

Project Portfolio Management: How to Do the Right Projects at the Right Time

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Introduction

Project portfolio management (PPfM) is fundamentally different from project and program management. Project and program management are about execution and delivery---doing projects right. In contrast, PPfM focuses on doing the right projects at the right time by selecting and managing projects as a portfolio of investments. It requires completely different techniques and perspectives.

Good portfolio management increases business value by aligning projects with an organization's strategic direction, making the best use of limited resources, and building synergies between projects. Unfortunately, organizations often do portfolio management poorly. As a result, they fail to deliver strategic results because they attempt the wrong projects or can't say "no" to too many projects.

This paper summarizes current techniques for selecting, prioritizing, and coordinating projects as a portfolio to increase value to an organization.

The Business Problem

Nearly all organizations have more project work to do than people and money to do the work. Often the management team has difficulty saying "no." Instead, they try to do everything by cramming more work onto the calendars of already overworked project teams or by cutting corners during the project.

Despite a heavy investment of people and money in projects, the organization still gets poor results because people are working on the wrong projects or on too many projects. Trying to do too much causes *all* projects to suffer from delays, cost overruns, or poor quality.

The Solution

Effective project organizations focus their limited resources on the best projects, declining to do projects that are good but not good enough. PPfM enables them to make and implement these tough project selection decisions.

PPfM is a funnel that connects strategic planning to the execution of projects, making the strategic objectives executable. Exhibit 1 shows the PPfM funnel.

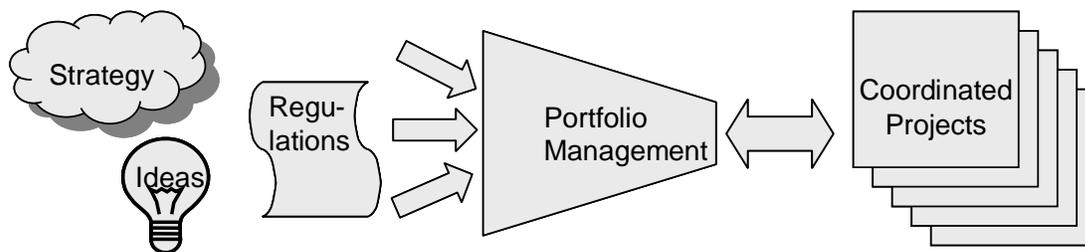


Exhibit 1: Portfolio Management Connects Strategy with Execution

The mouth of the funnel takes in all of the ideas for projects that the organization might do. These ideas may come from strategy, customer requests, regulatory requirements, or ideas from individual contributors. The purpose of the funnel is to select only those projects that meet certain criteria and to say "no" to the others. The resulting collection

of projects is a focused, coordinated, and executable portfolio of projects that will achieve the goals of the organization.

PPfM complements project and program management. It aims the organization in the right direction by selecting the best projects to do. The selected projects are turned over to program and project management, which is the engine that initiates and completes them successfully. Doing projects right, doing projects together, and doing the right projects: Project organizations must excel at all three to have long-term success (Exhibit 2).

Project Management	Do projects right
Program Management	Do projects together
Portfolio Management	Do the right projects

Exhibit 2

The Portfolio Management Process

Exhibit 3 shows the five primary steps of the portfolio management process. (Figure 3-2 in *The Standard for Portfolio Management* shows a more detailed breakdown of these steps (Project Management Institute, 2006, p. 25):

1. Clarify business objectives
2. Capture and research requests and ideas
3. Select the best projects using defined differentiators that align, maximize, and balance
4. Validate portfolio feasibility and initiate projects
5. Manage and monitor the portfolio

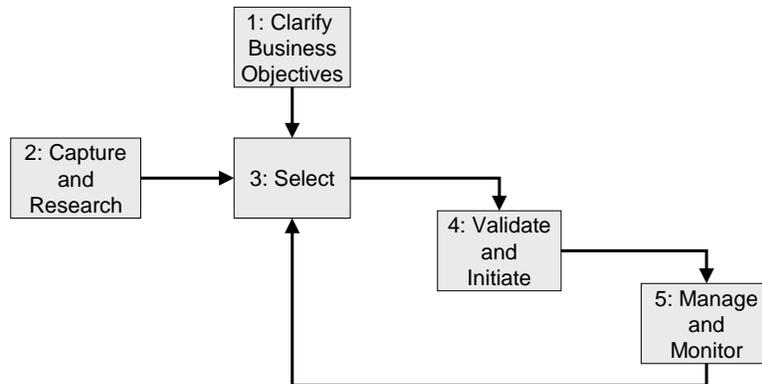


Exhibit 3--Portfolio Management Process Follows Five Steps

This process identifies the most important differentiators between projects, such as Return On Investment, risk, efficiency, or strategic alignment. Then it uses these differentiators to select the high impact projects, clear out the clutter, and set priorities. Trade-offs are made in a disciplined way, rather than by allowing the loudest voice to win.

The PPfM process accomplishes three things (Oltmann, 2006, p. 2):

1. *Aligns* execution with strategy. Each selected project must play a role in carrying out the strategy of the organization. No more pet projects!
2. *Maximizes* the value of the entire portfolio of projects to get the “most bang for the buck.” Taken together, the projects must have a high return on the organization’s investment. This may be in terms of dollars or other measures that are important to the organization.
3. *Balances* the portfolio. Makes sure that it is not lopsided---for example, by being too risky or too focused on short-term results.

The following sections describe each step in more detail.

PPfM Step 1: Clarify Business Objectives

First, Aim the in the Right Direction

Before selecting the right projects, you must know where you want to go! As Alice of *Alice in Wonderland* discussed with the Cheshire Cat,

Would you tell me, please, which way I ought to walk from here?

That depends a good deal on where you want to get to, said the Cat.

I don't much care where -, said Alice.

Then it doesn't matter which way you walk, said the Cat. (Carroll, 1920, p. 89)

Similarly, you must be able to clearly state your organization's strategic objectives before starting portfolio management. This is often the first obstacle people run into when trying to implement PPfM. If you can't determine the strategic objectives, stop working on portfolio management and fix that problem first.

As an example, a very popular framework for strategic planning is the strategy map, based on the strategic perspectives developed by Kaplan and Norton (Kaplan & Norton, 1996). A strategy map derives and links initiatives in a cause and effect hierarchy so that they support each other (Kaplan & Norton, 1996, p. 149). The top level of the hierarchy is financial objectives, because creating financial returns for shareholders and owners is a priority at for-profit companies. The supporting levels of the hierarchy are:

- **Customer value:** what value can the company create for the customer that will translate into financial results?
- **Processes:** what internal processes will generate that customer value?
- **Learning and growth:** what capabilities and internal learning must the company have to make the processes work effectively?

Decide What Value Means

Portfolio management requires a systematic method of differentiating between candidate projects to determine which ones are "best." What does "best" mean? The definition is unique to every organization. For example, one company might value environmental stewardship most highly, while another places top priority on ROI. Select a critical few criteria that will measure each project's true value to your unique organization. Rigorously limit the number of criteria to four to ten to keep the amount of data manageable.

The right criteria are critical, because poor criteria will cause you to select the wrong projects. There are two primary approaches to defining valuation criteria: financial and scoring. Exhibit 4 shows examples of both types of criteria.



Financial

- Payback period
- Net present value (NPV)
- Bang for Buck (BBI)

Scoring

- Market attractiveness
- Alignment to strategy
- Product and competitive advantage
- Technical feasibility
- Leverage of core competencies



Exhibit 4 Valuation Criteria Divide into Two Approaches

The financial approach to valuation uses quantitative monetary measures, such as net present value, to define the differences between projects. Unfortunately, a financial approach may mislead portfolio managers to mistake precision for accuracy. Robert Cooper says,

In spite of the fact that financial methods are theoretically correct, the most rigorous of all methods, and the most popular of all tools, of all the methods we studied in a large sample survey of practices versus results, they yielded the poorest results on just about every portfolio performance metric. The sophistication of these methods far exceeds the quality of the data! (Cooper, Edgett, & Kleinschmidt, 2001, p. 46).

Valuation by scoring takes a different approach. In many fields, researchers understand which characteristics of projects correlate with success. Scoring uses these predicting factors as the criteria for differentiating between candidate projects. For example, Cooper (Cooper, Greenberg, & Zuk, 2002, p. 47) lists three factors in new product development that correlate well with eventual product success:

- Unique, differentiated product that offers superior value to customers
- Product is targeted at an attractive market
- Product and project leverages internal company strengths

Regardless of theoretical superiority, use a valuation method that fits with the executive decision making style in your organization. Some companies are more comfortable with financial analysis, while others prefer the framework for voting and discussion that scoring brings. Yet others combine financial and scoring criteria into a single system. Most of my clients prefer at least some scoring criteria in their evaluation process. Using either approach is better than having no structured evaluation criteria at all!

PPfM Step 2: Capture and Research

Step 1 of the PPfM process builds a foundation for creating a portfolio. It requires all of the decision makers to agree on strategic objectives and the vital few valuation criteria, so initially it can be difficult and time consuming. Fortunately, only periodic review and update is needed after that.

Step 2 builds on this foundation by starting to build a specific portfolio. Exhibit 5 shows the steps for constructing a tentative portfolio (Oltmann, 2007, p. 36). The first two steps are research:

- Create an inventory of candidate projects for the portfolio. Include in-progress projects as well as ideas for new projects. Sources can include customer requests, initiatives from strategic planning, regulatory requirements, and good ideas from employees and project managers.
- Gather data for each candidate project on the inventory. These include data that will allow you to rate the projects against the criteria that you have developed. It may also include early estimates of dependencies and high-level resource requirements.

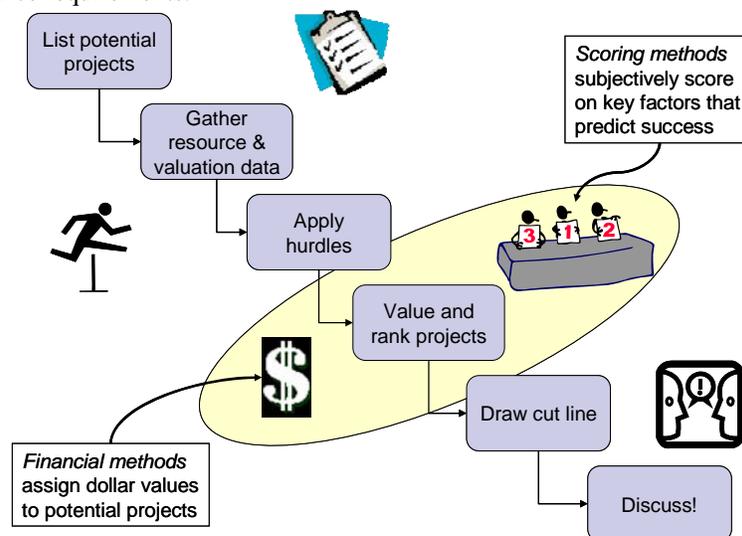


Exhibit 5 - Constructing a Tentative Portfolio Leads to Valuable

At first, identifying and gathering data on all of the candidate projects may be a major challenge, requiring much investigation and interviewing. As your organization matures at PPfM, this step will get faster and easier.

PPfM Step 3: Select the Best Projects

Maximize the Portfolio's Value

With project data from Step 2 in hand, determine which combination of projects creates the highest total value for the portfolio, given high-level resource constraints. This is called *portfolio maximization*.

First, rate each candidate project against the valuation criteria to compute the value of each project (the fourth step in Exhibit 6). This will be either a weighted score or a financial value. Next, rank the candidates from highest to lowest value. See Exhibits 6 and 7 for examples (Oltmann, 2007, p. 42).

Project Code	Short Name	Scores on Criteria						Score
		Resolve	Prevent	Guide	Grow	Skills	Tools	
AP01	Project 1	H	H	H	H	Y	Y	15
AM01	Project 2	H	H	H	H	N	N	15
AP09	Project 3	H	H	H	M	Y	Y	14
TK04	Project 4	H	H	H	M	Y	Y	14
AP02	Project 5	H	H	H	L	Y	Y	13
MC01	Project 6	L	L	M	M	V	V	12

Exhibit 6-Use Scoring Criteria to Rank Candidate Projects

Starting with the highest value projects, allocate available resources until they are exhausted. Draw the “cut line” at this point, creating a tentative portfolio. (Exhibit 7) The portfolio is tentative because no valuation criteria, no matter how good, can capture all of the subtleties that must go into real-world funding decisions. The cut line becomes a starting point for vigorous discussion among the members of the portfolio management team, as they use their real-world experience and judgment to tune the tentative portfolio. The process, criteria, and data form a framework that guides this discussion, instead of selecting projects by “loudest voice wins.”

Code	Project	Product Line	Project Type	Months to FCS	Payback Period (months)	NPV (\$M)	Resource Requirements (total remain)	Resource Requirements (next quarter)
InterK	Internet Kitchen Control Center	GourmetChef	Transform	11	15	\$40.0	\$2.0	\$0.5
BBQ	Premium BBQ Smoker	GourmetChef	Transform	2	8	\$35.0	\$5.0	\$5.0
Stove	Stove	ValueChef	Upgrade	8	9	\$29.5	\$8.3	\$3.8
BotRef	Bottom Freezer Refrigerator	GourmetChef	New	5	8	\$25.2	\$4.2	\$2.0
ComFrz	Commercial Freezer	ProChef	Upgrade	8	11	\$21.1	\$2.6	\$0.8
Chill	Chiller Oven	GourmetChef	New	15	17	\$18.7	\$3.8	\$0.8
SSRef	Side by Side Refrigerator	GourmetChef	Upgrade	5	6	\$18.0	\$2.0	\$1.5
Fryer	High Efficiency Deep Fryer	ProChef	Upgrade	2	4	\$15.4	\$0.7	\$0.6
BIRef	Built In Refrigerator	GourmetChef	Upgrade	1	2	\$13.3	\$0.5	\$0.5
Tando	Tandoori Oven	ProChef	Transform	13	23	\$12.0	\$6.2	\$1.2
VMicro	Microwave	ValueChef	Upgrade	12	17	\$10.1	\$4.3	\$1.1
Dish	Dishwasher	ValueChef	Upgrade	6	9	\$8.6	\$2.1	\$1.4
Grido	Griddle / Oven	ProChef	New	7	16	\$8.4	\$1.5	\$0.6
Ctop	Cooktop	GourmetChef	Upgrade	4	15	\$5.2	\$1.4	\$1.2
Amicro	Automated Microwave	ProChef	New	10	20	\$5.1	\$2.7	\$0.5
Cmicro	Microwave + Convection Oven	GourmetChef	New	17	25	\$12.7	\$5.7	\$1.1
SSDish	Super Silent Dishwasher	GourmetChef	New	4	37	\$1.6	\$1.0	\$0.8
TopRef	Top Freezer Refrigerator	ValueChef	Upgrade	24	30	\$30.0	\$3.1	\$0.3
Total Requested						\$309.9	\$57.1	\$23.7
Total Available								\$15
Actual						\$202.9		\$15.0

Tentative “go”

Missed hurdles

Hold for resources

Exhibit 7-Use NPV and Resource Data to Draw a Cut Line

Balance the Portfolio

A maximized portfolio may be out of balance in important ways. For example, it may have an inappropriate risk profile, subjecting the organization to either too much or too little risk. According to Cooper (Cooper, Edgett, & Kleinschmidt, 2001, p. 73), balance is the second weakest element in portfolio construction, after “too many projects.”

Use balance displays to check the balance of a tentative portfolio across important dimensions. Exhibit 8 shows a bubble chart that displays risk versus reward in a small portfolio, where each bubble represents a project. Some popular balance displays are:

- Risk versus reward
- Strategy---tactical range
- Market or product-line segmentation
- Distribution of time to completion or time to profit

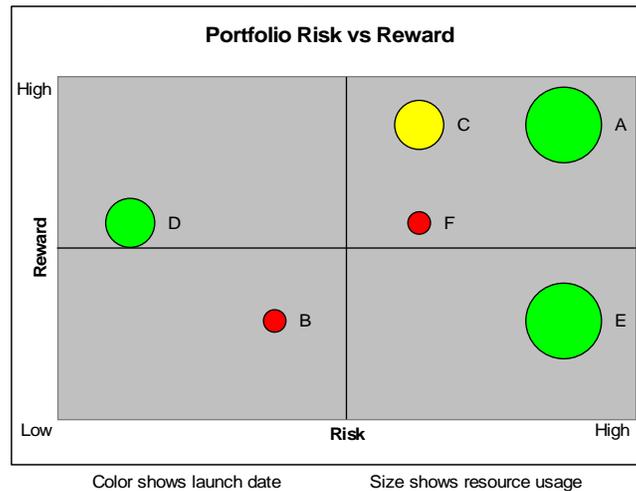


Exhibit 8-Balance Display Compares Portfolio Risk and Reward

PPfM Step 4: Validate and Initiate

To keep the amount of data manageable, a portfolio is initially constructed at high level of abstraction. The resulting portfolio ignores some important constraints and details about its projects. For example, a portfolio’s demand for resources often appears feasible when analyzed at the FTE (full-time equivalents) level. However, this masks bottlenecks caused by limited availability of certain skill sets (Exhibit 9). Thus, a portfolio may not be feasible to execute even though it is maximized and balanced.

Before starting execution, validate that a tentative portfolio appears to be feasible. Team up with the people who will run the projects and thus know them best---generally line and project managers, perhaps coordinated by the project management office (PMO).

When looking at portfolio feasibility, consider the following:

- Interproject dependencies
- Knowledge and capabilities of the performing organizations
- Time-phased resource demand and availability, including considerations of key skill sets
- Budgetary constraints

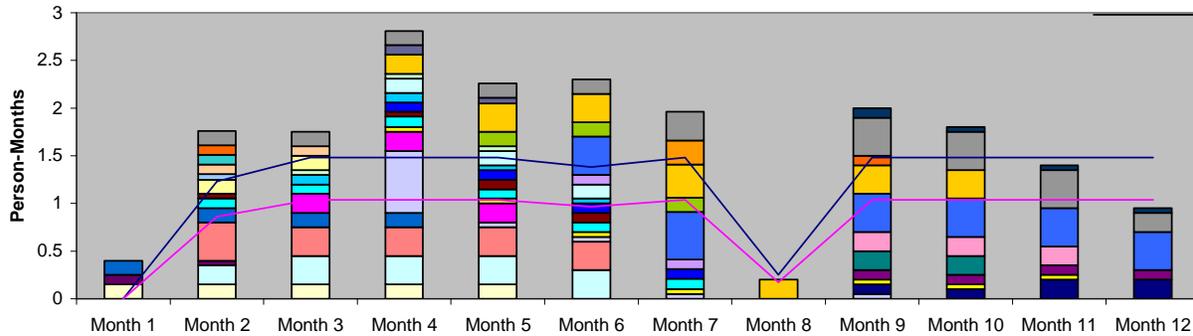


Exhibit 9-Availability of a Specific Skill Set Causes a Bottleneck in

PPfM Step 5: Manage and Monitor

After validating the portfolio, put it into execution. Initiate the new projects and programs, inserting them into the project management system. Although the project manager is responsible for day-to-day execution of each project, the portfolio manager’s job continues. He or she monitors the execution of the portfolio and its component projects, ensuring that it continues to meet its original design objectives.

In this step, the portfolio manager works closely with the project managers or the PMO to:

- Gather information to monitor the performance of the portfolio
- Identify and resolve issues within the portfolio, including reallocating resources
- Steer the portfolio, making changes when necessary to rescue, re-scope, cancel, or introduce new projects
- Manage escalations and midcycle requests for changes to portfolio composition---for example, adding new projects
- Initiate a full portfolio review and reconstruction on a scheduled basis, such as quarterly or annually

Portfolio Governance

This paper focuses on the process and tools for PPfM. However, knowing the process and tools is not enough. PPfM must have a governance framework. Governance specifies who has responsibilities in each process step and how these individuals will work together to make good decisions about projects. PPfM is about sharing power and decision making at very senior management levels, so clear governance is vital. As an example, Exhibit 10 shows an IT organization’s governance structure for implementing the PPfM process discussed in this paper (Oltmann, 2007, p. 140).

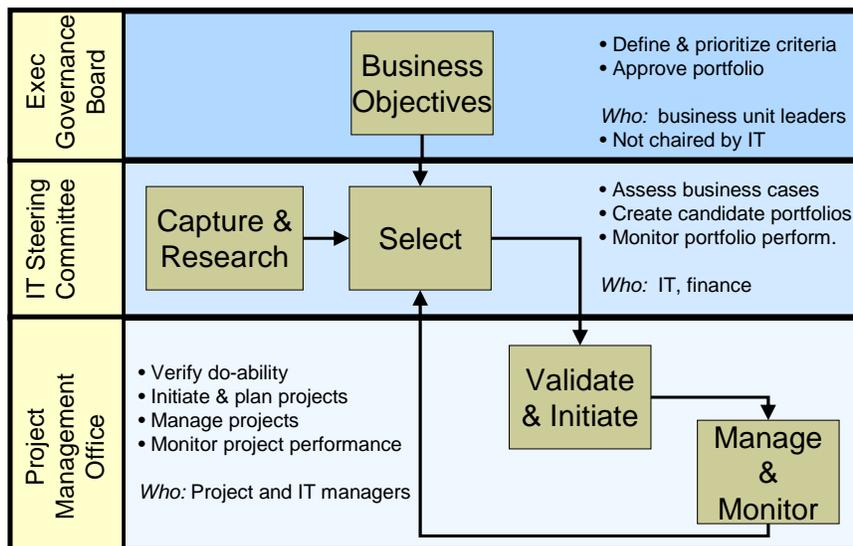


Exhibit 10- Portfolio Governance and Process Work Together

End Point

Based on my experience managing portfolios and helping clients, the following are attributes of a good portfolio management system:

1. Encourages structured investment decision making based on effective criteria
2. Helps decision makers make hard trade-offs, including saying “no” to some projects
3. Ensures that strategy and execution are aligned
4. Backed by strong, long-term executive participation
5. Is an on-going process with frequent looks at the “big picture”
6. Favors process simplicity and transparency
7. Strongly tied to governance

Organizations that combine effective project portfolio management with good project management achieve these results:

- Faster time to market
- Higher productivity
- Less chaos
- Strategy that actually gets implemented

For example, the IBM Institute for Business Values scored the performance of over 20 electronics and high-technology manufacturers from 1996 to 2001. Leaders in portfolio management delivered earnings performance that was 46% more predictable than the performance of poor performers. The authors say, “Leaders in portfolio management stand in stark contrast to many companies, where portfolio management only occurs when poor business performance and reduced budgets force crisis-mode cuts to projects” (Cooper, Greenberg, & Zuk, 2002, p. 12).

The next time that you hear the complaint “We’re spread too thin,” look below the surface. Are your projects unfocused and misaligned? Do too many “good” projects compete for too few resources? Combining project portfolio management with project management will help you “do the right projects and do them right.”

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