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1.1

Why Do We Need Project Portfolio Management?

> Do traditional measures of project success miss the true business objectives? Scope, Time, Cost and Quality are only components of the objective, rather than independent measures of success.
>
> Harvey Levine, June 2000

Could what I said five years ago be considered blasphemous? Imagine going against conventional wisdom at a time when project portfolio management (PPM) was just emerging as a body of thought. Project management was finally getting its well-deserved recognition, and everyone was focusing on spreading the gospel of bringing projects in on time, within budget, and meeting scope and quality objectives. Well, almost everyone.

Why would anyone want to shoot holes in the acceptance of project management? No one is suggesting that project management is wrong. However, limiting our focus to the critical measures of project success confuses the means to an end with the end itself.

Almost everything written about measurements of project success dwells on the four pillars of success: scope, time, cost, and quality. We have been taught to identify the goals for success in each of these areas and then to create plans that balance these objectives.

Then we implement practices and use computer-based tools to measure how well we are accomplishing these objectives. When we meet these objectives and satisfy the project stakeholders, we consider the project to have been successful.

However, most executives are not interested in these areas of measurement. Instead, they talk about profitability, return on investment, delivery of benefits, and taking advantage of windows of opportunity. We used to say that executives are interested in just two things about projects: when they will be finished and what they will cost. Not anymore. Now (in the for-profit arena) they ask:

- What mix of potential projects will provide the best utilization of human and cash resources to maximize long-range growth and return on investment for the firm?
- How do the projects support strategic initiatives?
- How will the projects affect the value of corporate shares (stock)?

Similar issues apply to the nonprofit and government operations where optimizing the use of limited funds and resources and support of missions and strategies is vital. While PPM can be effectively applied to both the public and private sectors, most of the examples in this book use a for-profit enterprise as the model. With minor adjustments, PPM can be adapted to nonprofit and government operations.

Perhaps this is an oversimplification. However, if we start with this premise and examine its meaning, we can begin to realize the tremendous impact of this observation on the way that we conduct project management and even in the way that we select and implement project management tools.

The Emergence of Project Portfolio Management

Certainly it is not news to anyone that the basic concept of project management has evolved to what we call *enterprise project management*. At first, many people in the PM community thought that this shift was more of a way of aggrandizing project management—sort

of a pompous elevating of project management to a higher level of importance. Later we came to realize that enterprise project management was a reflection of the importance of consolidating and integrating all of the organization's projects—for universal access and evaluation. Now we come to find that enterprise project management entails consideration of potential projects as well as approved projects. We also find that the emphasis has shifted from traditional project-centric objectives to higher-level operational objectives.

Projects, executives have come to realize, are the basis for the future profitability of the firm. Hence, they have a growing interest in how projects are selected and managed. They are precipitating an increased demand for more standardization and automation of project management. But what they are asking for is different from the requests from traditional project management sources. And what they are calling this emerging project management protocol has also changed. It is no longer just *project management* or even *enterprise project management*. It is now called *project portfolio management*.

Bridging the Gap Between Operations Management and Projects Management

Project portfolio management is the bridge between traditional operations management and project management (see Chapter 3.1). For organizations that will be depending on project success for the success of the overall enterprise, a well-structured bridge, built on a good foundation, is the preferred way to overcome the traditional gap between operations and projects management.

In PPM, it is assumed that the enterprise positions itself for increased strength and profitability through its selection and execution of projects and ensures that it continues to thrive in a world of constant change and the threat of competition.

The basic elements of PPM are not new, nor is the environment in which it is applied. However, before the emergence of PPM as a defined discipline, these elements were the responsibility of two distinct groups: operations management and projects management, each with its specific role:

Operations Management	Projects Management
Strategies	Schedule/time
Objectives, goals	Project cost
Business performance	Project performance
Stockholder satisfaction	Stakeholder satisfaction
Project selection and mix	Scope/change control
Resource availability	Resource utilization
Cash flow, income	Cash usage

The Traditional Organization

When the execution of projects is a normal part of the organization's business, typically the organization establishes, in parallel with the operations function, a function to manage the projects. This normally includes a central project office or project management office (PMO) and specialized personnel to manage projects. The PMO, under a chief project officer (or similar title), develops standards and practices directed at the effective execution of projects and the attainment of schedule, cost, scope, and quality objectives. In doing so, a project management planning and information system is put in place, and periodic measurements of project progress and performance are conducted.

In traditional organizations, responsibility for determining and achieving the organization's goals is assigned to the operations function. Senior managers with titles such as chief operating officer, chief technology officer, chief information officer, chief financial officer, and strategic planner establish objectives and goals and develop strategies to achieve these. When there are projects associated with these goals, these senior managers are expected to select from a menu of proposed and pending projects. The objective is to create the mix of projects most likely to support the achievement of the organization's goals within the preferred strategies and within the organization's resource (people and funding) constraints.

A problem common to many organizations is that there is no connection between the operations and projects functions and no

structured, consistent, and meaningful flow of information between these two groups. The organization's objectives (enterprise-level goals) are hardly ever communicated to the project office, and the periodic measurements made by the projects group cannot be related to these objectives.

What a waste! Both groups are off in their own world, working to do the best that they can but not knowing if their efforts are effective or efficient. Are the projects that are being worked on (assuming that they were properly selected in the first place) still the best ones to support the objectives? How well are they supporting the objectives? Are there performance issues associated with meeting the objectives? How would the operations people know?

And over in the project office, when the project performance data is evaluated, what knowledge is available to influence the corrective action decisions? If the individual project objectives are in danger, what should the project manager know to work on balancing schedule, cost, scope, and quality parameters? Can this be effectively done in the absence of operations inputs?

Bridging the Gap Between Portfolio Planning and Portfolio Management

There is a second gap with which to contend. Our traditional approach is to separate the function of project selection from that of managing the project pipeline. The traditional assumption is that once a project is approved, it is separated from the parental umbilical cord. The criteria on which the selection was based are lost. The only criteria remaining for monitoring project performance are specific to the individual project goals rather than the portfolio as a whole.

And how shall we deal with project and portfolio assessment? Is a project a static item or a dynamic system? If a project is dynamic in nature (its scope, timing, and cost are subject to change), then what effect does this have on the project portfolio? The typical project has a range of possible outcomes and costs. There is the base case and potential upside and downside. If the project was selected

on the basis of a set of assumptions (stated in the base case), does that project still belong in the portfolio when its attributes change? Periodically we need to review the project to test assumptions, update givens, and monitor progress; examine alternatives; and consider remodeling the portfolio.

Thus, we can see that there are potential weaknesses in the typical project management implementation:

- The organization's objectives and goals, as supported by the project portfolio, are not communicated to the people responsible for project performance.

- The project performance, as monitored by the project managers, is not communicated to the portfolio managers, strategic planners, and senior managers.

- The gap that exists between these two groups, in both communication and available information, prevents active management of the portfolio based on the current, changing status of the component projects.

What is needed is a basis for addressing project selection issues, deciding on project termination, facilitating reallocation of resources, changing of priorities, and evaluating alternatives. Without this capability, there is no project portfolio management.

The Project Portfolio Life Span

Perhaps the strongest way to delineate the differences between project management and PPM is to look at the true life span of projects within the PPM environment. We usually consider the life span of a project to be from authorization to delivery. In some models, we start earlier, with a proposal.

With PPM, this life span is expanded, on both ends. According to Max Wideman, the project portfolio life span (PPLS) consists of the following phased components (see Figure 1.1-1):[1]

1. Identification of needs and opportunities
2. Selection of best combinations of projects (the portfolios)
3. Planning and execution of the projects (project management)
4. Product launch (acceptance and use of deliverables)
5. Realization of benefits

Looking at this model, you can see that the purview of the project office is concentrated on item 3. The expansion of the life span and scope to include all five items requires the involvement and leadership of the executive side of the organization and the development of a portfolio governance culture, processes and tools.

Furthermore, the measurement of success does not stop with project delivery. The project was designed to deliver certain defined benefits. The true measure of success must extend to the evaluation of whether these benefits were in fact obtained.

FIGURE 1.1-1 First Three Steps of the Project Portfolio Life Span
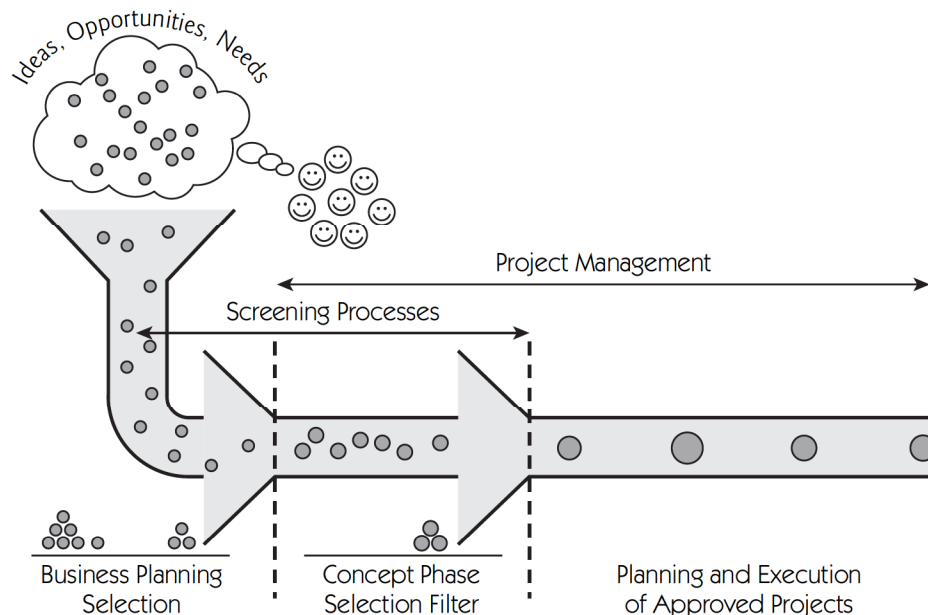
Source: R. M. Wideman, *A Management Framework for Project, Program and Portfolio Integration* (New Bern, N.C.: Trafford Publishing, 2004), p. 169.

1.2

What Is Project Portfolio Management?

> Project portfolio management is the management of the project portfolio so as to maximize the contribution of projects to the overall welfare and success of the enterprise.

Now that organizations have discovered the importance of projects and project management, the next logical step is to move toward the recognition of PPM. However, it is a very big mistake to think that PPM is merely an extension of project management. These two equally important functions are not alike at all.

As more and more firms adopt project management central office or project management office (PMO) methods, it would not surprise me to see responsibility for PPM thrust fully into the hands of the chief project officer (CPO). This too would be a mistake.

This chapter presents an overview of what PPM is as well as what it is not. Each of these topics is discussed in greater detail in Section Two.

Project Portfolio Management Is Not Just Enterprise Project Management

A critical mistake is to think that PPM is fundamentally the management of multiple projects. This is not so. PPM is the management of the project portfolio so as to maximize the contribution of projects to the overall welfare and success of the enterprise. This means that:

- Projects must be aligned with the firm's strategy and goals.
- Projects must be consistent with the firm's values and culture.
- Projects must contribute (directly or indirectly) to a positive cash flow for the enterprise.
- Projects must effectively use the firm's resources—both people and other resources.
- Projects must not only provide for current contributions to the firm's health but must help to position the firm for future success.

This cannot be accomplished solely within the projects domain. PPM, to be fully effective, requires the participation of several core components of the firm. Furthermore, it requires the integration of several systems within the organization. Let's look at each of these first from an organizational point of view and then from a systems point of view.

What Processes Comprise PPM?

We can subdivide PPM into two primary phases: the first focusing on the prioritization and selection of projects for the portfolio and the second dealing with managing the projects within the portfolio. Although these two components require different practices and are separate in nature, each affects the other, so they must be integrated.

Phase 1: Selecting Projects for the Pipeline

This phase deals with proposed projects and provides a structured process to:

- Guide the preparation of project proposals (business case) so that they can be evaluated.
- Evaluate project value and benefits.
- Appraise the risks that might modify these benefits.
- Align candidate projects with enterprise strategies.
- Determine the most favorable use of resources.
- Rank projects according to a set of selection criteria.
- Select projects for the portfolio.

In order to perform the ranking and selection of projects, it will also be necessary to:

- Execute a strategic plan and subsequent tactical planning guidelines.
- Maintain an inventory of available resources.
- Establish budget buckets for the portfolios.
- Decide on an optimum or acceptable size of the project pipeline.
- Establish a set of weighted scoring criteria.
- Set some boundaries or guidance for acceptable risk.

Details of the prioritization and selection phase are presented in Chapter 2.1.

Phase 2: Maintaining the Project Pipeline

After selecting projects, we manage these projects with an eye toward achieving two sets of objectives: to meet the *project* objectives (this is the traditional project tracking and control process that we used

even before we implemented PPM) and to meet the *portfolio* (business) objectives.

When we execute the ranking and selection phase, we match the characteristics of the proposed projects with a set of selection criteria. Then when we execute the projects, we need to monitor and evaluate any conditions that might alter either of these (project characteristics or selection criteria). Periodically we need to update or confirm the criteria used for project selection. On a regular basis, we evaluate the status and performance of each project. If the performance will change the values that we assumed at the proposal stage (in the business case), we need to consider whether the project should remain in the portfolio. Although delaying or terminating an active project may not always be possible or prudent, we should always consider those options as part of managing the portfolio.

To facilitate the periodic evaluation of project status and performance, we can rely on two well-known techniques: earned value analysis and the Stage-Gate® process.[1] (Both techniques are discussed in Chapter 2.2. In addition, Chapter 3.6 is devoted to earned value analysis and Chapter 7.1 to the Stage-Gate® Process.

Organizing for PPM

The responsibility for leading the PPM function falls to the person responsible for operations management within the firm. In most organizations, this is the individual who brings together the strategies, measurements, and cash management. It may be someone with the title of chief operating officer (COO) or vice president of operations. It also could be the chief executive officer or president. Also playing key roles on the PPM team are the chief financial officer or vice president of finance, and the CPO, or vice president of projects. While the project management office would have the major role in operating and supporting the PPM practices, it would not own the final decision role. In a firm where information technology is the primary business, the chief information officer would certainly have a significant role. Rounding out the PPM team are

representatives of the various functional operations and the marketing function.

Here, we are assuming that the functional departments own the critical resources that will be used on projects. Hence, the importance of their participation on the PPM team. In addition, because the management of the projects portfolio will require consideration of future engagements and resource demands, the marketing operation will have to contribute forecasting data to the PPM function.

Note that there are no new functional positions defined for PPM. Rather, we are viewing PPM as a *process*, to be supported by the PMO and senior personnel already in place in the firm. The PPM process will be added to the responsibilities of these senior members, who will function as a team to manage the projects portfolio under the leadership of the COO (or equivalent). It's not as if these newly defined (or redefined) responsibilities are changed. What is different within the PPM process is that the individual responsibilities for the project portfolio are executed within a structured, integrated PPM team.

A growing popular term for the process of guiding the portfolio is *governance*. This is especially so in the information technology area, where the term *IT governance* is becoming synonymous with PPM. Further discussion of organization and roles is presented in Chapter 2.3. IT governance is also addressed in Chapters 5.3 and 6.2.

Supporting Processes

So far we have brought several functions together under the umbrella of PPM: projects, operations, financial, functional departments and resources, and marketing. Each of these is supported by automated information systems. A challenge under PPM is to bring these computer-based systems together. Furthermore, extended capabilities must be added to support the intended benefits of PPM and to support integration of the individual systems.

If you have an enterprise resource management (ERP) system or a multifunction project management system, you probably have the underlying structure to move in the desired direction. But even then, new processes and functions will be needed. We look at the tools for PPM and tool integration in Chapter 2.4.

2.5

Implementing Project Portfolio Management

> The first step in the new PPM process is to evaluate the existing project inventory. Excising nonaligned, redundant, or nonbeneficial projects will release scarce resources for better opportunities.

Do you remember the chicken-or-egg question? Now that we're ready to implement a PPM capability, which should we do first? Do we use the portfolio planning process to prioritize or select projects for the portfolio? Or do we evaluate the currently active projects?

In most cases, the firm will already have a portfolio of projects (or multiple portfolios), although they might not call it by that name. Field experience has shown that this is a good place to start. New implementers of PPM have found that a structured review and evaluation of the existing portfolio can turn up numerous instances of deficiencies in that portfolio. In taking inventory of current project activity, they found projects that should never have been approved and projects that were failing to the point that they would not deliver anything close to their expected benefits.

We mentioned the HP/Compaq inventory of their combined project loads and their decision to eliminate over one hundred projects. This reduced the overall cost burden of the projects and

opened up resources for more beneficial opportunities. (See Chapter 9.2.) AXA Financial reports a similar success:

> When I took an as-is snapshot of what the lay of the land looked like, I discovered there were a number of projects behind schedule and over budget and, more important, that all projects were created equal. There was no hierarchy of improvement. There was no sense of how these projects related to our vision, mission, long-term, short-term—any kind of objective you wanted to define.
>
> I bet we saved $5 million to $10 million in the first year alone, on projects that would have automatically gone through before. But, now the business units knew what could get killed, so they killed it first. It just became immediately apparent how much junk we weeded out of the system.[1]

Evaluating the Current Portfolio

It would certainly appear that a good place to start is by taking an inventory of the current project burden. It is not unlikely that the results of such an inventory will more than pay for the efforts invested in implementing the new PPM capability.

As noted in Chapter 2.2, the evaluation process for projects in the pipeline has two dimensions. The first is performance of the project. Here, we evaluate the project performance against targets that have been set for the project, normally including metrics regarding schedule, resource utilization, costs, deliverables, and quality. The data would include planned status, current status, and forecast performance. Indications of poor performance would be a cause of concern, but it's not the only condition to be considered.

The second dimension to be evaluated is the criteria that were used to select the project in the first place. Has anything changed? Are the project deliverables still needed? Can they be delivered in an acceptable time frame? Are the cost benefits still acceptable? Is the project still aligned with the strategies? Has a competitor beaten you

to the punch? Has the market fizzled? Has the technology changed, making this design obsolete?

Actually, many of the projects currently in the pipeline probably were selected without a structured portfolio process, so there are no criteria to be evaluated. It will have to be constructed after the fact (sort of reverse-engineering).

So if the first step in the new PPM process is to evaluate the existing project inventory, the first job of the team is to establish the decision criteria, establish thresholds, and clarify responsibilities for the decisions.

Culture and Project Weeding

Developing a culture that supports the excising of poor projects is not easy. Sometimes you can try to impose a bogey (quota) for reductions, to give it a push. This works with forced personnel cutbacks. Why not for projects? As an alternative, you can impose some key pass-fail criteria associated with items like strategy alignment or budgetary resource or risk limits.

Project Prioritization and Selection

There are some essential steps for initiating the selection phase of PPM. A key step is to make sure that the governance council is in place and that its roles and responsibilities are clear. Another key item is to make sure that the governance council is fully aware of the firm's strategic plans and the tactical options to support the strategies.

There should be a standardized practice for submitting proposed projects to the system. Guidelines spelling out information required from the project sponsor should be published. (See Chapter 3.2.)

What are the optimum and maximum sizes of the project pipeline? This will be based in part on the availability of resources. You'll want to know these limits before you complete the selection process.

In Chapter 2.1, we described several options for ranking candidate projects. You can use any or all of these in your PPM system. The team will want to decide which methods to use and make sure that practices and tools are available to support these methods.

PPM Implementation Tips

Instead of deploying the new PPM system across the board all at once, try it out with a pilot program. Make sure that the initial people involved are adventurous supporters (and not reactionaries). Use the pilot to fine-tune the practices before you broadcast them as company standards.

When you're ready to implement the PPM process, the effort would be well served if you employ a checklist, perhaps similar to the questionnaire shown in Exhibit 2.5-1, prepared by United Management Technologies (UMT).

Executive Support

Finally, let's make sure that there is full executive support. There are several ways to validate that level of support. One is to have the top executive authenticate all of the key role modifications. The roles and responsibilities should show up in revised position guides and in any management-by-objectives metrics. People so affected should receive a letter from the CEO acknowledging the importance of their role in the new PPM process.

Kick the process off with a bang, even if it's just a pilot program. Let people know that this is big. Make it clear to everyone (in a message from the CEO) that "PPM is a way of life in the organization and that support for PPM is a condition of employment."

Implementing PPM Is a Project

People often fail to realize that the development and implementation of a PPM capability is in itself a project and should be handled

EXHIBIT 2.5-1 Program Management Questionnaire

Governance

- We have a formal procedure to review projects, approve (funding decisions) submitted project proposals and business case changes, as well as to rationalize our investment portfolio.
- We have clear lines of responsibility and accountability for the technical and financial performance of our projects.
- We use a consistent set of policies to guide the development of estimates (costs, benefits, etc.), to assess progress and to manage projects.
- Every project has a senior business manager/sponsor, who oversees the project definition and budget, and takes responsibility for its success.

Business Case

- Each project proposal identifies the specific business goals and objectives it will support.
- Each submittal includes a description of the scope (what's included, what's omitted) of the proposed effort and the approach (methodology) to be employed, as well as the identification of project overlaps and dependencies.
- We require that each proposal include a detailed work plan consisting of a task breakdown structure, timeline, resources, deliverables and milestones.
- We have a standard framework to quantify the benefits of proposed projects that includes non-financial elements
- A project proposal identifies and assesses all risks associated with the development plan as well as those associated with achieving the promised benefits.

Culture Compatible with Program Management

- We are accustomed to managing multiple projects across business units and/or the regular functional organizational structure.
- We have a recognized, documented standard procedure for capturing and formalizing project ideas from all stakeholders (IT, business, others).

EXHIBIT 2.5-1 Program Management Questionnaire, Cont'd.

- Our program management office is well-established and respected for its contributions to the organization.
- In our company, key decision makers have demonstrated the judgment and practical experience to interpret status reports, foresee obstacles and react in a timely fashion.

Infrastructure Supportive of Program Management

- We use standardized processes for key project management events—planning, initiation, change control, reporting, etc.
- Our financial system provides an infrastructure of accounts, internal pricing and resource cost transfer policies compatible with a multi-project environment.
- The projects in our portfolio are selected on the basis of their relative impact on our company's strategic goals and objectives.
- We employ automation tools for project status information collection, aggregation and portfolio analysis.
- We provide training for new project managers and program management office staff.

Analysis and Tracking Processes

- We have a clear strategy and process for the sources of information and the distribution of project portfolio status reports to appropriate decision-making levels.
- Our tracking process includes milestones, budget and resource usage against the approved project plan.
- At the portfolio level, we ensure that inter-project dependencies, overlaps and coordination do not generate scope, timing and resource conflicts.
- Our procedures are designed to ensure consistent quality of all project deliverables.
- We have a robust process for identifying, tracking, analyzing and escalating issues to the appropriate decision makers.
- We periodically replan the entire portfolio of projects to reflect changes in individual projects (scope, benefits, budget, timing) as well as overall business conditions.

Source: United Management Technologies.

just like any other major project. Among the significant items and issues to be addressed within this project are these:

- Prepare and issue an approved project charter.
- Prepare and distribute the project plan.
- Prepare a responsibilities matrix, and clarify all roles.
- Develop the PPM processes.
- Select the support tools, and integrate them with existing tools.
- Conduct orientation and training.
- Provide mentoring and conduct implementation audits.
- Begin with pilot portfolios and then expand.

2.1

Selecting Projects for the Pipeline

> The objective is to create the mix of projects most likely to support the achievement of the organization's goals, aligned with the preferred strategies, and within the organization's resource (people and funding) constraints.

There are thousands of true stories that illustrate what is wrong with how most organizations determine which projects to approve. It is obvious that the pointy-haired guy (Dilbert's boss in the cartoon *Dilbert*) has gotten around. Here's an example of just one of these situations:

The company was a major manufacturer of paper goods. When it added a new project to the pipeline, the process began when a client of the paper company called her sales rep and asked if the company could provide a product to a new specification. The sales rep called the product line manager, who in turn called the development engineer responsible for that technology. The engineer decided whether he would like to work on creating a version of the product to the new specification. He has the option (solely on his own) to accept

or decline the product line manager's solicitation. If he decides to work on the project, he has the right to draw on several of the firm's resources.

Here is what is wrong with this picture:

- The engineer has no idea how this modified product fits into the firm's strategies.
- He has no data on marketability or profitability.
- He has no process for performing a value/benefits evaluation.
- He probably hasn't considered the capability to support the revised specification.
- He has not considered risk issues.
- He is committing other resources, which may be needed for higher-priority projects.
- There really isn't a practice for determining project priorities.

What about the customer? Is she really serious about the revised product? Will she buy it at a price that is not yet determined? Will she take her business elsewhere if the current supplier does not deliver a new version? Can she get a product to the new spec from someone else? A development engineer would be unlikely to ask these questions or have the answers. Yet this information is essential in making the project decision and should be an integral part of the project selection process.

The project pipeline for this firm was a disaster. Resources were shifted from project to project, many of which should never have been in the pipeline in the first place. Resources were diverted from high-value, low-risk, strategically aligned projects to someone's pipe dream. Many of these projects never reached completion. Meanwhile, opportunities were lost and money was wasted.

Evaluating Candidate Projects

We'll assume that the objective of the PPM process is to prioritize work that brings the most value to the firm. The definition of *value* will certainly differ in accordance with the firm's focus, strategies, and types of projects. Regardless of these differences, a project portfolio management process should address the following:

- A ranking of value and benefits
- An appraisal of risk (in achieving these benefits)
- An inventory of resource availability and allocation
- An idea of an optimum or acceptable size of the project pipeline

The criteria for each of these factors will have to be customized by the firm that is implementing the PPM process. This definition will be driven by the firm's strategic focus. The project portfolio is one of the layers of tactical planning that are executed in support of the strategic plan. So we must add to the list above:

- Publication of the strategic plan to the project portfolio management governance council. (In defining the PPM process, we assume that the process will involve some type of governance council, usually a team of senior people designated by top management to make decisions about the project portfolio. The roles and organization for PPM are addressed in Chapter 2.3.)
- Development of tactical plans that would involve projects in support of the strategic plan
- Definitions of value and benefits as they apply to the tactical plans
- Some boundaries on acceptable risk parameters
- A long-range projection of resource strategies

Ranking Value and Benefits

Assuming that the number of potential projects exceeds the number that can be effectively executed in a reasonable time, there must be a means of prioritizing each project. This process must be structured and conducted by a team in order to eliminate the tendency to select projects by political means, power plays, or emotion.

Conceptually this ranking process is simple, although the individual parameters will vary according to strategies, resources, profit motive, and other categories. The process is not unlike that used in selecting items for an investment portfolio. In fact, this is an investment portfolio: you are investing in projects with the objective of maximizing the return.

One of the primary ranking factors will be expected return on investment (ROI). However, there are qualifiers associated with this process. You can't prioritize projects using ROI alone. You need to also consider:

- Alignment with strategic and tactical plans
- Balance between maintenance projects and investment projects
- Allocation of R&D expenditures and resources
- Allocation of marketing expenditures and resources
- Effective use of resources
- Probability of delivering the project on time, within budget, and with the designed work scope
- Ancillary benefits (nonfinancial)

The ranking practice should use a balanced scorecard approach, with each of the factors listed and weighted. As each factor is rated, an aggregate score for each project is obtained. The rating of each factor can be prompted by a series of questions, with the answers noted in a narrative format and then converted to a numerical score based on the level of the answer against a guideline. (For additional discus-

sion and details on ranking and prioritization of projects, see Section Four and Chapter 7.2.)

Risk

The value/benefits ranking may be modified by risk: the risk that the perceived benefits might not be realized. A potential million-dollar return with a 10 percent chance of happening is probably not as desirable as a potential quarter of a million-dollar return with a 90 percent probability. A new technology with a 20 percent chance of success may not fit with the strategy. A project that is vulnerable to critical delays might be a lower-ranked candidate than one that is certain to be delivered in time to produce the expected benefit.

A typical value formula takes the expected benefits, minus the total cost of ownership, divided by the risk. The risk factor takes time into consideration, acknowledging that a longer duration to ROI increases the potential risk. (See Chapter 4.2 for a detailed discussion on how to determine the value of a project and Chapter 3.3 for more on risk and uncertainty.)

A common practice is to display the value/benefit ranking and the risk ranking on a grid (Figure 2.1-1). Preference would be given to projects that appear in the high value–low risk quartile.

As the typical project environment moves away from repetitive-type projects to unique and original challenges, risk assessment and management becomes an essential part of PPM.

Resources

If we acknowledge that the availability of resources is a constraint on the number of projects in the pipeline, then why can't we just increase resources as we need them? There are a number of obvious answers to this question:

- Resources cost money. They have an impact on cash flow. In a well-managed organization, the size of a firm's labor force is dictated

FIGURE 2-1.1 Risk-Benefits Ranking Grid Diagram

HP IT Program Selection Process
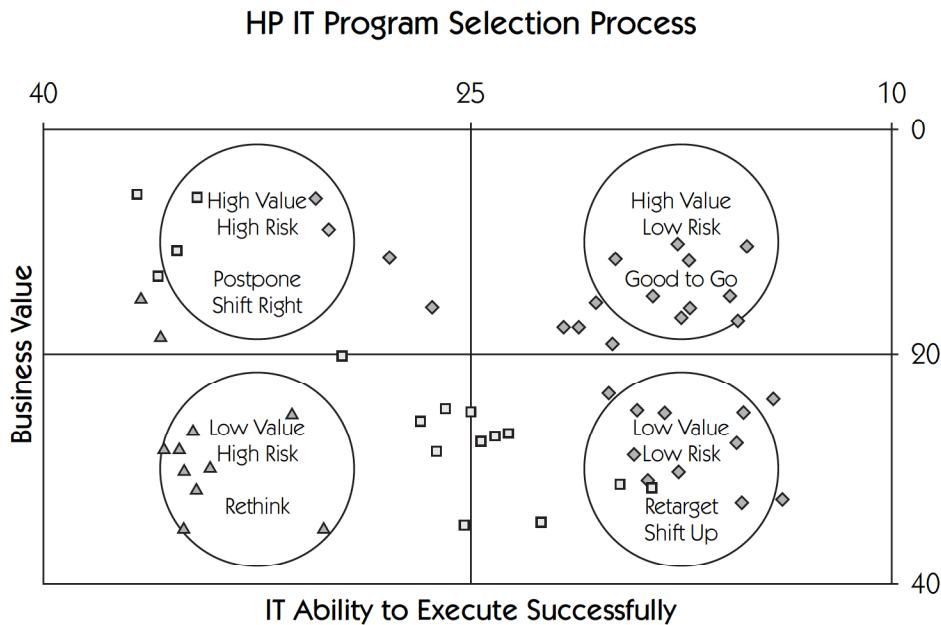
Source: Don Kingsberry, Hewlett-Packard. See the case study in Chapter 9.2.

by the firm's revenue. In a growing organization, the amount of resources are increased incrementally as the revenues increase, usually by a set proportion. They are not increased just because there are more projects in the pipeline than can be supported by current resources.

- Effective and efficient use of resources calls for a stable workforce—a group of people who understand how the organization works and communicates and who fit the organization's culture and can work well as teams on projects. Although there are times when temporary or transient resources can be used to meet specific needs, it is best to avoid this as a standard source of resources. The cost of supervision, coordination, and learning curve issues will often negate the benefits.

- One of the key objectives of a managed portfolio is balance. This is a well-respected strategy in investment portfolios and should also be an objective in project portfolios. Resource balancing is one aspect of a balanced project portfolio. This is a bidirectional pro-

cess. The mix of projects and the mix of resources should be manipulated to best use the firm's resources on work that is well matched to the available strengths and skills.

Size of the Pipeline

How much project work is enough? How much is too much? If we proceed on the basis that projects generate value and benefits, then doesn't it follow that the more projects that we have in the pipeline, the better off we will be? *Ridiculous!* you say! Well, of course, it is. But that doesn't stop many organizations from shooting at everything that moves.

The opportunities (or demand) for projects usually exceed the capacity to execute them all. We all have stories in which project deliverables were significantly delayed because the pipeline was overloaded. In almost every case, the delays eroded the value and benefits of the venture (as well as alienated the client).

There is significant feedback from successful firms that tends to show that doing fewer projects actually improves the bottom line. Committed resources are staying on the assigned job and doing the assigned work in support of established target dates. The income or benefits start earlier, and everyone is happier. Furthermore, because the projects are not drawn out, new projects can be added sooner, and just as many projects may eventually find their way into the pipeline and under improved conditions.

The message here is very clear: limiting the amount of work in the pipeline so that the projects can be completed as quickly as possible results in increased profits or savings and more satisfied clients, and it leads to executing more projects without increasing resources.

Adding an Approved Project to the Pipeline

A structured approach toward project initiation is critical to managing a successful portfolio of projects. Here are some critical first steps.

Issue a Project Charter

Although often omitted from the project process, there should be a formal project authorization practice. This is best instituted by means of a project charter document that contains much of the early description of project content, objectives, and budget. It is both a starting point for the project initiation process and the basis for guidance and measurement during execution. It specifies the project sponsor, the intended benefits and benefactors, and the source of funding. The project charter serves as the spending authorization. Time or expenses should not be charged to a project until such charges are authorized. The authorization document should specify who may charge and to what accounts the charges can go. Spending authorizations may be granted by phases. The project team should set up the Stage-Gate® criteria for the specific project, based on the established life cycle standard.[1] These are used to evaluate project progress before proceeding to the next major phase. (We introduce Stage-Gates in Chapter 2.2. Stage-Gate developer Robert Cooper describes the process in even greater detail in Chapter 7.1.)

Establish Critical Parameters

This includes targets, limits, and thresholds. The basis for these parameters is the values that were used to evaluate the project during the selection phase. For instance, what is the target delivery date? What amount of time extension can be tolerated? When do projected delays dictate that continuation of the effort be evaluated? Milestone dates may also be important and can help to identify out-of-tolerance conditions earlier in the project. Target and limit values should also be established for cost items, technology accomplishments, window-of-opportunity issues, and any area where performance is critical to supporting the criteria associated with the original goals. This process is crucial to prevent wishful-thinking projects from sapping the resources of the firm.

Determine What Is to Be Measured and by Whom

What gets measured to monitor the targets, limits, and thresholds? What is the mechanism for making the measurements? Who makes the measurements, who evaluates them against the measurement parameters, and who reports out-of-tolerance situations?

In Chapter 2.2, we'll look at the fundamentals of managing the pipeline with respect to maintaining the optimal portfolio.

10.5

Integrating Project Portfolio Management with Project Management Practices to Deliver Competitive Advantage

James S. Pennypacker, Patrick Sepate

Today's businesses find it increasingly important to execute projects efficiently—to do things right—bringing to the customer the expected quality and benefits desired from each project. They find it equally important to optimize their portfolio of projects—to direct the right resources to do the right things—in order to meet the organization's strategic goals. To accomplish this, best practice organizations integrate project management and project portfolio management (PPM) practices to tie the executive decision process to resource allocation and day-to-day project execution (see Figure 10.5-1).

Project Management and Project Portfolio Management

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project portfolio management is similarly the art and science of applying a set of knowledge, skills, tools, and techniques but to a collection (or portfolio) of projects in order to meet or exceed the needs

FIGURE 10.5-1 An Organization's Strategy Is Executed Through Projects. Project Portfolio Management Is the Key to Aligning Projects with the Strategy
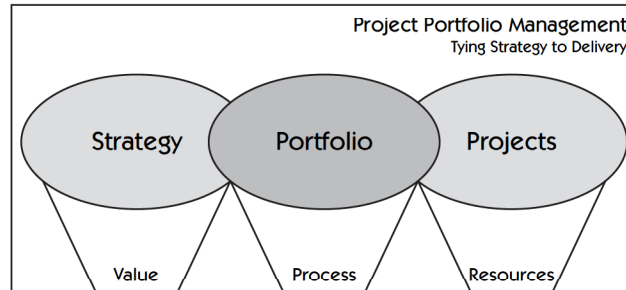
and expectations of an organization's investment strategy. Both PM and PPM are focused on helping to meet or exceed stakeholder needs, but they differ in the stakeholders and focus.

The stakeholders for individual projects (project management) include business owners, business sponsors, and often the end user of a project's output. These stakeholders are specifically concerned with satisfying their own business requirements and needs and controlling cost and schedule. When their projects slip or exceed budget, they want to know what activities drove the variances.

The stakeholders for the PPM process include financial management, senior business executives, and ultimately the stockholders of the organization. They are concerned with optimal investment of scarce company resources and typically are interested in return on investment, strategic alignment, and risk profile of the portfolio. To satisfy both sets of stakeholders, organizations must define an integrated process that links project management and portfolio management practices.

Why Project Portfolio Management Important

Applying effective PPM practices is becoming increasingly critical to business organizations. All organizations, large and small, must select and manage their investments and execute their projects wisely

to reap the maximum benefits from their investment decisions. PPM enables businesses to:

- Provide a structure for selecting the right projects and eliminating wrong ones
- Allocate resources to the right projects, thus reducing wasteful spending
- Align portfolio decisions to strategic business goals
- Base portfolio decisions on logic, reasoning, and objectivity
- Create ownership among staff by involvement at the right levels
- Establish avenues for individuals to identify opportunities and obtain support
- Help project teams understand the value of their contributions

Although there is compelling evidence to justify the use of PPM, few organizations today have established a mature project portfolio management process. Recent research from the Center for Business Practices (CBP) found that only a small percentage of organizations actively manage their projects as a portfolio (see Figure 10.5-2).

Integrating Project Portfolio Management and Project Management Practices

Integrating project management and PPM allows organizations to select the best portfolio of projects that are aligned with business strategy, monitor their performance, and iteratively reprioritize the portfolio as business conditions and budgets change. The project management process begins with initiation of a project, followed by planning, execution and control, and closing processes (see Figure 10.5-3). These processes comprise activities that are performed for effective project management and also provide a phased approach throughout the life of a project.

FIGURE 10.5-2 Only a Small Percentage of Organizations Actively Manage Their Projects as a Portfolio

Level 1: No portfolio management (ad hoc processes)

Level 2: Database of projects exists, value assessed for individual projects

Level 3: Project selection prior to action occurs at department/business unit levels

Level 4: Project portfolio is actively managed at department/business unit levels

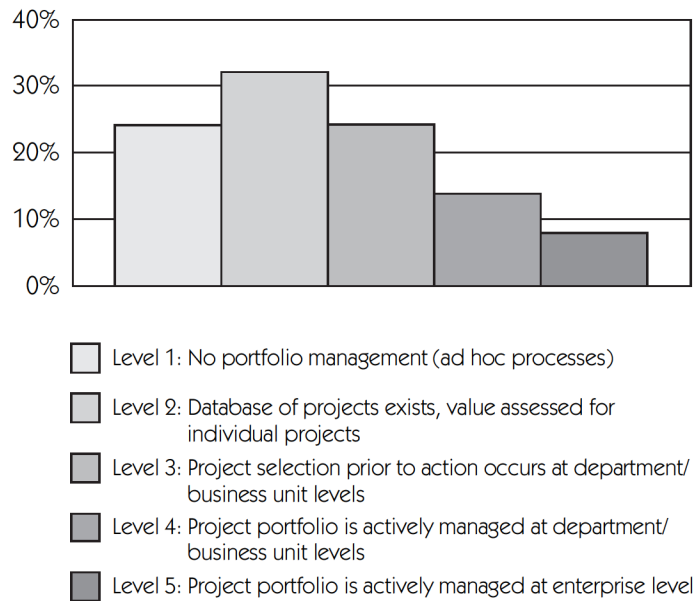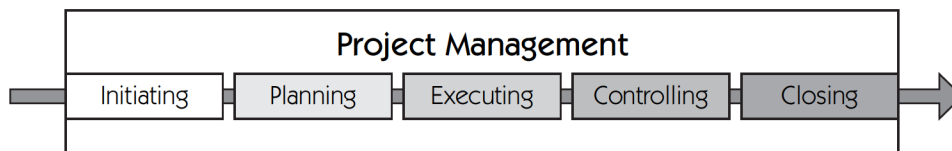Level 5: Project portfolio is actively managed at enterprise level

FIGURE 10.5-3 The Project Management Processes as Defined in a Guide to the Project Management Body of Knowledge (PMBOK® Guide)

Source: Project Management Institute, *A Guide to the Project Management Body of Knowledge* (Newtown Square, Pa.: Project Management Institute, 2000).

Prior to project initiation, it is essential to create a process for identifying and structuring potential projects, screening these entities, and managing the valuation from a benefit and cost focus. This preproject stage, often designated as opportunity assessment, may be conducted by business sponsors, business liaisons, program managers, or other representatives who have the skills and knowledge to define business benefits and estimate associated costs. In this

stage, projects are screened to ensure they pass minimal criteria—
that they fit the organization's strategy and that they are feasible.
Mandatory projects are also identified in this stage (for example,
projects that must be implemented for the organization to function
adequately).

Optimizing the Project Portfolio

Project portfolio management has five phases: portfolio inventory,
analysis, planning, tracking, and review and replanning. These
phases are dynamic, iterative, and ongoing (see Figure 10.5-4) and
must be managed artfully depending on project life cycles as well as
organizational issues, like budget cycles.

Initial project requests enter the portfolio inventory, where
project data is captured and organized for portfolio analysis. The in-
ventory includes active projects, proposed projects, and projects
that are on hold or delayed. The inventory will have information
about all projects in the portfolio, including schedule and cost esti-
mates, budgets, dependencies, strategic initiatives, expected bene-

FIGURE 10.5-4 The Portfolio Management Process
Is Ongoing and Iterative
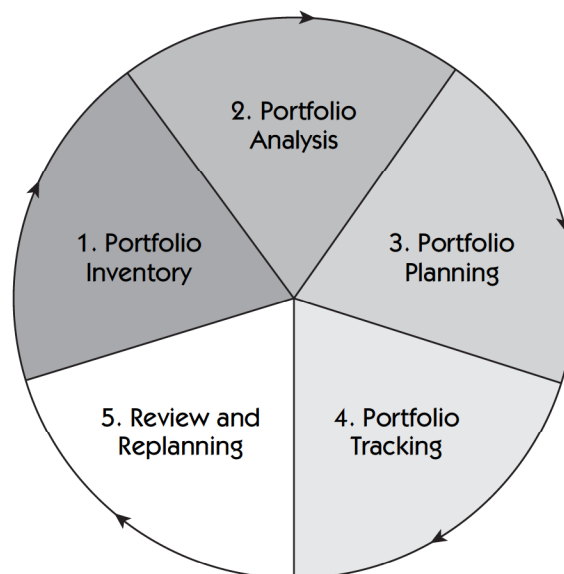
fits, risk, relative priority, value, and ranking. The inventory will also have information about available resources, roles, costs, skills, and other needed organizational information.

The portfolio is analyzed, periodically reviewing projects for their fit, utility, and balance: Do the projects fit the organization's strategy? Do they have value? How do the projects relate to each other, and how can the project mix be optimized? Portfolio analysis is crucial to prioritizing the portfolio and maximizing the value to the organization given its resource constraints. Organizations may prioritize projects based on a variety of criteria: financial, technical, strategic, and risk. Interactions among the projects in the portfolio are considered, including interdependencies, competition for resources, and timing. A variety of decision-making techniques and tools are used to help formulate the problem and facilitate the analysis of alternative solutions. Through multiple iterations, trade-offs are considered and final adjustments made to arrive at the optimal project portfolio.

Once projects are selected and initiated, they begin the project planning phase. Here resources are allocated and projects are scheduled. This project management process is integrated with the portfolio planning process, where resource allocation and schedule decisions are made, taking into account the whole portfolio of projects.

In tracking the portfolio of projects, metrics are captured to assess the performance of each project. And depending on the type, these projects must pass decision gate evaluations to determine whether to continue with the project, put it on hold, or kill it altogether.

Reviews of the project portfolio involve a reverification of the projects' critical success factors—including resource availability and the continued validity of the business case—with the business sponsors. In addition, shifting business, technology, and market conditions can rearrange priorities. Those decisions also require a realignment of the project portfolio, which may or may not affect other projects in the portfolio. Replanning may be required, including changes in resource allocation and scheduling.

This iterative nature of portfolio optimization requires that project reviews, program reviews, and portfolio reviews be held on a regular basis. These reviews provide a forum for studying the alternatives and help to build organizational buy-in for the portfolio. Integrating project management and PPM is necessary for developing an optimal project portfolio. Figure 10.5-5 illustrates a conceptual model for integrating PM and PPM.

Project Portfolio Management and Program Management

Linking business strategy directly to project prioritization and selection is often difficult to accomplish and manage over the long term. To facilitate the linkage, many organizations have established a program management function that provides a level of organiza-

FIGURE 10.5-5 Project Portfolio Management Is an Iterative Process That Occurs Throughout the Project Management Life Cycle Through Project and Portfolio Reviews