



Chapter 1

Program Management

A lot has changed with respect to program management since we introduced the first edition of this book. Much of the literature that existed at that time consistently confused program management with project, portfolio, or operations management. Today, multiple standards exist and many volumes of white papers, articles, and books are readily available. As a result, the general knowledge about *what* program management is and *why* it is valuable has increased markedly.

While many different aspects and approaches to program management have emerged, we have been pleased to watch a convergence on what we believe is the single most important aspect of program management: it's about achieving business results.

Even the various standards, which by nature take a broad brushstroke at the subject of program management, state that program management is all about benefits realization, and benefits directly refer to achievement of the business goals of the enterprise and the organizations within the enterprise.

The purpose of this introductory chapter is to establish the foundational elements of programs and program management *as it is practiced in our organizations and many of our clients' organizations*, and explain how it is used to achieve a firm's strategic business goals.

This is the foundational information needed by anyone considering the introduction of program management within their organization, or for anyone needing a better understanding of how their current use of program management can be further matured to gain improved business results and establish a stronger link between execution and strategy.



DEFINITIONS AND CONTEXT

One of the primary challenges with creating standards, and therefore standard definitions, is that they have to be broad in nature to encompass a wide range of applications, but specific enough that individuals can identify and correlate the work they do on a day-to-day basis within the standard.

Programs Defined

The two leading standards with respect to program management are of course *The Standard for Program Management* by the Project Management Institute (PMI) in the U.S., and *Managing Successful Programmes* by the Office of Government Commerce (OGC) in the U.K. From an academic and standards perspective, each of these organizations has created a useful but differing definition for a program.

PMI defines a program as “a group of related projects managed in a coordinated manner 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.”¹

The OGC defines a program as “a temporary flexible organization created to coordinate, direct and oversee the implementation of a set of related projects and activities in order to deliver outcomes and benefits related to the organization’s strategic objectives.”²

From a practice standpoint, we can utilize either definition, depending on the organization we are working with and their particular view of what a program encompasses. There are a few points of particular interest, however, that we tend to point out regarding these definitions when teaching or coaching. We particularly like the fact that the PMI standard identifies that a program includes “elements of related work outside of the scope of the discrete projects.” As we explain in Chapter 4, by taking a *whole solution* or systemic approach to defining and structuring a program, one quickly realizes that a program needs to encompass more than the constituent projects within the program to be truly successful.

Additionally, the OGC standard brings out the fact that programs exist “to deliver outcomes and benefits related to the organization’s strategic objectives.” This is a critical distinction in practice: programs must exist to further the strategic business goals of an enterprise. Otherwise it becomes



work for the sake of doing work—a result that unfortunately is all too common in many organizations.

Finally, each standard describes a program as consisting of a group or a set of “related” projects. We would rather the standards be a bit more precise regarding this point. If the projects are merely related, what distinguishes a program from a portfolio in these definitions? In practice, the projects within a program have a higher level of relationship. They are not just related, but rather highly *interrelated*. The distinction here is that each project is so dependent upon one or more of the other projects on the program that it cannot succeed on its own. If one of the projects on a program fails, it is highly likely that the program in its entirety will fail. This is an important distinction because it is not necessarily the case for a portfolio of related projects.

Understanding these subtleties with regard to the definitions for a program will help in the application of the term within your organizations.

Program Management Defined

While we were writing the first edition of this book, a common, universally accepted definition of program management did not exist. When we researched the definition we found many versions that were similar in some ways and quite different in other ways. Interestingly, the same is true today, only there are fewer versions available.

Although we have slightly refined our original definition of program management, we continue to find that it is most effective for people who are either implementing program management into their organizations or looking to mature their existing program management culture and practices.

Program Management Definition

Achieving a set of business goals through the coordinated management of interdependent projects over a finite period of time.

This definition describes a model of program management that exists within an organization that has a high degree of program management maturity, what we call a *program-oriented organization*. Within a program-oriented organization, program management exists as a critical



6

PROGRAM MANAGEMENT

element within the business operations of the enterprise. It is in this context that the maximum gain will be realized from the existence and practice of program management. For this reason, this definition contains a number of key tenets, each of which are addressed below.

Benefits Management

Benefits realization through the achievement of an organization's business goals is the overriding objective of any program, and therefore the management of a program. For this reason our definition of program management begins with this realization: "achieving a set of business goals." By way of example, in product or service development, a key program-level goal is to introduce capabilities before one's competitors. In a competitive environment, time-to-benefits is arguably the most closely tracked metric by both the program manager and senior management. We do not dispute that delivery of the right product at the right time is critical, especially since we have had plenty of personal experiences where that was the primary measure of success. However, delivery of the product is only the mechanism to realize the *true business goals*, such as capturing additional market share, increasing profit through sales and gross margin growth, and strengthening brand value by being the first to market with compelling features and usages.

Coordinated Management

Most programs require the work of many functions within an organization. Therefore they must be organized into a set of project teams that are cross-discipline and cross-functional. Using the phrase "coordinated management" of multiple projects in our definition means that the activities and outcomes of each project team are executed through a common program framework and synchronized by the program manager. Steven Wheelwright and Kim Clark properly articulated the need for effective cross-functional management many years ago:

Outstanding development requires effective action from all of the major functions in the business. From engineering one needs good design; from marketing, thoughtful product positioning, solid customer analysis, and well-thought-out product plans; and from manufacturing, capable processes. But there is more than this. Great products and processes are achieved when all of these functional activities fit well together. They not only match in consistency, but they reinforce one another.³



Interdependent Projects

For program management, cross-discipline and cross-functional coordination and integration has to be extended to include *cross-project* coordination and integration. Every program is made up of multiple projects, each of which is most likely cross-discipline in nature. This concept is described by Mary Willner, a senior manager at Intel Corporation:

With one set of desired business results for the program, coordination extends beyond just schedule coordination; it also requires coordination to ensure the stated business objectives are met. Which, if compromises are required (e.g. cost, feature, schedule), its resolution is managed as a coordinated effort across the interdependent projects.⁴

As the term implies, “interdependent projects” are those that have a mutual dependence on the output of other projects in order to achieve success. Commonly, the interdependencies come in the form of deliverables that are the tangible outputs from one project team that become the input to another project team or teams. Program management ensures that the dependencies between the multiple projects are managed in a concerted manner.

Finite Period of Time

A “finite period of time” means that a program is a temporary undertaking, having a point of beginning and a point of ending. This can be contentious as some definitions describe a program as an ongoing endeavor. From our perspective, if this is the case the program is really part of the normal *operations* of the business, therefore not a discrete program and may be better defined as an initiative. By contrast, for a program in which a new capability or organizational change is created and delivered, the program must have both a beginning and an ending in order to effectively measure business results.

This point came to the forefront when we were asked to assist a leading customer relationship management software company with the implementation of program management into their product development and IT businesses. The company historically has had an agile development and delivery culture, which caused much debate to ensue among the senior leaders of the company on whether a program should have an end, or rather should be a continuous process in the spirit of the agile methodology. The debate ended with the realization that a program did in fact have to end in order to measure whether the business goals driving the



8

PROGRAM MANAGEMENT

need for a program were achieved. In this case, the programs that deliver new capabilities to their software platform or into their IT infrastructure are time-bound (usually a year or six months).

PROGRAM MANAGEMENT CHARACTERISTICS

A definition alone does not provide adequate description of the value that program management can bring to an enterprise. There are five core tenets underlying program management practices that help to describe the true value of program management as a unique business function.

Establishes Ownership and Accountability

In many organizations that do not utilize the program management model, ownership and accountability for the business results associated with the program normally falls on the functional managers of the business. Generally, in project-oriented organizations ownership and accountability of a program can pass from one functional group to another—for example, from research during the concept phase, to marketing during the feasibility phase, to engineering during the planning and execution phases, to manufacturing during the production readiness phase, and finally, back to marketing for capability release. Passing the ownership baton can work well in a perfectly conceived, planned, and executed project, but quickly breaks down when problems begin to surface and personal accountability is required on the part of one or more of the functional managers. With a program management model, there is no debate or subjectivity about who owns, and is accountable for, the business success or failure of the program; the program manager assumes this full responsibility throughout the program cycle.

Strategic in Nature

The program management discipline helps to ensure that a program is closely aligned to, and directly supports, the achievement of a business's strategic goals (Chapter 3).⁵ In effect, it is used to direct the activities involved with the *implementation* of strategy (see “Turning Strategy into Action at Intel”). Figure 1.1 illustrates the link between program management and business strategy.



Program Management Characteristics

9

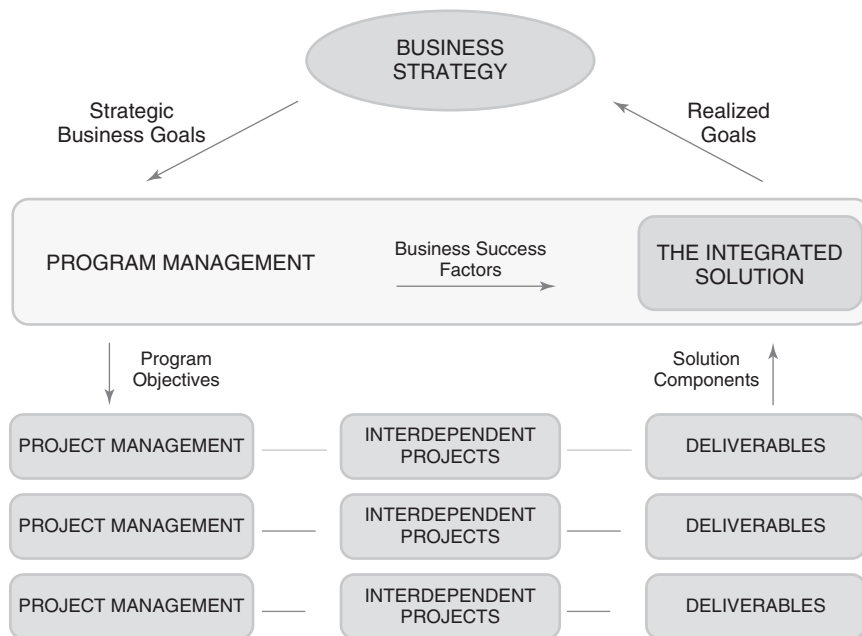


Figure 1.1 The strategic nature of program management.

Program management links execution to strategy by integrating the work flow and deliverables of multiple interdependent projects to develop and deliver an integrated solution. This integrated solution becomes the means by which the strategic goals of the business are achieved.

Turning Strategy into Action at Intel

An example from a well-known technology company provides a good illustration of how program management is used to deliver strategic business results.

Several years ago, Intel Corporation developed a strategic goal to increase the amount of revenue it received from each of its microprocessor products by providing added capabilities within the product. One of the strategies set in motion to achieve this goal was to adopt a platform approach that would serve to integrate various technologies into a single product.

One of the original platforms developed integrated both computing capabilities and wireless communications technologies into a single integrated circuit. Legacy solutions involved a microprocessor to handle computing and a separate component, or add-in card, for wireless communication for a personal laptop computer. Intel's *strategy* to achieve this technology convergence resulted in the development of a new family of microprocessors that combine the two technologies. The market now knows the resulting product as Centrino™.



10

PROGRAM MANAGEMENT

Critical to effectively executing its strategies is Intel's use of the program management discipline to direct the activities of multiple technology-specific project teams. In this example, the program manager responsible for the development and launch of the new Centrino™ microprocessor was responsible for the integration of the computing project, wireless project, multiple software projects, the test and validation project, the manufacturing project, and more. In short, he was responsible for executing the strategy in the form of a new product introduction. But more importantly, he was responsible for delivering the business objectives driving the need for the program—greater revenue per product, increased profit margin, and increased market share.

Aligns Functional Objectives to Business Goals

Each functional group within a company normally has a set of objectives to achieve as an organization. What happens if these functional objectives do not support, or worse yet, are in direct conflict with the strategic business goals of the company? This dilemma is a difficult problem facing many businesses today and is known as **agency theory**.⁶ Agency theory occurs when functional managers design objectives that provide the greatest benefit for their own organization and consider the strategic goals of the company as a secondary consideration.

Program management can be used to reduce the negative effects of agency theory by aligning functional objectives to corporate and business unit objectives. In a program-oriented enterprise, the various business functions take on a different role than in either a functional- or project-oriented organization. In a program-oriented organization, the functions exist to support the achievement of business objectives, which are realized through the successful execution of the organization's programs. Therefore, much of the *functional group's* success is dependent upon *program* success. This change in how success is measured serves to effectively align the business functions not to functional success, but rather to program and business success.

Fosters Cross-Project and Multi-Disciplined Integration

Programs, by design, are cross-project in nature in that they involve multiple projects that are coherently and collectively managed to achieve the program output. Additionally, the constituent projects of a program are normally centered on individual disciplines within an organization,



such as design, engineering, customer support, or marketing. To reconcile the cross-project, multi-disciplined nature of programs, many organizations employ a matrix structure to span the various functions needed to effectively implement a program. Program management becomes the common thread that sews the matrix together and enables the cross-project teams to perform cohesively. Organizationally, program management provides the opportunity to manage work efforts across the traditional (hierarchical) line structure of an organization, thus contributing to faster decision-making and improved productivity.

Enables Distributed Collaboration

A new business model has emerged where knowledge work is digitized, disaggregated, distributed across the globe, produced, and reassembled again at its source.⁷ Team collaboration can now occur without regard to geographical boundaries or distances. Companies that are thriving in this new business model are the ones that are successfully integrating this distribution of work. Because of its relationship to systems thinking, program management has emerged as an effective method for managing such work. Within a program, the program manager synchronizes the work of the project teams as they create their respective pieces of the whole solution, and then works to integrate the output of the specialized knowledge workers into a total, efficient solution.⁸

The backdrop of defining program management now coupled with these five tenants—ownership and accountability, strategic focus, alignment of objectives, cross-project and multidiscipline, and distributed collaboration—characterizes the business value of program management to the organization.

THE PROGRAM MANAGEMENT CONTINUUM

In reality, not all companies utilize their program management discipline as an extension of their business processes. Therefore, the role of the program manager can vary greatly from company to company (or even within different divisions of the same company).

In organizations where the level of program management use is high, it is often viewed as part of the business management function and is linked to corporate and business unit strategy. We refer to these organizations

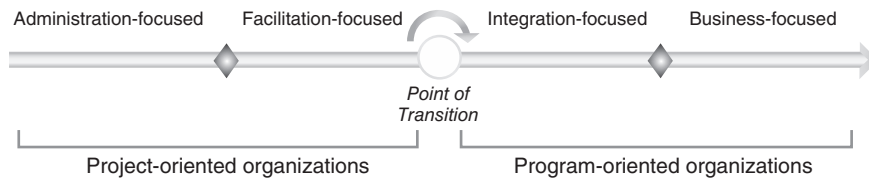


Figure 1.2 The program management continuum.

as being *program-oriented*. Conversely, in organizations where program management is not used to its full capacity, program management normally serves as a coordination function and an extension of project execution. We refer to these organizations as *project-oriented*.

Figure 1.2 illustrates program management orientation as a continuum with four distinct stages: administration-focused, facilitation-focused, integration-focused, and business-focused.

In general, organizations that are primarily *project-oriented* utilize program management practices as either an administrative or facilitative function. As one moves to the right of the center point on the continuum, we find *program-oriented* organizations that realize the potential of program management to serve as an integrator of project outcomes that is at least linked to the business engine of the company.

Details on the various stages of the program management continuum reveal the varying view and use of program management, and therefore the variation of roles and responsibilities of program managers.

An ***administration-focused organization*** demonstrates a strong focus on single projects, and very strong functional or line management control of the projects. The program management function is quite limited within these organizations and is utilized primarily as an administrative, data-gathering, and activity-monitoring function.

A ***facilitation-focused organization*** is also project-oriented, but the projects are normally grouped into programs, usually organically rather than strategically. Program management serves as a coordination function that facilitates cross-project communication and low levels of collaboration. It is typical to find organizations using portfolio management techniques when operating at this point on the continuum, with programs often serving as subportfolios instead of true programs.



An **integration-focused organization** views projects as part of a program which is driven from business strategy. At this point on the continuum, control of the projects shifts from the functional or line managers to the program managers. The primary focus of program management is the integration and synchronization of work flow, outcomes, and deliverables of multiple projects to create an integrated solution.

A **business-focused organization** is fully devoted and disciplined in its use of program practices. Programs are tightly linked to strategy and serve as the execution mechanism to realize business goals. In the business-focused culture, organizational hierarchical command and control is replaced by empowerment and accountability on the part of the program manager.

Organizations typically evolve the use of program management practices and as such, move from left to right along the continuum as the needs of the business demand. However, as an organization moves from left to right (increasing its program management maturity), it is not relieved of the program management responsibilities it has left in the earlier stages of the continuum. Rather, the responsibilities are cumulative. Even if one reaches the final stage of maturity and is operating as a business-focused program management organization, there are still a number of administration, facilitation, and integration duties to fulfill.

At the center of the continuum lies an important point we refer to as the program management *point of transition*. The point of transition is a philosophical decision point where the senior leaders of an organization make a purposeful and concerted choice to move their organization from being primarily project-oriented to being program-oriented. The transition point represents the formal acknowledgment by senior management regarding the importance of the program management discipline as a strategic benefit to the organization and the need to formally and actively empower the program manager to fulfill this role.

We do not advocate that all organizations should move across the point of transition and become program-oriented. There are many organizations that are quite successful and operate effectively as project-oriented enterprises due to the nature of their business. They should continue to do so and look for aspects of program management that are beneficial to the way they operate.



14

PROGRAM MANAGEMENT

Frog, a leading product strategy and design company, has been on a journey of increasing program management maturity for a number of years. Richard Vander Meer, Vice President of Global Program Management, described the company's journey:

When we created the program manager role, we hired people to be note-takers and meeting schedulers. But as the needs of the company changed, we needed to create a more robust function. Today, our program managers are the main interface between the client and the program team, and they have P&L (profit and loss) responsibility for the client engagement program.

For the companies that realize the need for transition from one level of program management maturity to another, they must do so knowing that crossing the point of transition creates considerable change in culture and requires a clear vision and strong leadership. In general, the following changes may be needed:

- Roles and responsibilities realignment
- Skills and competency development
- Talent acquisition
- Team and organization structure adjustments
- Strategy adjustments
- Shifts in decision empowerment
- New practices and success measures
- Different incentives and individual performance indicators

We cover the organizational impacts of crossing the *point of transition* in detail in Chapters 12 and 13. The intent of discussing them here is to give you a broad understanding of the changes that need to be in place organizationally if your goal is to realize the full power of program management.

The program management continuum is used throughout this book to demonstrate the variations in the implementation of program management within companies today. The concepts in this book are centered on the practices of program-oriented enterprises. However, there is one important point we want to make before moving on to another topic. It is critical for the senior leaders, functional and line managers, program managers, and project managers within a company to realize where they are on the program management continuum in order to align expectations, and properly set roles and responsibilities as well as empowerment and



decision-making boundaries for the various actors. As the example titled “An ‘Ah-ha’ Moment” illustrates, it is common that we find a difference of opinion where an organization sits on the continuum.

An “Ah-ha” Moment

The senior management team of a major U.S. defense contractor was situated in one of the company’s training rooms and engaged in a lively discussion about the performance of their program managers. At the center of the discussion was a question posed to them about the program manager’s role in driving business results for their organization.

Eventually the discussion shifted to the individual abilities of each of their program managers to fulfill an expectation that they operate as the CEO of the program they are managing. At that point Frank DeYoung, R&D Director for one of the product line businesses, reset the discussion by stating, “This really isn’t about the abilities of each of our program managers. I think it’s about setting clear expectations and then performing to those expectations.”

With that, the discussion moved to the Program Management Continuum and a detailed description of organizational culture, roles, responsibilities, decision making, and empowerment for each of the stages of the continuum. The senior leaders were asked where on the continuum they *expected* their program managers to be operating. Lively discussion again ensued, with consensus suggesting the leadership team expected the program managers to be operating in the far right stage of the continuum, “As a business manager,” it was mentioned.

They were then asked another question: Where do you believe the program managers currently see themselves operating? This time the discussion was more subdued because they realized a problem was about to surface. The leaders agreed that the program managers were currently operating to the left of the center point of the continuum (see Figure 1.3). The gap between expectation and reality was now apparent.

A long period of silence was finally interrupted by DeYoung, who stated, “I see the problem, and this team owns fixing it.” DeYoung later described this as his “Ah-ha Moment” about program management.

So, why is there a gap between expectations of how the program managers should operate within this company and how they are actually performing? The

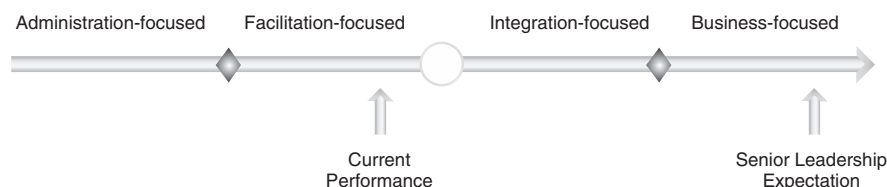


Figure 1.3 The gap between expectation and reality.



16

PROGRAM MANAGEMENT

senior leadership team characterized the gap as having two primary causes. The first cause was described as an atrophy of their program-oriented culture, which was due to prior disinvestment of their program management office and much of the infrastructure that was in place to sustain and enable the program management discipline.

The second cause was the senior leadership team themselves. Each of the leaders had been a program manager on his or her journey to senior business leader roles. However, they had those roles at an earlier time when the organization was fully program-oriented and they were in fact able to operate as true business managers in charge of a program. The realization was that they expected their program managers to operate in like manner, but the organization's culture no longer supported it.

This company is not unique. Nearly every organization we work with has a gap between where they are currently operating with respect to program management and where they want to operate going forward. This is the program management journey to improved benefits realization, a journey that is often set in motion to realize improved business results and over time requires resetting to assure expectations are aligned and being met.

THE RELATIONSHIP AMONG PORTFOLIO, PROGRAM, AND PROJECT MANAGEMENT

For program-oriented organizations, the relationship between portfolio, program, and project management is normally well defined and understood. As illustrated in Figure 1.4, portfolio management is a method used to prioritize programs according to the overall business strategies of the

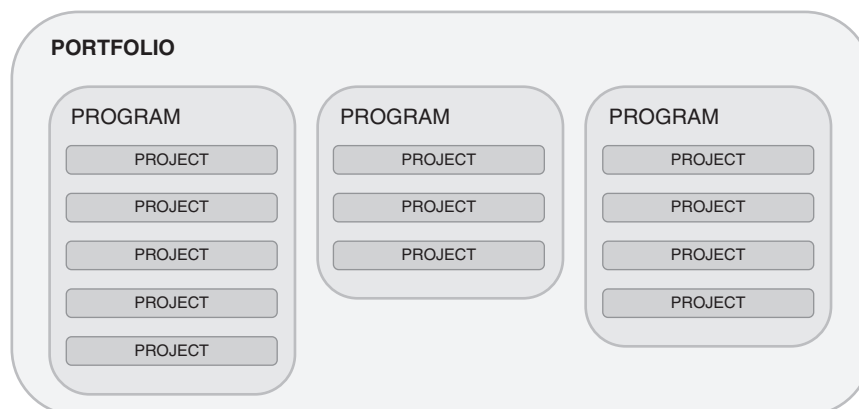


Figure 1.4 Portfolio, program, and project management relationship.



The Relationship among Portfolio, Program, and Project Management 17

organization, while program management is responsible for the actual execution and delivery of those strategies.

Further, the delivery of the strategies is accomplished through integration of a multitude of outcomes that are a result of the management of multiple projects within a program. The relationship between portfolio, program, and project management is summarized as follows:

- A *portfolio* consists of multiple programs that represent an organization's investment in the achievement of its strategic goals. The programs within the portfolio are the mechanisms used to execute the strategic goals defined at the enterprise or business unit level.
- A *program* consists of a set of interrelated projects whose outcomes are integrated at the program level to create a whole solution that may take the form of a product, service, or change state that becomes the means to achieving business goals.
- A *project* is a component of a program from which a set of work outcomes or deliverables contribute to creating the whole solution. It is at the project level that the tangible goods are created by discipline-specific work teams. Additionally, projects also exist as stand-alone work efforts that are independent of programs.

Program-oriented organizations have a strong relationship between portfolio, program, and project management. This relationship is not only in place, it is often well defined and understood across the organization. These organizations have the opportunity to consistently ensure that the tangible goods generated at the project level are effectively integrated at the program level and the resulting solution is in alignment with the strategic goals of the business.

In contrast to program-oriented companies, project-oriented companies often have a limited relationship between portfolio management, program management, and project management. Because of this, it is common for confusion to exist between the three forms of management. The next two sections delineate the major differences between program management and project and portfolio management.

Differentiating Program and Project Management

Table 1.1 provides a summary of the important differentiating factors between program and project management. The primary differentiator is the fact that program management is *strategic in nature and focused on*



Table 1.1 Program and project management differentiation.

Differentiating Factor	Program Management	Project Management
Strategic versus Tactical	<i>Strategic</i> in nature, focused on business success	<i>Tactical</i> in nature, focused on execution success
Alignment	Aligned to the business goals of the organization	Aligned to the program objectives
Responsibility	Successful delivery of the entire integrated solution	Successful delivery of a portion of the integrated solution
Work Effort	Assures the cross-project work effort remains feasible from a business standpoint	Assures work effort generates deliverables on time, within budget and at required performance levels within the project's specialty
Risk	Concerned with cross-project risk affecting the probability of program and business success	Concerned with single-project risk affecting the probability of project success
Life Cycle	Involved in all stages of the program cycle, from definition to end of life	Primarily involved in the planning and implementation stages of the program cycle
Process Orientation	Ensures consistent use of common processes by all project teams	Ensures effective and efficient implementation of processes on a single project
Control	Monitors and controls the delivery of cross-project deliverables	Manages and controls the tasks associated with development of project deliverables
Change	Navigates change as it is encountered and resets the program to changes in business goals	Controls change to an established project baseline



The Relationship among Portfolio, Program, and Project Management 19

the delivery of an integrated solution, while project management is *tactical in nature and focused on the successful execution of a portion of the integrated solution*. All other factors in the summary are subfactors of this primary differentiator.

Alignment

Managing a program means ensuring that the program remains in alignment with, and in support of, the strategic goals set forth by senior management. This includes alignment with the organization's strategic plan, its portfolio and roadmap, and the business-related goals such as financials, market penetration, and technology advancement. The project manager, in turn, is responsible for ensuring the work and resulting deliverables of their project are in alignment with and in support of the program objectives.

We refer to project management as tactical in nature based on PMI's Project Management Body of Knowledge (*PMBOK*®) as the dominant industry practices standard where project management is about management of a single, individual project, whose primary focus is accomplishment of the triple-constraints (time-cost-scope).⁹

Responsibility

On a program, the program manager's job involves the successful delivery of an integrated solution that requires management of the interdependencies across the multitude of projects. By way of example, if an engineering project team encounters a quality issue that will impact the timing of their deliverable to the manufacturing project team, the program manager must determine if it is better to delay the deliverable (and the work of the manufacturing project team) or reduce the quality target. This is a cross-project issue to be solved at the program level. In contrast, the project manager is focused on the scope of work within a single project and is responsible for the successful delivery of the outcomes of the project to the program.

Work Effort

A program manager work effort focuses heavily on the integration and synchronization of the work outcomes of the constituent projects on the program. In contrast, the work effort of the project manager focuses only on project-centric deliverables.



20

PROGRAM MANAGEMENT

Risk

Similar to the scenario above, both the program manager and the project managers are responsible for identifying and managing risk on a program, but do so in different dimensions. Program risk management involves identifying and managing cross-project risks that may affect the overall probability of business success of the program.¹⁰ Project risk management, on the other hand, involves identifying and managing risks that may affect the probability of technical success for a single project (see Figure 7.3 in Chapter 7 for an illustration of this concept).

Life Cycle

Life cycle in this context pertains to all of the stages that a program progresses through from the time of its inception to its eventual closure. In a program-oriented organization, program management is involved in all stages of the life cycle. This includes the definition, planning, execution, operational, and closure stages. By contrast, project management is typically associated with the planning and execution work cycles.

Process Orientation

From a process perspective, the distinction between program and project management is in how processes and procedures are established and executed. The program manager is responsible for ensuring that company processes and procedures are established on the program, and that they are consistently used by all project teams. The project manager is responsible for effective and efficient implementation of the processes and procedures established by the program manager, as well as those established by the managers of functional organizations for their particular discipline.

Change

Critical to project management is the establishment of a baseline from which to effectively execute. Any change introduced is normally tightly controlled with a penchant for change avoidance in order to prevent rework and drive assurance of the scope and timeline. Critical to program management, however, is awareness of change occurring in the business environment that will affect the success of the program. Program managers must be adept at navigating change and understanding the impact of change on the business goals driving a program.



Control

As with independent projects, project management on a program involves monitoring and controlling the progress of the tasks being performed to create the project deliverables. Program management is focused on a level higher, which involves monitoring and controlling the synchronization of deliverables between the project teams on a program in support of creating an integrated solution.

DIFFERENTIATING PROGRAM AND PORTFOLIO MANAGEMENT

At times, confusion also exists between program management and portfolio management. One of the causes of this confusion may be that they are often both broadly defined as the management of multiple projects. This is, however, where the similarity ends. This section provides a brief characterization of portfolio management for readers who are not familiar with the process and describes the key distinctions between portfolio management and program management.

Characterizing Portfolio Management

The senior management team of an organization utilizes the portfolio management process to synthesize current and future collective intelligence of the organization to select, prioritize, fund, and resource the portfolio of opportunities that will best achieve the attainment of the strategic goals. In synthesizing the intelligence of the organization, various key factors about the business and business environment must be analyzed to obtain the right mix and number of opportunities. Such factors may include the following:

- Company strategic objectives
- Customer wants, needs, and usage requirements
- Competitive intelligence
- Current and future technology capability of the enterprise
- Risks and potential rewards
- Resources and other assets available to plan and implement the portfolio¹¹



22

PROGRAM MANAGEMENT

The portfolio management process is an ongoing process that ensures a company is working on the opportunities that offer the highest probability for attractive financial and strategic returns at the lowest possible risk. Opportunities are ranked and prioritized based upon a set of criteria that represent *value* to the organization. Resources are then allocated to the highest value and most strategically significant opportunities. Low-value opportunities must be cut, returned for redefinition, or put on hold until adequate resources become available.

Summary of Program and Portfolio Management Differentiation

Table 1.2 provides a summary of the important differentiating factors between program management and portfolio management. The primary

Table 1.2 Program and portfolio management differentiation.

Differentiating Factor	Program Management	Portfolio Management
Process versus Function	A management <i>function</i> utilized to determine the business and execution feasibility of a single idea, and then turn the idea into an actionable plan that is successfully executed and delivered to the customer	A <i>process</i> utilized to evaluate, prioritize, select and resource a collection of new ideas that best contribute to the attainment of the strategic goals of an organization
Value	Focused on ensuring the business value is attained for a single opportunity within a portfolio	Focused on determination of the business value of all existing opportunities of the organization
Risk	Concerned with cross-project risk affecting the probability of program and business success	Concerned with balancing risk and return for the aggregate portfolio of opportunities
Resources	Ensuring a single opportunity is adequately staffed with the right resources (number, skills, experience)	Aligning an organization's resources to opportunities that provide the greatest strategic value to a business



differentiator is the fact that *portfolio management is a decision-making process, while program management is a key management function within an organization*. All other factors in the summary are subfactors of this primary differentiator.

Value

The heart of the portfolio management process is the ability of the senior management team to determine the business value of the various opportunities available to the company. Therefore, the portfolio management process identifies the critical factors that determine opportunity value (common factors were noted previously in this section).¹²

Once the business value is determined for an opportunity within the portfolio, and the opportunity is selected for funding and resource allocation by the senior management team, the opportunity is assigned to the program management function within the enterprise. Program managers are then responsible for turning each of the portfolio ideas into a tangible outcome and *delivering* the value to the senior management team.

Risk

The senior management team manages portfolio risk from both a macro and micro perspective. Macro-level risk management of a portfolio involves determining the overall risk level of the aggregate opportunities within the portfolio, then determining the right balance of opportunities based upon the risk tolerance of the organization. From a micro-level perspective, senior management, along with the appropriate knowledgeable members of the organization, must assess each key element of the portfolio in order to balance the portfolio risk against the potential reward.

Once an opportunity is funded, the program management function assumes ownership of the management of the risk for the duration of the program. As stated earlier, management of risk at the program level is focused on overall probability of achieving the business goals driving the need for the program.

Resources

Businesses typically have more ideas than human and non-human resources to carry them out. As a result, resources can become



overcommitted and weighed down by an overwhelming list of opportunities to pursue. Portfolio resource management involves aligning resource demand to capacity, and assigning resources to opportunities that provide the greatest value to a business. The end result of a well-executed portfolio management process is a balance between high-value opportunities and the number of available resources to execute those opportunities.

Upon approval and funding of an opportunity, efficient and effective resource management for the development of the opportunity becomes the responsibility of the program manager and the functional managers of the organization. In order for the value of an opportunity to be realized, the program designed to deliver the opportunity must be adequately staffed with the correct number of resources that possess the right skills required and the appropriate level of experience.

IS PROGRAM MANAGEMENT A NEW CONCEPT?

Interestingly, many view program management as a relatively new phenomenon. We surmise this is a matter of perspective. If one's perspective is related to the work of the various project management organizations such as PMI, OGC, and IPMA (International Project Management Association), your perspective certainly may be that program management came to light in the first decade of the twenty-first century. However, if one has been involved in practicing program management for a number of years, the perspective may be different. Program management in fact has formally existed in companies for over six decades. The first documented evidence of program management in the U.S. dates back to the 1950s (see "On Origins of Program Management").

Regardless of its history, the program management discipline has now fully emerged from its early practices and is being broadly adopted across both for-profit and nonprofit industry sectors. Various authors have attributed this to the current business environment, which can be described as dynamically changing, ambiguous in nature, and more complex than ever before. They recognize that traditional management practices have limitations with this new business environment and that program management practices are well suited to provide the necessary means to integrate project outcomes with business strategy in fluid situations with high levels of complexity.



On Origins of Program Management

The exact origin of program management is not definitively known. The U.S. Military argues that they were the first to have developed and implemented program management. The Manhattan Project was the first to use program practices (in the 1940s) to create the atomic bomb.¹³ Program management practices were also said to be used (in the 1950s) on the Atlas Program to create the first intercontinental ballistic missile.¹⁴ Our own research shows the first documented evidence of program management dates back to 1957 with the formation of the first program office, then called the Special Project Office (SPO), within the United States Department of the Navy.¹⁵ The SPO was established to manage the development of an underwater ballistic missile launch system. Indeed, the structure of the missile launch system program mirrors the program management structures utilized today—a series of interrelated projects (launcher, missile, guidance, installation, navigation, operations, and test) collectively and coherently managed as a program. In the early 1970s, the program management discipline became popular across the United States Department of Defense and the SPO became the first program management office.

On July 1, 1971, the doors of the Defense Management School, later called the Defense Systems Management College (DSMC), opened at Wright-Patterson Air Force Base to admit the first students enrolled in the 20-week program management course.¹⁶ The original mission of the DSMC was to: 1) conduct advanced courses in study of program management; and 2) assemble and disseminate information concerning program management. In 1993, the name was again changed, to the Defense Acquisition University (DAU) to reflect a new mission and broader scope of academic study and research in program management.¹⁷ Today, thousands of military and military support personnel graduate from DAU annually.

Until the 1980s, the program management discipline and the DSMC that resided within the military and defense industries were well-kept secrets. During this time period, companies that maintained both defense and commercial businesses, such as Boeing, Lockheed, and other aerospace companies, began migrating the program management discipline and management model from their military divisions to their commercial divisions. Program management proved to be very effective in the management of complex product development efforts. Today, the program management discipline and practices continues to expand throughout many commercial and private industries.

ENDNOTES

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