From The Rational Edge: This article provides a high-level introduction to the basic principles and benefits of project portfolio management, or PPM. It explains the management disciplines that comprise PPM as well as how to construct a project portfolio management system (PPMS) that will maintain alignment between portfolio results and the organization's business strategy.

Many organizations use portfolio management techniques to determine the type of business they want to pursue or what IT project investments to make. Project portfolio management (PPM) incorporates an added dimension to this approach through the use of project management disciplines and ongoing governance to ensure that the project investment portfolio is meeting its desired objectives.

PPM groups, views, analyzes, and manages projects together to maximize positive business results within an organization's resource constraints. Projects are either included in, or excluded from, the portfolio based on their alignment with the portfolio strategy and performance against the portfolio business objectives. This article provides a high-level introduction to both PPM and the IBM tools that can help organizations implement it.

Understanding PPM

PPM is a blend of management disciplines that combines:

- **A business management focus** to ensure that all projects and programs align with the portfolio strategy.
- **A general management focus** for managing an organization's resources and risks.
- **A project management focus** for reviewing, assessing, and managing projects and programs to ensure they are meeting or exceeding their planned contribution to the portfolio.

PPM's holistic approach recognizes that the portfolio's health is affected by the performance of all projects within the portfolio, as well as by their direct/indirect dependencies and available resources. Managers should make decisions that lead to overall portfolio success, even if they conflict with the best interests of a specific portfolio project.

Combining project management disciplines with business and general management practices at the portfolio level gives an organization the ability to:

- Select projects and programs that are aligned with the organization's strategies and objectives.
- Make the best use of available resources by applying to the highest priority projects.
- Regularly assess how projects and programs are contributing to portfolio health.
- Take management action to keep the portfolio in compliance with business objectives.

Effective use of project management disciplines at the project and program levels improves customer satisfaction, reduces the number of risks and problems, and increases success. The goal of PPM is to realize these same benefits at the portfolio level by applying a consistent structured management approach.

**PPM lifecycle**

As with any business process, PPM has a lifecycle that demands the application of appropriate management skills and disciplines, shown in Figure 1.

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As Figure 1 implies, PPM lifecycle activities include:

- Identifying, qualifying, and funding projects / programs that address the business strategy.
- Managing organizational resource demand, capacity, and capability.
- Measuring performance to ensure that projects / programs are collectively meeting the portfolio strategy.
- Identifying and taking corrective actions on projects / programs not in compliance with portfolio objectives and commitments.
- Establishing effective communication and reporting mechanisms that enable timely, fact-based decision making regarding projects, programs, and the overall portfolio.
- Implementing a process to continuously improve the portfolio.

At a minimum, any comprehensive PPM approach should include the following generalized processes:

- Project selection
- Project prioritize / re-prioritize
- Portfolio monitoring
- Portfolio assessment
- Corrective action management
- Project termination and removal

Business management focus

The key objective of PPM business management activities is to define the scope and validate the portfolio’s viability from a business perspective. This requires defining portfolio strategy and decision criteria that allow managers to select and prioritize projects. It is also important to define business indicators for assessing the portfolio’s health and performance.

The decision criteria should be linked to the organization’s business strategy and objectives. The process for prioritizing and selecting projects should go beyond financial objectives, such as profitability, return on investment (ROI), budgeted costs, and revenue growth. It should encompass

other value considerations, including customer demand, desirability of entering into new markets or expanding existing ones, and operational or mandatory initiatives.

Organizations can also use the business decision criteria to revalidate or cancel projects or programs that are already in the planning or implementation stage when the portfolio is defined.

**Selecting and prioritizing projects**

The objective of this step is to select and prioritize projects to deliver the highest value, based on the pre-established portfolio business decision and priority criteria. Priority should be based on both individual project benefits and overall impact to the project portfolio. In addition, the resulting portfolio mix must not exceed the organization's resource capacity or capability.

Portfolio priority criteria should be limited in number, understandable, measurable, and consistently applied. Various criteria can have different weightings, based on their importance to meeting business strategy and objectives.

Although priority criteria are different from business decision criteria, both should be applied to determine what projects to include in the portfolio.

- Business decision criteria should be aligned with the business strategy and objectives. Once a project becomes part of the portfolio, these criteria should also be used for assessing the project's health and performance.
- Priority criteria establish the portfolio's overall objectives and help determine what type (categories) of projects and how many of each type to include in the portfolio. Resource assessment also plays a role here, as we shall discuss below.

**General management focus**

Resource and risk management are part of PPM's general management focus. Before deciding what projects to include in a portfolio and how to prioritize existing projects, managers need to assess their resources from a supply-and-demand perspective. They must also ensure that a sufficient number of people with appropriate skills are available for priority projects.

To maintain a healthy portfolio, managers must monitor and assess the organization's total resource capacity and capabilities to ensure that it can:

- Plan and build resource capabilities in anticipation of future resource demands.
- Act quickly on resource investment decisions made in response to project demands and forecasts.
- Determine whether current and planned resources are adequate for achieving portfolio objectives.
- Assess current and future training needs.
- Quickly identify resource surpluses or shortages and formulate redistribution plans.
- Efficiently implement redistribution plans and shift key resources to higher priority projects.

**Identify portfolio risks**

Portfolio risk management includes processes that identify, analyze, respond to, track, and control any risks that would prevent the portfolio from achieving its business objectives. These processes should include reviews of project-level risks with negative implications for the portfolio, ensuring that the project manager has a responsible risk mitigation plan.

Additionally, it is important to do a consolidated risk assessment for the portfolio overall, to determine whether it is within the threshold set by the organization. Since portfolios and their environments are
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dynamic, managers should review and update their portfolio risk management plans on a regular basis throughout the portfolio lifecycle.

Identifying portfolio risks starts with an evaluation of the specific project portfolio environment: What business decision criteria have been established? What working assumptions regarding the organization's current business processes and decision points might increase risk for the portfolio? Managers should refine this evaluation iteratively, as they plan, assess, and manage their portfolio management approach.

What constitutes a portfolio risk? Here are some examples:

- Project inter-dependencies within the portfolio
- Limited resource capacity / capability versus substantial demand
- Changes in business strategy / business opportunities
- A large percentage of high-risk projects within the portfolio
- Business processes that conflict with portfolio management practices

Project management focus

The keys to a successful and effective PPM implementation are a knowledgeable portfolio manager(s) and a supporting process that incorporates project management disciplines. These disciplines provide portfolio managers with the necessary mechanisms and data to assess the portfolio's health and value, and the ability to make effective business decisions about project approvals, priorities, funding, staffing, and execution. Identifying "out of compliance" conditions by comparing actual performance against projections is a key capability; managers can swiftly address the issues and bring the portfolio back into compliance.

Establishing a PPMS

The process that portfolio managers need -- called a project portfolio management system, or PPMS -- is a comprehensive, documented, dynamic set of policies, business processes, tools, plans, and controls for portfolio management. The PPMS provides direction and limits for individual project / program management systems and ensures that they are all aligned to expedite conflict resolution.

Planning and implementing an effective PPMS provides a way to routinely analyze and quantify project value, prioritize projects, and identify projects to initiate, re-prioritize, or terminate. Specifically, it allows managers to answer questions, such as:

- Which projects will best support the organization's business strategies and goals?
- Is a project or program providing the anticipated business results, as demonstrated by portfolio metrics?
- Does each portfolio project have appropriate resources, including staff with the right skill sets?

A comprehensive PPMS should contain both tactical and strategic processes. Tactical processes address continuing performance issues for ongoing portfolio projects. Strategic processes focus on the portfolio's evolution, including selection of new projects that meet business objectives and strategies. In addition, recommendations to reduce a project's scope or cancel a project that does not align with portfolio objectives and strategy should also be part of PPMS processes.

Primary PPMS activities include collecting project information, assessing project and portfolio health and business contribution, and managing corrective actions. These activities are the basis for regularly scheduled reviews by portfolio stakeholders.

Collecting portfolio information

To accurately assess a portfolio, managers need consolidated and / or aggregated project-level data based on a combination of quantitative (financials, defects, market share, etc.) and qualitative (stakeholder commitment, client satisfaction, risks, etc.) measures. Before analyzing the information,
they should reconcile and validate it for accuracy. Then, they should view the data from both a project-level and portfolio-level perspective. For example, they should assess the financial health of each component project as well as the projects and programs in aggregate to ensure that the entire portfolio is meeting its financial objectives.

Tools for collecting and consolidating the data should correspond to the kind of tracking that is required. A portfolio with a small number of projects may be able to use spreadsheets to track progress and assess the portfolio’s health, but a larger portfolio with multiple, complex projects requires an automated tool that can assist with collection, consolidation, and analysis efforts.

**Assessing the portfolio**

Effective project portfolio analysis involves measuring and comparing portfolio business results to determine whether the portfolio is meeting its objectives, as defined by the business decision criteria. The assessment process needs to incorporate both a short- and long-term perspective, and should measure and examine both tactical and strategic parameters:

- **Tactical perspective**: Health and performance of individual portfolio projects
- **Strategic perspective**: Overall portfolio business results

Measuring project and portfolio performance against goals (metrics) allows managers to answer questions, such as:

- Are the active projects producing expected business benefits and supporting the portfolio's overall business strategy?
- Are the projects prioritized to balance risk against optimum value to the portfolio?
- What trends or indicators point to trouble within a project? What corrective action is necessary?
- Do the project proposals in the pipeline correspond with market trends? Do they support current / future customer needs and new strategic objectives?
- Are enough appropriate resources available to implement the current and forecasted projects effectively?

By mapping the health / contribution data for each project to the business decision criteria, managers can easily see whether the project is either meeting or exceeding threshold indicators, thereby identifying portions of the portfolio that are out of compliance.

Rational Portfolio Manager, IBM's strategic project management tool, provides Portfolio Dashboard, which helps managers gather and interpret portfolio information through a variety of formats, including investment bubble maps, scorecards, multidimensional OLAP pivots, and reports. For example, using Portfolio Dashboard, managers can assign each project threshold a status of green, yellow, or red, and then develop scorecard or dashboard views and reports. Then, they can see at a glance how the project is performing.

Figure 2 shows an example of the variety of views and reports that you can create using Rational Portfolio Manager's Portfolio Dashboard. Managers can use these views and reports for the portfolio health and value contribution analysis, based on both qualitative and quantitative indicators. For scorecards and investment maps, each project in the portfolio would be assessed and assigned a status of green, yellow, or red. The manager would know that projects going from green to yellow, or from green to red, should be analyzed to determine whether their negative impact on the portfolio is sufficient to warrant corrective action.
Managing the portfolio

Taking corrective actions on non-compliant projects is a key component of the PPMS. If a project and/or portfolio is not meeting or exceeding its objectives, it is critical to identify the root cause, develop a corrective action plan, and then monitor and track to ensure the action is implemented and the issue is resolved. The PPMS should also have a mechanism for tracking trends and anticipating issues so that managers can implement proactive measures to avoid non-compliant projects. The PPMS should also document and track these measures to ensure they accomplish their objectives. If a successful preventive measure is repeatable, then the portfolio manager should incorporate it into the PPMS.

Collecting data and analyzing it against business criteria and objectives allows managers and executives to make fact-based decisions regarding project investments, freeing them from emotional influences that may not reflect what's best for the portfolio. Difficult but necessary corrective/preventive actions might include:

- Reallocating resources to higher priority projects.
- Assigning certified project managers to projects with contracts over a certain dollar value.
- Canceling or not bidding on selected projects or contracts.
- Implementing a risk mitigation plan.
- Performing a project quality review.
- Negotiating schedule changes.
- Providing guidance to the project manager.

Reviewing the portfolio

Figure 2: Available views / reports via Rational Portfolio Manager's Portfolio Dashboard
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A portfolio review is essential for communicating portfolio status to all project stakeholders. Such reviews should be treated as an iterative process that enables managers and executives to make sound decisions that keep the portfolio healthy. These decisions relate to:

- Ensuring that the portfolio continues to align with business strategy.
- Ensuring that the current portfolio is meeting its objectives.
- Tracking the effectiveness of corrective management actions.
- Providing a balanced portfolio (risk and value) within the organization's capabilities and constraints.
- Validating business decision criteria and project/portfolio results for accuracy.
- Ensuring that resource capacity can meet project demands.
- Ensuring that the PPMS is appropriate and effective.

The frequency, format, and attendee list for a portfolio review will vary from organization to organization. The sessions should align with your organizational structure, and with the number, size, and duration of projects in the portfolio. If you have automated reporting capabilities, you can distribute reports between meetings and accomplish your objectives very quickly at each gathering.

Improving the portfolio

Portfolios are dynamic. Whether your PPMS is already in a "steady state" or still evolving, you need a defined process for continuous improvement that is tightly linked with portfolio assessment and action management processes for tracking and measuring portfolio improvements. An improvement process is also important to ensure that the portfolio assessment results represent "feedback" into the business processes. Finally, the PPMS should include a mechanism for gathering, analyzing, and incorporating lessons learned, for the benefit of future portfolio projects.

Reaping the benefits

By applying project management best practices to portfolio management via a well-defined PPMS, organizations can realize tremendous benefits:

- Higher portfolio performance through disciplined, corrective management action for non-compliant projects and programs
- Lower costs through consistent management processes
- Earlier identification of troubled projects and programs
- Achievement of portfolio objectives through corrections based on performance vs. business criteria comparisons
- Organization-wide improvements in communication and management effectiveness
- Lower-risk project investments and an overall project balance that optimizes business value

The net effect of a good PPM approach is a more controlled environment and a business unit that can make a stronger contribution to the overall business strategy.

NOTE: For more information about Rational Portfolio Manager, IBM's strategic project management tool, visit http://www-306.ibm.com/software/awdtools/portfolio/

Notes