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MANAGEMENT
OFFICE
HANDBOOK

THIRD EDITION

GERARD M. HILL



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Chapter 2

Project Management Tools

“Tools of the trade” enable individuals in any profession to perform their work more effectively, efficiently, and consistently. The project management profession is like most others in its need for specialized tools. In today’s project management environment, the project management office (PMO) can serve its constituency well by providing support and guidance regarding the selection, implementation, and use of project management tools.

The tools needed in today’s project environment are predominantly automated software applications. However, there are still many paper-based tools, such as activity checklists, data collection templates, process guides, and knowledge-based desk references that also facilitate project management. The introduction and management of project management tools can be accomplished on an as-needed basis by ad hoc teams or individuals or, when aligned as a PMO function, as part of ongoing operations planning within the project management environment.

The “project management tools” function enables the PMO to

- Determine the types of tools that are needed and that fit within the project management environment
- Plan and manage project management tool selection, implementation, and maintenance
- Monitor and manage the consistent use of project management tools
- Provide training in the use of project management tools for users at various levels of need and expertise
- Ensure that requirements for tool integration with existing systems and processes are achieved

Professional project managers will inherently seek ways to enhance their performance, make project work proceed smoothly, evaluate project information, and manage project team activities. Whereas each project manager will choose tools appropriate for the task at hand, project managers with more experience will likely have developed a selection of preferred tools. Thus, the PMO challenge will be in (1) evaluating the tools that individuals are already using and (2) achieving consensus among project managers for the selection and use of common project management tools that will provide a consistent approach within the project management environment. It is essential, then, that the PMO considers the project managers' insights and recommendations for project management tools. However, it is also incumbent on the PMO to do its own homework so that it can identify and recommend organizational tools to achieve business interests. It should adequately research the availability of tools in the marketplace, while also considering in-house development of tools to satisfy business and project management needs. In addition, the PMO should prepare for its responsibility in overseeing tool utilization and maintenance once the tools are acquired or developed and implemented.

Project Environment Interface Concepts

The key aspect of this PMO function lies in the concept that implementation and utilization of project management tools are centrally controlled activities. Although the PMO considers individual project manager requests and recommendations concerning tools used in the project management environment, it discounts or eliminates those tools that are not compatible with preferred processes and practices or that require extended effort to transfer or combine data types and results across projects for higher-level reviews. The PMO's "project management tools" function helps to establish standard applications and systems used across all projects, thereby facilitating the communication of more accurate and timely information about projects and the project management environment. The PMO will need to address the challenge of providing project tools that achieve user acceptance, facilitate intended access and use, and provide added value to the project management endeavor.

This PMO function requires collaboration with stakeholders in the project management environment to ascertain their perspectives on tool needs and use. Traditionally, discussions about project management tools have focused on managing project cost, schedule, and resources—and there is still a prevalent need for those types of tools. Today, however, there is an additional need to consider tools that can implement modern project management concepts, support a project manager's broader business responsibilities, and oversee multiple projects and management of project portfolios.

The PMO can address the "project management tools" function by identifying and managing the essential tools needed to accomplish project management

objectives. However, the PMO should also examine a wider variety of tools available to the project environment, including tools from the following categories.

- *Project life cycle management*: Tools facilitating the accomplishment of project management activities
 - Project management methodology systems
 - Project management methodology process organizers
 - Process step and checklist managers
- *Project planning and oversight*: Tools providing for planning, monitoring, and managing project performance
 - Work breakdown structure (WBS) managers
 - Project schedule management applications
 - Project cost management applications
 - Project resource management applications
 - Task performance management applications
 - Time sheets and time management applications
 - Technique-specific applications (e.g., risk management, change management)
 - Executive dashboards
- *Project collaboration*: Tools enabling the project manager, project team members, and project stakeholders to communicate and to exchange and review pertinent technical and business information about projects in the organization, individually and collectively
 - Meeting management applications
 - Report management applications
 - E-mail systems
 - Online “chat room” applications
 - Team collaboration applications
 - Knowledge management systems
 - Online technical library systems
- *Document management*: Tools facilitating development and management of project requirements and specifications, project plans, technical guidance, and other relevant project documentation
 - Word processor applications
 - Spreadsheet applications
 - Database applications
 - Computer-aided design (CAD) and drawing creation and storage applications
 - Document management systems
 - Content management systems
- *Business systems*: Tools enabling the business aspects of project management to be integrated for use by the PMO, project and program managers, and other project stakeholders
 - Portfolio management systems
 - Business case and requirements capture tools

- Contract and agreement management applications
- Customer relationship management systems
- Vendor, consultant, and supplier (subcontractor) management systems
- Equipment acquisition, assignment, and management applications
- Proposal management systems
- Facility management applications
- *Project environment support:* Tools enabling the PMO or other relevant managers in the project environment to examine capability, monitor resource availability and utilization, implement practices, and conduct operational planning and support activities
 - Project management capability/maturity assessment applications
 - Training program management applications
 - Online training program review and registration systems
 - Resource information management systems
 - Business and project metrics management applications

The PMO can examine these categories of project management tools in its ongoing responsibility to evaluate and recommend tools that enhance the relevant organization's capability in project management, thus increasing the support and likelihood of success for project managers.

Business Environment Interface Concepts

Project management tools are selected with the principal goal of supporting project managers and their teams. However, by its nature, project management, and associated project work, is a critical representation of the organization's business. Therefore, the project management tools used in the project management environment can affect the creation and exchange of vital business information across business units. In many cases, entities on the business side of the organization will expect that their input to project management tool selection and implementation will be considered as well. A brief review of the types of tools suggested for use in the project management environment, as presented in the previous section, shows how information created, collected, calculated, and stored through the use of project management tools is also a valuable asset to the business functions of the organization.

The following list highlights some cross-functional business users of project management tools. Of course, the culture of each organization will determine whether the following functional roles are considered project stakeholders. Notwithstanding that label, these functional roles will have interest in the output of project management tools.

- *Executives:* Executive dashboards and portfolio management systems facilitate senior-level management decisions for project selection, continuation,

and termination, as well as decisions concerning overall resource allocation. This includes the receipt and review of associated project status and progress reports, the coordination and approval of project management plans, and resolution of issues and problems. The executive role normally includes the project executive or project sponsor and extends to participants on senior-level control and advisory boards as well as ad hoc business committees.

- *Resource managers:* Project resources are frequently not assigned exclusively to the PMO or to the project manager on a full-time basis. Therefore, management of the project resource matrix is necessary for effective project team formation, ongoing participation management, and oversight of team member performance. Resource managers, along with the project manager, need access to information about resource utilization, which can be provided by different types of project management tools.
- *Functional managers:* Organizational managers serving in traditional business areas will find project information sufficiently relevant to their business efforts to warrant their inclusion for access to and use of certain project management tools.
 - Business development and sales managers will have an interest in performing project initiation tasks and customer interface activities as may be outlined and managed in the methodology tool. Consequently, they will have at least some interest in monitoring project progress for customer satisfaction, perhaps using the executive dashboard tool.
 - Marketing managers will be looking for project and customer information to develop targeting strategies and to advertise project successes in publications and news releases. They will be seeking access to project information databases across the spectrum of project management tools.
 - Human resource managers in the organization hold ultimate responsibility for ensuring recruitment and retention of qualified project managers and team members to fulfill all project work requirements and contract obligations. These managers will have a definite interest in project management tools that capture and convey information about resource assignments, performance results, and future commitments. Alternatively, these project management tools can also be used to support the human resource department's job of maintaining an appropriate supply of qualified project managers.
 - Finance and accounting managers, legal advisors, contract and procurement managers, and facility and equipment managers play various direct and indirect roles in supporting project management. Managers in these functional areas can gain useful access to pertinent information from a variety of project management tools.

- *Customers and subcontractors*: External parties as well as internal customers who have an interest in project information can access reporting tools from a network or Web-based applications to obtain project status and customized progress reports. Using collaboration tools, this group also can respond to and comment on project status, participate in associated online discussions and meetings, or conduct coordination for change management activities. Moreover, automated invoice and payment systems, as might be found within a comprehensive contract management, vendor management, or cost management system, would be useful to this project stakeholder audience.

The PMO can best serve the relevant organization by including these business function managers in its deliberations and decisions concerning acquisition or development and use of project management tools.

Project Management Tools Activities across the PMO Continuum

The progression of the “project management tools” function along the PMO competency continuum is characterized by an early capability to implement a standard tool set across projects, followed by increasing introduction and use of enterprise-level business applications.

Table 2.1 presents an overview of the range of prescribed PMO project management tools activities according to each level in the PMO competency continuum.

The project office is the primary user of the project management tools that have been selected and implemented. In the absence of a higher-level PMO, it may independently acquire and use the tools it needs to conduct project management. However, tool acquisition and implementation decisions are usually made in collaboration with other project and functional managers.

Midrange PMO levels of the continuum have the responsibility of introducing progressively advanced project management tool sets based on project environment needs. One primary goal is to implement tools that bolster processes and practices that already exist in the project management environment. Otherwise, tool selection represents a deliberate decision to change to the processes and practices that are guided and supported by the new tool. The midrange PMO distinctly performs tool management when recognizing that tool introductions inherently establish a common approach to project management that will be used across all projects and perhaps across multiple business units. As the PMO introduces more advanced tools to integrate the business aspects of project management, that common approach is then extended across the enterprise. This illustrates the importance of ensuring that the preferred processes are in place and that acquired or developed tools support those preferred processes.

Table 2.1 Range of Project Management Tools Activities across the PMO Continuum

<i>Project Office</i>	<i>Basic PMO</i>	<i>Standard PMO</i>	<i>Advanced PMO</i>	<i>Center of Excellence</i>
<p>Applies available project management tools in a consistent manner to achieve effective project oversight</p>	<p>Introduces a set of fundamental project management tools</p> <ul style="list-style-type: none"> • Identifies the need for tools • Manages tool selection and acquisition or development • Facilitates tool implementation • Conducts project management tool training 	<p>Introduces more advanced project management tools</p> <ul style="list-style-type: none"> • Conducts tool research and comparative evaluations to ensure project environment fit • Monitors project management tool utilization • Evaluates project management tool performance 	<p>Introduces a viable project knowledge management system and tools</p> <ul style="list-style-type: none"> • Establishes a project-by-project Web presence • Creates a complete project and business information database • Implements an executive dashboard 	<p>Oversees advanced tool sets that extend into all business functions</p> <ul style="list-style-type: none"> • Designs and implements enterprise-wide tool solutions • Introduces access to external project management tool users • Examines and implements personal digital assistants (PDAs) and wireless tool solutions

The center of excellence continues in its role as a business unit responsible for integrating business performance in the project environment. It monitors project management tool selection and implementation with a concern for enterprise-wide impacts and integration. It also determines the benefits and opportunities for the organization in connecting external users. As a result, it develops tool access rules and procedural guidance to bring customers and vendors into the organization's real-time project management information system.

The PMO's "project management tools" function provides project managers and project team members with timely access to pertinent information and guidance in the project management environment. It also accommodates access to project information on a real-time basis per the individual needs of project stakeholders.

Project Management Tools Function Model

The PMO's "project management tools" function model captures the process by which the PMO can introduce any tools deemed appropriate for use in the project management environment. The primary activities of the PMO's "project management tools" function model are depicted in Figure 2.1. Each activity is described in the following subsections.

Select Project Management Tools

The PMO is ideally positioned to lead project management tool selection through its affiliation and interface role with each project manager, project team member, and other stakeholders in the project environment—the end users of project management tools. Inasmuch as tools are selected to facilitate project management, the PMO is wise to consult with these project participants as it considers the following steps in the process of selecting project management tools.

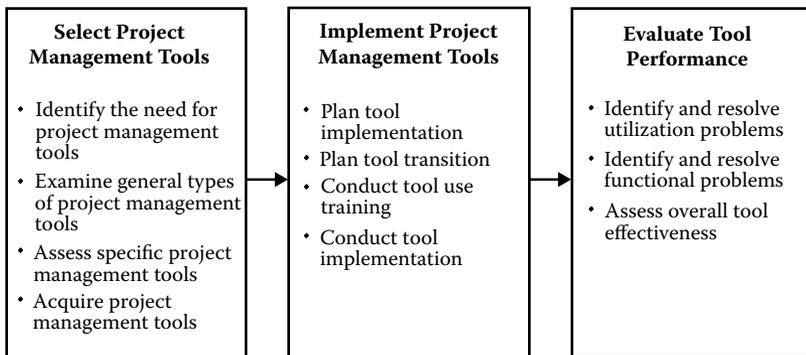


Figure 2.1 "Project management tools" function model.

Identify the Need for Project Management Tools

Professionals in the project management discipline will likely support the need for project management tools that help to achieve project management objectives and business success. Many will have preferred products and solutions in mind when discussions arise, and thus, individual contributions of knowledge about tool preferences can be obtained for consideration. However, it is incumbent upon the PMO to establish tool selection parameters and find common benefits for the relevant organization in its ongoing search for appropriate project management tools. This includes translating individual and collective tool preferences into solutions actually needed within the project management environment.

The PMO can identify the needs for project management tools in the three ways discussed below.

Examine the Current Environment

The PMO can begin identifying project management tool requirements by examining the current project environment for performance results and reporting capability. This examination should identify what tools are currently being used, individually or collectively; their effectiveness in supporting project management; and their responsiveness to project management reporting requirements. Such an examination may be a casual effort or a formally planned activity that includes user surveys and tool inspections. The results of this examination should provide sufficient indications of which tools are present in the project management environment, how they are being used, and what the user preferences are for each tool.

The PMO should analyze current tool functionality and utilization. This includes a comparison of current tool use to the desired state of tool use across projects and a determination of the level of tool standardization that currently exists within the project management environment.

Examining project management tools currently found within the project management environment enables the PMO to establish a baseline for tool utilization from which future tool standardization and functional capability enhancements can be planned. In particular, the PMO should review tool utilization results against its goals for implementing best practices to see where gaps exist in the functionality of project management tools. Those gaps that are uncovered represent the need for either tool standardization or expanded tool functionality, warranting selection of new tools.

Evaluate Requests and Recommendations for Tools

Individuals responsible for conducting project management activities should be a primary source for identifying needed tools. Project managers at the forefront of project activities are likely to be aware of tools and their functionality through ongoing efforts to improve project and personal performance. The PMO should consult these

professionals to identify needs in the workplace and to establish a process for receiving and evaluating requests and recommendations for tool acquisition and use.

The ideal PMO goal is standardization of project management tools across the relevant organization. However, there are always exceptions to the rule. Individual requests or recommendations for project management tools should be considered relative to the implications and benefits of their use within the project management environment. As deemed appropriate by the PMO, some individuals may need to continue using current tools to accomplish their jobs.

The PMO should set up a mechanism to receive requests and recommendations for new project management tools. The PMO can thereby monitor the interests and needs of project managers and other stakeholders within the relevant organization. It can also collect information about project manager tool preferences as a means to maintaining an ongoing compilation of what tools are in the project management environment.

Determine PMO-Prescribed Tools

The PMO should be proactive in its own examination of the need for tools in the project management environment. It can do this on a casual basis or as an event in response to project performance indicators. In essence, the PMO identifies problem areas it believes can be resolved through the acquisition and implementation of project management tools. It then conducts research to find out which tools would best be utilized and makes independent decisions to acquire and implement the tools that best fit the project management environment.

However, even as PMO-prescribed tools are independently identified, some advanced collaboration with project managers and other stakeholders is still warranted and should be conducted prior to tool acquisition. To that end, the PMO may want to establish a project management tool evaluation committee comprising participants from the project management environment and across business units, as needed. This committee could review both individual requests and recommendations for project management tools as well as PMO-prescribed tools for the users.

Examine General Types of Project Management Tools

The PMO will need to choose from among the various tools that can be developed in-house or that are available for purchase in the marketplace. The following subsections provide a brief overview of the general types of project tools that the PMO can consider.

Paper-Based Tools

This type of tool can be created in-house under PMO guidance or purchased as a commercially prepared tool kit. These tools are commonly classified as templates,

checklists, and forms. Although referred to as paper based, this type of tool will usually have a basis in an automated software application. Paper-based tools can be created using common word processor applications, spreadsheet applications, and database applications. The manufacturers of commercially prepared project management applications often bundle a variety of such tools together to support their approach to achieving project management objectives. Such tool kits can be used for data collection and reporting over the entire project management life cycle.

Automated Tools

There are a multitude of automated project management tools available in the marketplace, and in some instances, an organization may be interested in designing and developing an automated tool as an in-house endeavor.

The automated tool normally resides on desktop workstations for individual users or on a network for multiple users. For the purposes of this PMO function model, we will examine two types of automated project management tools: the simple automated tool and the integrated automated tool.

In general, the simple automated tool normally resides on the computer desktop to serve one user. The *simple automated tool* is usually characterized by singular functionality, its own database, and a limited exchange of data outside the application. This is not to say that simple automated tools cannot share information, but that is usually accomplished by an export function or a nondynamic link. Rather, the simple tool maintains data on local computers solely for the purposes of its primary users.

Conversely, the *integrated automated tool* normally resides on a network server. It can have multiple purposes and possibly several functions that different users can access. Some users may never see or access all of the functions of the integrated tool. The tool, nevertheless, maintains cross-functional data and enables cross-functional reporting and data access by multiple users. In some cases, the integrated tool will retrieve data and information automatically from other automated tools and organizational databases through dynamic links that are constructed at installation. However, even integrated project management tools are limited to the purposes of their designed-in functions. The PMO should therefore also consider use of enterprise-wide management systems. These are integrated automated tools designed for business use, but they could have application in the project management environment as well.

Web-Based Tools

There are valid arguments and discussions in industry regarding the use of Web-based tools versus network-based tools. Often, it comes down to individual organizational preferences and the information technology (IT) department's policies and recommendations for use of Web-based tools. The focus of this consideration,

however, is the fact that project management applications are available on the Web. The PMO should at least consider these externally based applications for use in its project management environment based on the relevant organization's preference for Web-based tools that can be accessed via the Internet, on the expense incurred for their use, and on the reliability of the online application provider.

PDA's and Wireless Tools

With new technological innovations arriving almost daily, the PMO must consider the extent to which they will infiltrate or otherwise impact the project management environment. In particular, the use of mobile phones and personal digital assistants (PDAs) has become as common as the desktop computer, with increases in such device use still expected in the years to come.

Since the first edition of this book, some mobile devices have emerged as tools having business value. Certain mobile phones can now be acquired with standard business applications (albeit reduced functionally) and direct access to the Internet, and even some limited project management tool applications can be acquired and added. Several handheld device manufacturers also have combined the mobile phone and PDA into one unit, so many devices now have wireless connectivity for making mobile telephone calls, for access to the Internet and various e-mail accounts, and for access to databases residing on servers back at the home office or, for that matter, anywhere in the world!

The PMO should determine how it will develop or otherwise acquire project management application tools for handheld use and wireless operations. Of course, this requires close collaboration with the organization's IT department, with recognition that this could be a significant system upgrade and financial investment for the organization. In many organizations, the introduction of a wireless system will be independently led and managed by the IT department. However, the PMO should maneuver within the organization to ensure that the interests of the project management environment are duly considered.

Assess Specific Project Management Tools

The PMO should position itself as the primary evaluator for new automated applications and other tools that are introduced into the project management environment. If not in a lead role, the PMO should at least be involved in project management tool assessments. As the need for project management tools emerges, the PMO should be prepared to identify available products and assess their capability to satisfy requisite tool needs.

The PMO should use a process that enables specific project management tools to be assessed. This process usually begins with a general search to identify and develop a list of those tools that appear to provide the desired features and functionality. This preliminary list of tools available in the marketplace is then reviewed

to determine how closely each listed tool is aligned with current processes and the function to be automated. This results in a “short list” of candidate tools that is subjected to rigorous examination, possibly including discussions and demonstrations with the manufacturer or vendor.

In assessing the “short list” of tools, the PMO should examine each tool, individually and collectively, in the following ways.

- *Functions and features:* Criteria for tool functions and features are developed and specified for each new type of project management tool. Each tool is then examined to determine how well it achieves the criteria for desired functionality and preferred features. Per the depth of criteria used, this provides a more or less objective examination of tools, and it produces results that can be used to compare and contrast all tools under consideration.
- *Implementation requirements:* The requirements for tool implementation are identified as an important part of tool examination. This includes determining the level of both the internal effort and the vendor support required for tool installation and implementation. It considers the scope of tool implementation in the relevant organization or in the enterprise and includes a determination of the level of planning, technical skill and knowledge, user training, and oversight that is required to implement the selected product. This examination of tool implementation requirements then becomes a tool selection factor.
- *Application maintenance:* The need for ongoing tool maintenance should be identified as a consideration for tool selection. In the business environment, the IT group will routinely perform application checks, resolve isolated software problems, and even install new software versions in a way that is not apparent to the user population. Project management software requires the same if not a greater level of attention by the IT group, and this warrants that they be involved in reviewing maintenance requirements for candidate project management tools. As well, for some automated tools, an administrator may be required to monitor daily usage and content, and this is also a maintenance factor to consider.
- *Vendors:* A review of the several vendors of tools on the “short list” is conducted to ascertain product quality; customer use of the product; vendor history with this product in the marketplace; and the extent of vendor participation in product installation and implementation, user training, and maintenance. This usually requires the PMO to contact the vendors directly to obtain necessary information, or by extending a solicitation to bid to each vendor. The information received enables a comparison of vendors to be performed as a contributing factor to tool selection.
- *Costs:* The cost of project management tools is a tool selection factor in most organizations. Such automated tools can be quite costly, particularly when intended for multiple users. To that end, the PMO should include a review of

the need for project management tools when preparing its activity budget. If other departmental budgets are used, the PMO will have to collaborate with those business units to ensure funding availability. Cost, however, remains an important factor in the make-or-buy decision. If tool acquisition costs are too high for the budget, the PMO may also want to consider in-house development of the automated project management tool, presuming such technical capability exists in the relevant organization. All in all, the cost of tool development or purchase and implementation is a distinct factor in tool selection.

- *Customization:* In acquiring a project management tool, the organization, through the PMO, may also contemplate some alternatives to direct tool acquisition. In some cases, vendors will work with their customers to modify or adapt their automated applications for better fit within the intended project management environment. Of course, this will often incur substantial additional acquisition costs that must be considered. Nevertheless, the ability to customize tools acquired from vendors may be a tool selection factor.

The PMO's screening of new project management tools will ensure the closest possible fit for the intended purpose of the tool. This is an activity that the PMO staff, or an ad hoc committee managed by or aligned with the PMO, can perform.

Acquire Project Management Tools

After completing the screening of the candidate project management tools on the "short list," the PMO should be able to make or lead the organization toward a decision on the preferred tool. Weighing all the factors in the assessment process described above should provide sufficient insight into how well the tool will fit within the project management environment and within the relevant organization. The PMO then follows several fairly standard steps to acquire the selected tool.

First, the PMO confirms that tool acquisition (i.e., purchase) is a better alternative than in-house tool development. Information from the tool screening process is evaluated along with cost and other selection factors; the need for tool customization should also be considered. Finally, a make-or-buy decision is made, with a buy decision representing approval to proceed with tool acquisition. It is important to note that a project management tool should be acquired to support a valued project management/business principle or practice standard and that the tool can be clearly related to supporting project management performance or to eradicating existing efficiency problems.

The next step in the process is the actual purchase of the tool. A low-cost tool may be a matter of routine procurement for the organization. Conversely, a high-cost tool (due either to multiple users or to customization) may require special handling and perhaps additional approvals in the acquisition process. Accordingly, the PMO should consider these factors when planning for the acquisition and then

make the purchase. This can be done by direct payment or by submitting a vendor purchase order.

The final step in the acquisition process is tool receipt and installation. If the selected tool is not immediately acquired at the time of purchase, then it is necessary for the PMO to monitor order status and subsequent delivery. In managing tool acquisition, the PMO should plan and prepare the organization for tool installation by the vendor, by the internal IT department, or even by individual users in the case of simple automated tools. Tool installation is complete when the PMO verifies that the tool has been properly configured, functions properly, and has been made available to designated users. If this is a major system or application acquisition, installation could take an extended period of time, and that might require the preparation of a detailed tool installation plan to ensure success.

Implement Project Management Tools

Installing a project management tool on the desktop computers of a few users will not normally present a major challenge for the PMO. Conversely, a larger number of users or a major system implementation warrants advanced planning and ongoing management on the part of the PMO. In either case, the implementation activities recommended below will ensure the smooth introduction of a new project management tool.

Plan Tool Implementation

Small tool implementations for small user groups are easily planned: simply schedule and arrange the implementation with individual users. However, major tool implementation, particularly those affecting cross-business unit, interdepartment, or organization-wide operations, will likely require additional advanced planning. Implementation of a major project management tool usually implies a change in the way projects are managed and the way business is conducted. The PMO is inherently responsible for preparing project management environment users for such major modifications.

The PMO can consider the following planning elements for tool implementation.

- *Advanced announcements:* Give affected staff prior notice that a decision has been made to acquire and implement a new project management tool that will prompt adjustments in current operating processes; define and include these announcement activities in the implementation plan and schedule of events; include vendors and customers in this notification, as appropriate.
- *Senior management endorsement:* Obtain and convey senior management sanction at appropriate points in the implementation; collaborate with senior managers to plan when and how such approval will be made; determine what

types of endorsements will be needed (written policy changes, staff meeting announcements, etc.).

- *Implementation schedule*: Specify the implementation activities and prepare a schedule for their accomplishment. Beginning with tool installation, include time frames for implementation within different business units or at multiple locations; specify the system connectivity needed to provide access at various facilities, and outline the data transfer activities that are required to make the system operational; identify the implementation support that the PMO will provide.
- *User training*: Specify any training required in association with the introduction of a new project management tool; include a schedule for training delivery in the implementation plan.

The inclusion of a transition plan is another element of the project management tool implementation plan. However, the transition plan is considered separately below because of its importance in the successful introduction of a new major project management tool.

Plan Tool Transition

The PMO will want to focus on this element of tool implementation planning because it represents a critical step in making the new project tool operational. Essentially, the transition plan requires the PMO to determine how, when, and what elements of project management data will be transferred to the new tool. If the new tool is an automated methodology system, transition planning could require an extended period of time to identify how each project in the organization will be transitioned to the new system. Any other major tool that requires populating data from all projects presents a similar extended planning process. This effort is further compounded when the new tool is transitioned at multiple geographic locations, possibly on a global basis.

The underlying premise of the transition plan is to ensure that all key participants know how and when they can begin using the new tool and what role and responsibility they have in bringing it to its intended operating capability. The transition plan also will normally specify what project or business data are being transferred; how that transfer will be accomplished; and what data manipulations, if any, must be performed to make the new tool useful for real-time project management.

Conduct Tool User Training

The complexities of using the new tool will determine the need for user training. However, the PMO should normally consider providing training when implementing any new tool and especially when introducing a major new tool. Furthermore, when a customized major tool is introduced, the PMO absolutely should consider training.

The PMO can arrange and conduct project management tool training for one or more user levels, depending on the nature of the tool and the intended access of the users. In general, frequent users will receive more detailed training, whereas infrequent users, such as executives, will have familiarization training focused on conveying understanding of tool functionality and any relevant executive access features.

The PMO can identify user levels and arrange for appropriate training programs during tool implementation planning. It is also important to identify any prerequisite knowledge needed before beginning project management tool training. For example, individual understanding of project scheduling concepts is essential before introducing a project management scheduling tool. The relevant organization should never presume that simply introducing a tool will solve “performance” problems.

Conduct Tool Implementation

The tool implementation plan should address all pertinent implementation activities that the PMO will manage. The implementation plan should facilitate the accomplishment of the following three items.

- *Data transfer*: The transition-plan component of the implementation plan can be used to guide the transfer of data that will populate the new tool for operation within the project management environment.
- *Operational functionality*: User training begins the process of conveying the knowledge that new tool users need. The PMO will want to monitor initial use, individually if possible, to ensure that all users achieve a complete understanding of tool functionality. The PMO can determine the depth and extent of monitoring and indicate what activities it will perform in the implementation plan. When the desired level of user performance has been reached (as specified in the implementation plan), the PMO can declare that operational functionality has been achieved for the new project management tool.
- *User feedback*: The implementation plan should include provisions for preparing and receiving user feedback in conjunction with implementation of the new tool. This activity achieves two objectives. First, it allows users to know that any concerns about the performance of the new tool are noted and will be appropriately addressed. Second, it enables the PMO to collect individual opinions and group perspectives on the performance of the new tool, thus permitting immediate fixes of any major problems before beginning the evaluation of tool performance.

Evaluate Tool Performance

It is a truism that the PMO’s work is never done. The ongoing monitoring and management of project management tool performance is just one part of that work.

A follow-up evaluation of project tool performance should be based on the extent of the business importance of tool deployment. Major business unit and enterprise-wide systems will require frequent performance reviews until the tool becomes reasonably familiar for users and stable in the project management environment. After that, routine, recurring performance checks will be required to ensure that the tool is being used properly to fulfill its intended purpose and to ensure that its functionality is maintained and optimized for best performance within the project management environment.

The PMO should establish its tool evaluation approach to include three areas of attention: utilization, functionality, and overall effectiveness.

Identify and Resolve Utilization Problems

The PMO should conduct tool utilization reviews for the most critical project management tools—those that guide the project management process and those that provide for timely reporting of project performance. This type of review can be a formal survey of users or casual observation of utilization. Its intent is to ascertain whether the tool is being used for its intended purpose within the specified user group.

In particular, the PMO will want to identify why a certain tool, or feature or component of a tool, is not being utilized in a way that is consistent with expectations. Reasons for nonuse may include inadequate or no user training, tool-learning hesitation or misplaced priority of the individual user, lack of senior management endorsement or communication regarding desired tool use, limited perception of personal value or benefit by the user, limited perception of organizational value or benefit by the user, and other explanations that the PMO can discern.

Once low-utilization indicators or trends are identified, the PMO should work with project managers to rectify the situation and bring it in line with organizational expectations and mandates for tool use. The PMO may want to retain a log of the tool utilization problems encountered and the corrective actions taken as a reference for future use.

Identify and Resolve Functional Problems

The functional performance of project management tools can be examined in conjunction with a utilization review. The PMO can accomplish this by conducting random testing of tool features. Alternatively, the PMO can establish a problem log for use on each project and then review the tool problem log, perhaps on a weekly or monthly basis or at the end of each project. The functional problems to be encountered could range from simple system “lockup” to more profound user recognition that the tool does not possess a desired feature or perform a preferred function.

By analyzing the review findings and problem logs, the PMO can identify and isolate tool functional problem indicators and trends. As a natural follow-up,

the PMO should attempt to resolve each identified problem. Some issues can be resolved in collaboration with the internal IT group that oversees the application. If recurring problems exist, the PMO may need to contact the project management tool vendor for resolution.

Assess Overall Tool Effectiveness

The final element of the PMO's tool evaluation is an examination of overall tool effectiveness. In essence, this means determining what the tool has accomplished for the organization or the project management environment. What benefits have been achieved as a result of using this project management tool: increased project success, timelier project decisions, earlier identification and resolution of project problems, and so forth? The tool assessment should also examine the benefits to individual users. Have individual and project team efficiency or effectiveness been increased?

The PMO can use this information to substantiate continued tool use or expanded tool deployment, or as a rationale for pursuing an advanced version of the tool or an alternative replacement tool.

Postscript for the Smaller PMO

The smaller PMO will likely not have responsibility for major project management tool acquisitions. However, it could lead the relevant organization in acquiring simple tool solutions for the project management environment. It could also be called upon to be a participant in major tool and system acquisition efforts—at least for those tool or system components implemented for project management support.

The following activities are prescribed to help define tool management responsibilities for the smaller PMO.

- The smaller PMO should be reasonably aware of which tools are currently available and being used in the project management environment. It can create a simple listing and description of those tools for further examination as time permits. This list will help to establish the PMO as a knowledgeable source of tool information in the project management environment.
- The smaller PMO can use a listing of current tools, in combination with some additional tool research, to contrast what tools are being used with what tools are available in the marketplace. As well, the smaller PMO can gain knowledge about tools through collaboration with project managers and project team members to gain their insights about preferences for project management tools. Further research can be done on “preferred” tools.
- The smaller PMO supporting a large project management environment should consider convening ad hoc teams to identify and evaluate major

project management tools and systems for possible implementation in the project management environment. Such teams also can be chartered on an as-needed basis to evaluate the effectiveness of current project management tools.

- The smaller PMO can guide and influence project management tool acquisition and implementation in the project management environment or across the enterprise by being the knowledgeable source on project management tools.
- The smaller PMO can establish the capability and authority to introduce small or off-the-shelf project management tools as may be routinely needed in the project management environment. In this instance, the PMO can call upon vendors to contribute their expertise in planning and conducting tool implementation, which reduces or eliminates the need for the PMO to use resources for that task.