

Many organizations are using software to organize and analyze all types of project data into project portfolios and across the entire enterprise. Enterprise or project portfolio management (PPM) tools integrate information from multiple projects to show the projects' status and health. In 2012, over half of the respondents in two different studies (PMI's PMI Pulse of the Profession™ and a PricewaterhouseCoopers survey) reported frequent use of PPM. The highest adoption rates were reported by organizations in retail, insurance, auto, banking and capital markets, telecommunications, manufacturing, energy, and defense. The main reasons organizations use project portfolio management included customer satisfaction, cost reduction, and revenue growth.²³

More recently, a 2014 report from Gartner says the market for PPM software continues to grow, with annual sales over \$1.65 billion. "Demand for IT PPM applications has not wavered in more than 13 years, but, rather, increased exponentially over the past 10 years. The pace of change... is driving continued demand for enterprise software products that can help with the effective planning, execution, and management of projects and programs materializing from the need for today's enterprises to change and adapt quickly to shifts in the business climate."²⁴

A study by Forrester estimates that companies are achieving returns of 250 percent from their investments in PPM tools. At a Planisware PPM Solutions Summit in 2014, customers shared examples of their success stories in achieving even higher returns:

- Pfizer uses PPM software to accelerate innovation and improve transparency and accountability of resources to deliver scientific excellence. Pfizer can quickly access trusted data analytics to make strategic resource allocations that maximize portfolio value.
- Ford uses Planisware to gain greater transparency over their portfolio of projects. Greater transparency gives management a better understanding of resources shared across projects, and enhances communication about statuses. They can quickly alert affected program managers and product development teams of potential risks so they can implement risk management strategies.²⁵

As with using any software, however, managers must make sure that the data is accurate and up to date, and ask pertinent questions before making any major decisions.

CASE WRAP-UP

After talking to his colleagues about the meeting, Juan had a better idea about the importance of project cost management. He understood the value of doing detailed studies before making major expenditures on new projects, especially after learning about the high cost of correcting defects late in a project. He also learned the importance of developing good cost estimates and keeping costs on track. He enjoyed seeing how the cost estimate was developed for the Surveyor Pro project, and was eager to learn more about various estimating tools and techniques.

At the meeting, government officials cancelled several projects when the project managers showed how poorly the projects were performing and admitted that they did not do much planning and analysis early in the projects. Juan knew that he could not focus on just the technical aspects of projects if he wanted to move ahead in his career. He began to wonder whether several projects the city was considering were really worth the taxpayers' money. Issues of cost management added a new dimension to Juan's job.

Many project managers also want to move on to manage larger projects, become program managers, then vice presidents, and eventually CEOs. Understanding project portfolio management, therefore is important for both project and organizational success.

Jane Walton, the project portfolio manager for IT projects at Schlumberger, saved the company \$3 million in one year by organizing the organization's 120 IT projects into a portfolio. Manufacturing companies have used project portfolio management since the 1960s, and Walton anticipated the need to justify investments in IT projects just as managers have to justify capital investment projects. She found that 80 percent of the organization's projects overlapped, and that 14 separate projects were trying to accomplish the same thing. Other managers, such as Douglas Hubbard, president of a consulting firm, see the need to use project portfolio management, especially for IT projects. Hubbard suggests, "IT investments are huge, risky investments. It's time we do this."²²

Project portfolio managers can start by using spreadsheet software to develop and manage project portfolios, or they can use sophisticated software designed to help manage project portfolios. Several software tools available today help project portfolio managers summarize earned value and project portfolio information, as described in the following section.

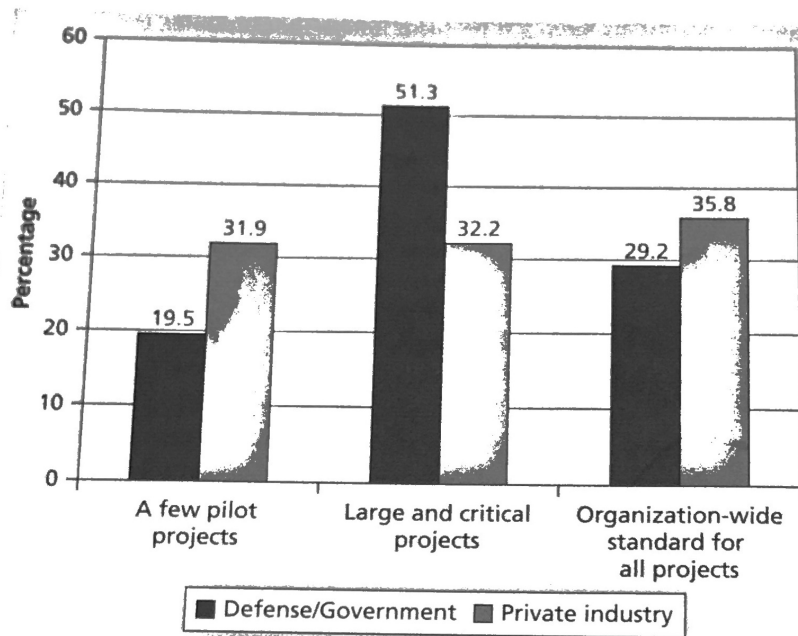
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7.7 USING PROJECT MANAGEMENT SOFTWARE TO ASSIST IN PROJECT COST MANAGEMENT

Most organizations use software to assist with project cost management. Spreadsheets are a common tool for cost estimating, cost budgeting, and cost control. Many companies also use more sophisticated and centralized financial software to provide important cost-related information to accounting and finance personnel. This section focuses on how you can use project management software in cost management. Appendix A includes a section on using the cost management features in Project 2013.

Project management software can increase a project manager's effectiveness during each process of project cost management. It can help you study overall project information or identify and focus on tasks that are over a specified cost limit. You can use the software to assign costs to resources and tasks, prepare cost estimates, develop cost budgets, and monitor cost performance. Project 2013 has several standard cost reports: cash flow, budget, over-budget tasks, over-budget resources, and earned value reports. For several of these reports, you must enter percentage completion information and actual costs, just as you do when manually calculating earned value or other analyses.

Many IT project managers use other tools to manage cost information because they do not know that they can use project management software, or they do not track costs based on a WBS, as most project management software does. Instead of using dedicated project management software for cost management, some IT project managers use company accounting systems; others use spreadsheet software to achieve more flexibility. Project managers who use other software often do so because these other systems are more generally accepted in their organizations and more people know how to use them. To improve project cost management, several companies have developed methods to link data between their project management software and their main accounting software. Regardless, users need training to use dedicated project management software and understand the available features.



Source: Lingguang Song, "Earned Value Management: A Global and Cross-Industry Perspective on Current EVM Practice," PMI (2011).

FIGURE 7-6 Earned value usage

7.6b Project Portfolio Management

As you saw in Chapter 1, many organizations now collect and control an entire suite of projects or investments as one set of interrelated activities in one place—a portfolio. Several software tools provide graphics to summarize performance on a portfolio of projects, as shown in Chapter 4. Key metrics, including cost performance, are often shown in green, yellow, or red, indicating that things are going as planned, that problems exist, or that major problems exist, respectively. Project managers need to understand how their projects fit into the bigger picture. For example, there can be a portfolio for IT projects and portfolios for other types of projects. Looking at broad categories of similar projects enables project managers to help their organizations make wise investment decisions.

An organization can view project portfolio management as having five levels, from simplest to most complex, as follows:

1. Put all your projects in one database.
2. Prioritize the projects in your database.
3. Divide your projects into two or three budgets based on type of investment, such as utilities or required systems to keep things running, incremental upgrades, and strategic investments.
4. Automate the repository.
5. Apply modern portfolio theory, including risk-return tools that map project risk on a curve.

subdeliverables. For example, you might have a WBS for a house that includes items for each room in the house. Collecting earned value data for each room would provide meaningful information instead of trying to collect detailed information for each component in the room, such as flooring, furniture, and lighting.

It is important to remember that the heart and soul of EVM are estimates. The entire EVM process begins with an estimate; when the estimate is off, all the calculations will be off. Before an organization attempts to use EVM, it must learn to develop good estimates.

Earned value management is the primary method available for integrating performance, cost, and schedule data. It can be a powerful tool for project managers and top management to use in evaluating project performance. Project management software, such as Project 2013, includes tables for collecting earned value data and reports that calculate variance information. Project 2013 also allows you to easily produce an earned value chart, similar to the one in Figure 7-5, without importing the data into Microsoft Excel. See the project cost management section of Appendix A for an example of using earned value management.

Another approach to evaluating the performance of multiple projects is project portfolio management, as described in the following section.



GLOBAL ISSUES

The Project Management Institute conducted a major study in 2011 to help understand and gauge the current level of EVM practice. The researchers surveyed more than 600 project management practitioners in 61 countries, providing a cross-sectional view of the most current EVM practices. Respondents were classified by industry sector, motivation for EVM usage, organizational role, and geographic location. The study included the following key findings:

- EVM is used worldwide, and it is particularly popular in the Middle East, South Asia, Canada, and Europe.
- Most countries require EVM for large defense or government projects, as shown in Figure 7-6.
- EVM is also used in such private-industry sectors as IT, construction, energy, and manufacturing. However, most private companies have not yet applied EVM to their projects because management does not require it, feeling it is too complex and not cost effective.
- The level of EVM use and maturity varies among organizations and projects, but budget size appears to be the most important decision factor.
- EVM's contributions and cost effectiveness are widely recognized; most respondents said they agree or strongly agree that EVM provides early warning signs, helping them to control project scope, time, and cost. EVM's contribution to cost performance was ranked higher than schedule performance, and the difference was statistically significant.
- Top barriers to enhanced use of EVM were lack of motivation and lack of expertise.
- Top management support, buy-in of project staff, training, organizational culture and leadership, and maturity of the project management system were the most important factors in successful use of EVM.²¹