ecotransit.org

3.ay. Fuel and Energy Source Codes and Emission Coefficients (U.S. Energy Information Administration). Lists CO_2 emission coefficients for commonly used fuels to help calculate greenhouse gas emissions from vehicle fuel use: www.eia.doe.gov

3.az. Guides for the Use of Environmental Marketing Claims (U.S. Federal Trade Commission). Reviews laws on environmental claims made in labeling, advertising, promotional materials, and all other

forms of marketing found in Section 5 of the Foreign Trade Policy Act developed by the U.S. Federal Trade Commission: www.ftc.gov

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3.bg. BNA Green Incentives Navigator Library. Subscription service providing guidance on federal and state tax (and nontax) incentives: www.bnatax.com/green

3.bh. Database of State Incentives for Renewables & Efficiency (DOE). Free, comprehensive source of information on U.S. state, local, utility, and federal incentives and policies: www.dsireusa.org

3.bi. Environmental Grants, Loans, and Incentives (Business.gov). List of financial and technical assistance for developers of greener technologies: www.business.gov

3.bj. "Hybrid Vehicles Financial Incentives Guide" (Environmental Defense Fund). Environmental Defense Fund list of U.S. state and federal incentives for alternative vehicles and hybrid trucks: http://innovation.edf.org

3.bk. EPA SmartWay Incentive Programs: www.epa.gov/smartway

3.bl. Clinton Climate Initiative. The William J. Clinton Foundation partners with governments, Non Government Organizations, and businesses to make cities more efficient, ramp up green power generation, and preserve the world's forests: www.clintonfoundation.org

3.bm. Intergovernmental Panel on Climate Change (IPCC). International body charged with assessing the science and potential socioeconomic and environmental consequences of climate change,

established by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO): www.ipcc.ch

3.bn. The Northwest Earth Institute has a number of discussion courses that can be used in organizations or in communities: www.nwei.org

3.bo. The Global Action Plan: http://www.globalactionplan.org, www.globalactionplan.org.uk

3.bp. ISO 14001 is a globally accepted set of standards for certification of environmental management systems (EMSs)

3.bq. The US Environmental Protection Agency has created environmentally preferable guidelines for computers: www.epa.gov/oppt/epp/index.htm

3.br. For power supplies, see www.80plus.org and www.efficientpowersupplies.org

3.bs. *Design for Environment Guide* published by the Minnesota Office of Environmental Assistance: http://www.pca.state.mn.us/index.php/topics/preventing-waste-and-pollution/product-design-and-the-environment/design-for-the-environment-archive.html

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3.bu. Building for Environmental and Economic Sustainability (BEES) is a software tool to help you select environmentally preferable building products: www.bfrl.nist.gov/oae/software/bees.html.

3.bv. Forging New Links*: Enhancing Supply Chain Value through Environmental Excellence,* published by the Global Environmental Management Initiative: www.gemi.org

3.bw. American Chemical Society Education—Green Chemistry: http://portal.acs.org/

3.bx. EPA Green Chemistry Homepage: www.epa.gov/greenchemistry

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3.bz. The University of Oregon specializes in green chemistry: www.uoregon.edu/~hutchlab/greenchem/

3.ca. Green Chemistry Institute: http://portal.acs.org/portal

3.cb. The Toxics Network has information on various chemicals: www.ntn.org.au/

3.cc. ISO 14064 is standard for carbon projects: http://www.iso.org/iso/catalogue_detail?csnumber = 38381

3.cd. The Intergovernmental Panel on Climate Change is the UN body coordinating research on climate change: www.ipcc.ch

3.ce. The Greenhouse Gas Protocol is the emerging standard for reporting on greenhouse gas emissions: www.ghgprotocol.org

3.cf. Forging New Links: Enhancing Supply Chain Value through Environmental Excellence, Global Environmental Management Initiative (GEMI): www.gemi.org/

3.cg. The Pollution Prevention Resource Center provides an overview of the topic as well as links to resources: www.pprc.org/

3.ch. 'The Lean and Green Supply Chain', US Environmental Protection Agency: http://www.epa.gov/wastewise

3.ci. Going Green Upstream: *The Promise of Supply Chain Environmental Management* (2001), Washington, DC: National Environmental Education and Training Foundation (NEETF): http://www.neetf.org

3.cj. Connett, P. and Sheehan, B. (2001) *'A citizen's guide to zero waste—A United State/Canadian perspective: A strategy that avoids incinerators and eventually eliminates landfills'*, www.zerowaste.co.nz/assets/Reports/CitizensGuide.pdf

3.ck. See the GrassRoots Recycling Network website for information on what they did and how much they saved: www.grrn.org

3.cl. The California Waste Management Board has information on waste profiles, laws, loads, etc.: www.ciwmb.ca.gov

3.cm. WEEE (Waste Electrical and Electronic Equipment) Directive: www.ec.europa.eu/environment/waste/weee/index_en.htm

3.cn. For British Columbia's Environmental Protection Programmes, see Driedger, R.J. (2001) 'From cradle-to-grave: Extended producer responsibility for household hazardous wastes in British Columbia', *Journal of Industrial Ecology, 5*(2) Spring, p. 89.

3.co. United Nations Environmental Program (2002) *Global Environment Outlook 3: Past, Present and future Perspectives,* UNEP and Earthscan. www. unep.org/geo/geo3/english/pdfs/prelims.pdf

3.cp. World Business Council on Sustainable Development 'The Business Case for Sustainable Development' http://www.wbcsd.org

3.cq. Energy Star programme for energy-efficient equipment and appliances: http://www.energystar.gov

3.cr. Urban Consortium Energy Task Force (1992) 'Sustainable Energy: A Local Government Planning Guide for a Sustainable Future' http://green.sba.gov/urban-consortium-energy-task-force-applied-research-units-and-projects-1992-program-summary-and-abst

3.cs. The Green Building Council's LEED rating system in available at: http://www.usgbc.org/DisplayPage.aspx?CMSPageID=222

3.ct. Portland, Oregon's G/Rated Program and their Tenant Improvement Guide: http://www.green-rated.org

3.cu. International Society for Industrial Ecology: http://www.is4ie.org

3.cv. The American Planning Association's 'Policy Guide on planning for Sustainability' can be found at: http://www.planning.org/policy/guides/adopted/sustainability.htm

3.cw. U.S. Department of Energy: www.sustainable.doe.gov

3.cx. U.S. Mayors Climate Protection Agreement: www.usmayors.org/climateprotection/

3.cy. C40 is a collection of the world's largest cities working with the Clinton Climate Initiative: www.c40cities.org/

3.cz. International Association of Local Government's Cities for Climate protection programme: www.iclei.org/co2/

3.da. Climate Protection Manual for Cities: www.climatemanual.org/Cities/index.htm

3.db. The Center for a Sustainable Economy provides economic models to determine the impact of environmental market-based tools: http://sustainableeconomy. org

3.dc. Happy Planet Index measures the degree to which a nation is able to provide a high quality of life while protecting the environment: www.happyplanetindex.org/

3.dd. The Index of Sustainable Economic Welfare is similar to the Genuine Progress Indicator (GPI) and has been calculated for nine counties to date: http://community.foe.co.uk/tools/isew/

3.de. The National Electronic Product Stewardship Institute is a non-profit organization of governmental entities that sets priorities for product stewardship initiatives in the US: www.productstewardship.us

3.df. Oregon Benchmarks/Oregon Progress Board: http://egov.oregon.gov/DAS/OPB/obm.shtml

3.dg. Talloires Declaration, www.ulsf.org/programs_talloires.html

3.dh. Global Environment Outlook: www.unep.org/GEO/geo4/

3.di. DSIRE is a comprehensive listing of energy-related incentives in every US state: www.dsireusa.org

3.dj. King County, WA has done an analysis of a number of commonly used landscape products, rating them on a scale from high concern to low, www.govlink.org/hazwaste/publications/COC_Report.pdf

3.dk. The U.S. Environmental Protection Agency has created environmentally preferable guidelines for computers: go to http://www.epa.gov/epp/index.htm

3.dl. The Forum for the Future in the UK makes available for free download the booklet 'Buying a Better World' and also the Sustainable Procurement Toolkit: http://www.forumforthefuture.org.uk/node/1408

3.dm. BEES is software that helps you select more sustainable building supplies: http://www.epa.gov/epp/index.htm

3.dn. JTRnet Archives—Zero Waste Case Studies. This EPA webpage provides information on companies who have achieved greater than 90 per cent recycling: www.epa.gov/jtr/jtrnet/zerocase.htm

3.do. JTRnet Archives—Zero Waste Contacts. Information about zero waste contacts: www.epa.gov/jtr/jtrnet/highrate.htm

3.dp. The EPEAT website offers a registry of products that conform to environmental performance standards for electronics products, from IEEE 1680 to IEEE 2006: http://www.epeat.net

3.dq. U.S. EPA/DIE. The Office of Pollution Prevention and Toxics (OPPT) DfE programme at the US Environmental Protection Agency uses the office's chemical assessment tools and expertise to inform substitution to safer chemistries: www.epa.gov/dfe/pubs/about/index.htm

3.dr. The United Nations Environment Program is a rich resource of environmental information including tools to help assess the risks and trade-offs associated with the life cycle impacts of products and services: www.unep.or.jp/ietc/spc/index.asp

3.ds. In the U.S., the Environmental Protection Agency set up Local Resources Centers, regional groups to support the implementation of environmental systems. Many are housed in universities: www.peercenter.net

3.dt. U.S. Federal Trade Commission, Guides for the Use of Environmental Marketing Claims: www.ftc.gov/bcp/grnrule/guides980427.htm

3.du. *LCA for mere mortals* by Rita Schenck, published by the Institute for Environmental Research and Education, www.iere.org/store/products/88-lifecycle-assessment-for-mere-mortals.aspx

Program management is a rapidly emerging offshoot of project management. So much so that AT&T, IBM, and other organizations, both large and small in all sectors, have initiated a push to certify program managers. And, although universities offer courses in program management, there are few books available to guide program managers through this field that requires a broad level of knowledge and experience.

The definitive reference on program management, ***Program Management: A Life Cycle Approach*** provides this much needed guidance. Edited by Dr. Ginger Levin, the second person to become a PMI® certified program manager (PgMP®), this handbook presents a cohesive compilation of program management knowledge from more than 20 certified PgMP®s. It considers the entire program life cycle and its phases—from initiation to sustainability.

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