Chapter 4

The Business Shakes Hands with the Microsoft Project 2010 Platform

In This Chapter

This chapter provides you with an understanding of how the Project Server 2010 platform is more like an enterprise resource planning (ERP) system and should be treated as such.

A large number of companies have simply missed the value of enterprise project management (EPM), have not done a complete implementation, or have participated in a failed implementation. Business and information technology (IT) managers need to learn the value of EPM and understand how the communication and workflow capabilities native to Project Server 2010 can address the project, program, and portfolio management requirements of small and large businesses alike.

What You Will Learn

* Project Server 2010 is built on SharePoint Server 2010 technology. It integrates with Microsoft Office 2010 and Exchange Server 2010 to provide a powerful and familiar work management platform.
* SharePoint Server 2010 has the fastest adoption rate of business users (with over 150 million users in 2011 alone)[AU: give date for this statistic]). It now serves as the business platform for enterprise project management.
* The project portfolio management (PPM) lifecycle requires communication and workflow capabilities that are inherent in Project Server 2010.
* Users are no longer limited to a desktop tool. Working in the Project Server 2010 environment enables end users also to access information via the Web.
* Line of business integration has a well-established history with previous versions of Project Server.

Logical Architecture Is More Natural for Business Users

Small and large organizations are seeking capabilities that empower both business users and IT professionals to create information management solutions quickly. In order to facilitate the increasing demands on available and skilled resources, it is essential to be able to manage, monitor, and assess the status of all work and projects across the enterprise.

With the general adoption of organizational project management (PM) and associated governance practices over the past decade, growth in portfolio, program, and project management processes, methods, and application packages has erupted. In the 1990s, the focus was generally on the management of individual projects. Today’s software includes portfolios of projects and integrated cross organizational project and resource tracking and reporting.[AU: describe difference between 1990s and today?]

EPM is today’s solution for handling multiple projects efficiently and is fast becoming a necessary set of tools and methods for any company involved in managing work or projects. EPM helps organizations gain visibility and control across all types of projects. Its strategy enhances the decision-making process, improves alignment with business and priorities, maximizes resource utilization, and enhances project execution to optimize the return on investment).

As Project Server is gaining visibility as an enterprise solution for managing the work and resources of an organization, it needs to integrate with existing systems, starting typically with ERP systems (Fiessinger, 2010).

Figure 4.1 illustrates a framework that describes the key interrelationships of EPM, including the organization’s enterprise architecture (EA), business strategy, project management office (PMO), the portfolio management system, and of course the internal and external stakeholders.

Figure 4.1 Enterprise Project Management Framework [04-01-enterpriseProjectManagementFramework.tif]

Source: Advisicon

An EPM framework provides a basis for successfully managing and maximizing the value an organization achieves from its project investments. The key elements include:

* **Business strategy.** Provides the business drivers for both the development of the EA and the IT strategic plan.
* **Enterprise architecture.** The enterprise’s key business, information, application, and technology strategies, and their impact on business functions and processes
* **Portfolio management.** The strategic management of an organization’s investments and projects to align project investments with associated business initiatives
* **PMO.** Responsible for executing the changes determined by the PM function
* **Internal and external customers.** Department, individual, or process within an organization that supplies another; external customers are those persons who come from the outside for the enterprise to fulfill their needs

This chapter focuses on the portfolio management aspects of Microsoft EPM and describes how the solution provides the centralized business application platform to help assess, prioritize, and manage the work and resources of the organization.

Business Platform Designed for the Business User

The logical architecture of Microsoft’s EPM 2010 solution was designed around business users’ needs to collaborate, prioritize, and manage the work and resources of the enterprise. The focus is more holistic therefore, so is the deployment platform.

Traditional approaches used over the last couple of decades (selecting best-of-breed business applications and attempting to integrate them into a single logical structure) have largely failed and are now yielding to organizations seeking platform choices (e.g., SAP, Oracle Fusion, Microsoft SharePoint Solutions). We are currently in a buy versus build era.

With over 100 million users (Henschen, 2010) at the time this book was written, SharePoint is not only considered to be the most successful application platform that Microsoft has ever built, it is also providing the best opportunity for business users to begin to standardize on an EA that will have a significant number of solutions built on top of SharePoint 2010.

Microsoft EPM Platform

Let’s examine one the first significant business solutions to be built on top of SharePoint 2010, Microsoft EPM 2010.

The Microsoft EPM 2010 solution is a flexible, end-to-end PPM platform used by organizations across many industries to automate work and PM processes. The Microsoft EPM 2010 solution is comprised of Microsoft Project Server 2010, Microsoft Project Professional 2010, Microsoft Office 2010, and of course Microsoft SharePoint 2010.

The Microsoft EPM 2010 solution provides these key PPM capabilities in a single integrated system:

* **Demand management.** Captures all work and resource requests centrally, then manages according to a governance workflow
* **Portfolio selection and analytics.** Prioritizes, optimizes, and selects project portfolios that align with the organization’s business strategy.
* **Resource capacity planning.** Proactively manages resources throughout the project lifecycle
* **Schedule management.** Plans and communicates both simple and complex project schedules.
* **Program management.** Initiates, plans, and delivers strategic programs
* **Financial management.** Measures and controls project and portfolio financial performance
* **Time and task management.** Captures time and task status updates from team members
* **Team collaboration.** Connects teams to share information and drives project collaboration
* **Issues and risk management.** Identifies, reduces, and communicates issues and risks that might impact project success
* **Business intelligence (BI) and reporting.** Measures project performance and gains visibility and control across all portfolios

Figure 4.2 illustrates the components of the Microsoft EPM solution.

Figure 4.2 Microsoft EPM Solution Components [04-02-microsoftEPMSolutionComponents.tif]

Source: Advisicon

Workflows

A governance workflow is about creating the lifecycle for any new proposal or initiative. It includes defining the various stages a project goes through during its lifecycle.

Project Server 2010 workflows are designed to model the organizational governance processes and provide a structured way for projects to proceed through the various phases and stages of the project lifecycle. Example stages include proposal creation, proposal initial approval, final budget approval, and so on.

The Project Server 2010 workflow platform is based on the Windows SharePoint Services 2010 workflow platform, which in turn is based on the Windows workflow foundation capabilities of the Windows Server.

Enterprise Project Types

The basic workhorse behind the Project Server 2010 design was the introduction of the new enterprise project type (EPT) and the built-in workflow capability. Every project is associated with an EPT, which governs it through its project lifecycle.

EPTs are project templates that represent various types of projects and nonproject work within the portfolio. Normally, project types are aligned with individual departments—for example, engineering projects, software development projects, or human resources projects. Using project types helps categorize projects that have the same approval steps or share a similar project lifecycle. Think of the EPT as a project definition or template.

As a project goes through its lifecycle or workflow (i.e., phases and stages), the workflow will determine which project detail pages (PDPs) will be presented depending on a predefined process for a given project type.

Native to Project Server 2010, EPTs provide support for a combination of phases, stages, a single workflow, and any number of PDPs.

Business User Benefits

From a business perspective, the use of EPTs helps guide projects through their respective lifecycles using workflows that can define stage gates, approval processes, and distribute project progress information to stakeholders.

The application of EPTs and PDPs can help provide a standardized approach to proposal definitions, including work, cost, and timeline details.

Other business benefits of this approach include:

* A standardized approach to work and project demand capture
* A uniform process-driven approach to assessing work and project selection to the business priorities
* Common criteria for reporting project progress (cost, schedule, and project deliverables)
* Common operating platform (single source of project information including total demand, work and resource forecast, and project actuals)

You Don’t Need to Be a Technologist to Be an Effective Practitioner

Defining projects in Microsoft’s PPM 2010 environment doesn’t require that you know the deep scheduling algorithm for the Project Professional tool. In fact, the building and migrating of work, planning, and key metrics around projects is a matter of filling in forms. Depending on your particular role, you may be looking only at high-level information rather than detailed planning.

In Project Server 2010, the ability to work from a Web-based environment to link, update, progress, and manage a schedule has removed much of the fear and angst of working in Project’s desktop version. Don’t get us wrong; Project Professional is still called the rich client for a reason. It has some extremely powerful capabilities, and with a little training in the dos and don’ts in building, working, and managing with Project, you can be extremely effective and spend less time in the tool and more time in and around the projects you are working on. However, the key idea with working in Project Server 2010 is that you are not tied to being in a desktop tool. Instead, the Web-based environment enables end users to access the information from the Web.

Proposing a Project

Let’s now take a look at a lifecycle for a typical project. The aim here is to illustrate by example that you don’t need to be a technologist to effectively use the Microsoft EPM 2010 solution.

As shown in Figure 4.3, we are provided by Project Server, [AU: you mean the program provides this? Clarify] with a drop-down list of the EPTs that are available to us (e.g., a basic project plan or a marketing campaign). EPTs are highly configurable, as we detail in chapter 9.

Figure 4.3 Selecting an EPTs [04-03-selectingEnterpriseProjectType.tif]

Source: Advisicon

Based on our assigned department, role, and security level (all of which are fully configurable for each user within the EPM system), we will be presented with those EPTs that we are authorized to see. This security design provides a powerful combination of flexibility and access to information while maintaining control over system functions and data, essentially making information available to users on a need-to-know basis.

For this example, we will choose the Sample Proposal project type.

Defining the Project Proposal

In the first stage, we must enter summary information about the project proposal needs. Proposals are created in the Project Web Application (PWA). Anyone who has access to PWA can view proposals.

To create a project proposal, however, a user must be granted permission. EPM can be set up to allow certain authorized users to propose new projects or ideas while allowing all users to view what others are proposing.

Figure 4.4 illustrates a project proposal, which is essentially a configurable form defined to the Project Server system. This form provides a straightforward, minimal approach to gathering basic information about the project (e.g., the project’s description, start date, etc.).

Figure 4.4 Project Proposal Form [04-04-projectProposalForm.tif]

Source: Advisicon

This proposal form can be configured to enter basic project data:

* Project name
* Project description
* Proposed start date and end date
* Proposed cost
* Proposer name
* Proposer department

When the proposal is saved, the Project Workflow defined for this project type is started. The workflow status is then presented to the user, indicating in this example that we have now entered the Initiate stage. From here, we can decide to accept the proposal, and if so, move it to the Define stage. (See Figure 4.5.)

Figure 4.5 Workflow Status [04-05-workflowStatus.tif]

Source: Advisicon

Workflows are fully configurable and provide the ability to configure different workflows for different project types, departments, and so on.

Reviewing and Approving the Proposal

As we progress through the governance workflow, if the proposal is approved, we will continue to collect project metadata. Eventually this proposal will become a full-scale project.

Proposals should contain sufficient information to allow a business decision maker to approve or reject them. Chapter 9 on portfolio management[AU: correct chapter?] provides additional details on project selection and optimization. [AU: insert text ref. to fig. 4.6]

Figure 4.6 Approvals [04-06-workflowApprovals.tif]

Source: Advisicon

Figure 4.7 illustrates the review and approval functions provided to the end user by the EPM 2010 solution. Once again, this is a highly configurable component of Project Server 2010 and even supports auto-approval, based on definable workflow criteria.

Figure 4.7 Workflow Stage Approval [04-07-workflowStageApproval.tif]

Source: Advisicon

Developing the Business Case

As we can see in Figure 4.8, the workflow has progressed to the “define” stage, where we will detail the business case development (potentially including the project schedule, risk evaluation, and cost and benefits assessments).

Figure 4.8 Workflow Define Stage [04-08-workflowDefineStage.tif]

Source: Advisicon

Estimating Required Resources

We now need to develop a resource plan that will be used during portfolio analysis to determine the requirements and impact that this project will have on the overall portfolio.

Figure 4.9 illustrates the process of associating generic resources (placeholders) to the proposal. This process will provide an overall level of effort (capacity) that will be required to complete the project being proposed.

Figure 4.9 Building the Project Team [04-09-buildingProjectTeam.tif]

Source: Advisicon

At this stage, we need not concern ourselves with the named individuals, so we assign generic resource names and estimate their full- time equivalent (FTE) requirements for the term of the project. Figure 4.10 illustrates the definition of the resource plan that gets associated with the individual project.

Figure 4.10 Estimating the Resource Plan [04-10-estimatingResourcePlan.tif]

Source: Advisicon

This capacity planning capability is part of Project Server 2010 and provides end users the ability to display resource data by time scale (i.e., days, weeks, months, quarters, or years) and calculate the resources based on the type of work unit they wish work in (i.e., hours, days, FTEs).

The source of the resource planning data can also be selected from either the resource plan or the project plan. Utilization can be calculated from the project plan up to a specified point in the project plan (i.e., rolling wave) (Shaker, 2010).

Planning the Project

If the business proposal has merit, an organization will initiate a project in order to implement an aspect of corporate strategy, to realize a business case, and to create a set of deliverables. Projects should exist for very clear reasons (Hillson, 2009).

If the proposal is approved, the project moves into the detailed planning stage of the project lifecycle. Tasks that need to be performed to complete the deliverables of the project are detailed as illustrated in Figure 4.11.

Figure 4.11 Planning the Schedule [04-11-planningSchedule.tif]

Source: Advisicon

Chapter 5[AU: verify chapter number] provides additional details on how to perform good schedule development and some best practices for defining dynamic schedules that will derive forecast completion dates and help determine when the deliverables (and the project) will be complete.

Planning and scheduling of project tasks, along with placing their estimates and dependencies into a sequence, is a critical step to ensure successful project outcomes. According to Jim Snyder (2010), one of the founders of the Project Management Institute, “If we spent more time Planning and Scheduling, we wouldn’t have to do so much Project Management.”

Doing an initial schedule based on the work breakdown structure and resource assignments typically shows the project team the time and resource requirements and provides a starting point for an iterative schedule management process.

Managing the Project(s)

Once we have a fully authorized proposal, planned our resources, and finalized our schedule, our focus can turn to managing the project (i.e., managing and tracking execution of the schedule, monitoring and reporting progress, and delivering project products).

The real key here is to manage all the projects of the enterprise in a manner that provides visibility across all factors that can impact the successful delivery of each project . This needs to be done in a manner that is consistent, accurate, and timely in regard to:

* Scope
* Schedule
* Resources
* Costs
* Issues and risks
* Deliverables
* Quality
* Benefits
* Overall health

This is a real challenge for most organizations because there is no central location where all these data can reside. Typically this information can be found in several nonintegrated sources (e.g., project schedules, PowerPoint presentations, and spreadsheets).

According to extensive research by the European Spreadsheet Risk Interest Group (2012), page 1 on the risks of using spreadsheets within business, the majority of spreadsheets (>90%) contain errors. The research goes on to say that “because spreadsheets are rarely tested, these errors remain. Recent research has shown that about 50% of spreadsheet models used operationally in large businesses [have] material defects.” [AU: page for quote?]

The Microsoft EPM solution centralizes all of this project operational/performance data into a centralized SQL database where data integrity can be properly managed. In addition, because the data are located in a common “shared” repository, they can be viewed (in real time) and grouped, filtered, and provided on a secure need-to-know basis using views.

Figure 4.12 illustrates how projects can be managed centrally, providing the right level of detail that is appropriate and sufficient to the applicable end user role (i.e., not inundating users with all of the gory details of the project).

Figure 4.12 Managing the Projects [04-12-managingProjects.tif]

Source: Advisicon

Information can also be extracted at any time, from any view, to Excel, Visio, and other data tools, to be manipulated, formatted, e-mailed, or even printed, should a report be required for a meeting (where, for some strange reason, no computers or projection screens are allowed).

Figure 4.13 illustrates an example of a project that has reached the Manage stage of the project lifecycle. Here, for example, is where analysis of the project is performed, based on reports such as milestones, schedule and cost variance, and forecast of key target dates and deliverables.

Figure 4.13 Project Manage Stage [04-13-projectManageStage.tif]

Source: Advisicon

Business Intelligence/Reporting

By now, you are probably realizing that it makes sense to track project performance in a manner similar to how we track financial performance. What are the actuals relative to the plan? Are we on budget? On schedule? While we are tracking, we also need to be producing quality deliverables that meet the needs of the stakeholders.

One of the key challenges that organizations of all sizes struggle with is how to make sense of all the data. Spreadsheets and PowerPoint presentations are commonplace; however, so are the eleventh-hour fire drills that are associated with their preparation.

BI is critical for decision makers in order for them to make good business directions. Project portfolio intelligence must also become a critical approach to planning and managing the enterprise investments in the organization’s critical resources; and BI and reporting must become pervasive throughout all phases of the project portfolio lifecycle. This list breaks out the key components that BI can be used to clarify and provide good analysis.[AU: introduce next list.]

* **Planning.** Ensuring that we are collecting and analyzing total demand, aligning to business priorities, detailing the work breakdown, estimating the resources
* **Managing.** Monitoring and controlling project execution
* **BI and reporting.** To support better decision making

According to Wikipedia, the generally accepted definition of business intelligence is “a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information used to enable more effective strategic, tactical, and operational insights and decision making.”.

With the large amount of data located in a variety of tools and formats, one of the challenges that organizations currently face is how to collect, categorize, understand, and make decisions about project data.

The Microsoft EPM 2010 solution offers integrated BI that provides visibility into the project portfolio facilitating decision support for proactive project and work management. The EPM 2010 solution includes a variety of online views and powerful BI and reporting services to help organizations gain insight, visibility, and control across their project portfolios.

EPM 2010 is built on top of SharePoint Server 2010, which provides end users with the capability to take advantage of all the tools included in the Microsoft BI platform, including Excel Services, PerformancePoint Services, Visio Services, PowerPivot for Excel, and SQL Reporting Services.

Figure 4.14 illustrates an integrated project dashboard comprised of textual and graphical project data:

* **EPM Variance Scorecard.** Key performance indicators (KPIs) that change colors based on formulas that are measuring cost, duration, start, finish, and work variances
* **KPI Details.** Text attributes to support the KPI chart
* **Analytic Chart.** Example bar chart illustrating hours of work over time
* **Analytic Grid.** Text summary of cost and work for each project role over time

Figure 4.14 Business Intelligence Project Dashboard [04-14-businessIntelligenceProjectDashboard.tif]

Source: Advisicon

This example dashboard provides summary PM performance data to end users and also acts as a menu to drill down into the details. We discuss this in more detail next.

Dashboards are essentially a mashup (Web application hybrid) created from Web Parts that are configured to meet the needs of an end user role. Dashboards present data, initially in a high-level roll-up format, then allow drilldown into details that provide insight into specifics of a project and its related components.

PMOs can also create dashboards to ensure that end users receive relevant, useful information that meet the needs of the roles they perform. More technical users can employ more sophisticated tools, such as SQL Server Reporting Services, to create more involved reports.

Project Server 2010 also includes a library of preconfigured template reports that end users can customize, using familiar tools like Excel. These reports can then be published using Excel Services and incorporated into dashboard views.

Figure 4.15 illustrates a consolidated project summary view where KPIs, cost summary information, and other information can be displayed using different types of presentation formats (e.g., tabular data, traffic light indicators, dials, etc.).

Figure 4.15 Business Intelligence Project Summary [04-15-businessIntelligenceProjectSummary.tif]

Source: Advisicon

The Microsoft EPM 2010 solution further provides end users with the ability to drill down into data using a decomposition tree. Decomposition trees are a new feature in Microsoft SharePoint 2010 that allows end users to drill down on reports generated from analysis services where the data can then be displayed in a consolidated dashboard format.

The PerformancePoint analytics tool produces a decomposition tree that is used to perform root-cause analysis by viewing how individual members in a group contribute to the whole (Microsoft, 2012a). Decomposition trees can be used to examine how an individual value in a dashboard can be broken down into its contributing elements.

Figure 4.16 shows a PerformancePoint query in a pop-up window that allows a nontechnical end user to navigate project data, by pointing, clicking, and using drop-down menus to filter and display specific data (e.g., departmental costs broken down by projects and then by how each role contributes to those costs).

Figure 4.16 Business Intelligence Decomposition Tree [04-16-businessIntelligenceDecompositionTree.tif]

Source: Advisicon

PerformancePoint Services included with the Microsoft EPM 2010 solution provides several new and improved features to help monitor and analyze an organization’s project and work performance. Dashboards can also be developed to include more sophisticated KPIs in Web-based scorecards.

A True Enterprise Platform

The Microsoft EPM 2010 Solution is a fully integrated, end-to-end PPM solution used to automate PPM processes (TechNet, 2011Project Server Site[AU: which cite?]). The EPM solution includes these products to provide a comprehensive desktop and Web-based PPM solution:

* **Microsoft Project Professional 2010.** Provides connectivity between the desktop and Project Server 2010, to ensure that organizations can achieve the added business benefits of unified PPM.
* **Microsoft Project Server 2010.** Brings together the business collaboration platform services of SharePoint Server 2010 with structured execution capabilities to provide flexible work management solutions.
* **Microsoft SharePoint 2010.** Project Server 2010 is built on SharePoint Server 2010 to provide true multitier architecture by using the new service application model.

Project Server 2010 on SharePoint 2010 is the only truly integrated portfolio, program, and project management solution on the market today. Organizational attempts to integrate of best-of-breed products with enterprise work and resource planning and reporting have largely failed up to now.

Collaboration

With the more traditional management of individual projects, focus has always been on project schedule, budget, work, scope, and the deliverables of these projects. Team collaboration, however, is the backbone that supports and drives success with planning and execution effectiveness.

Businesses need to approach collaboration strategically and seek to align people, processes, and technology with the organization’s project investment goals. In the case of collaboration, that alignment must also take into account the level of trust required to improve the chances of success for each type of collaboration (“Role of Trust in Business Collaboration Systems,”2008).

Microsoft Project Server 2010 is built on SharePoint Server 2010 and combines powerful business collaboration capabilities with structured execution functionality to provide a flexible and secure work and PM solution. Core capabilities include:

* BI platform to easily create reports and powerful dashboards
* Custom project site templates for each type of project to provide a one-stop collaboration workspace for the team
* Review and approval tracking throughout the workflow
* Enterprise search to find people and effectively mine project data
* Enhanced teams communication with wikis, blogs, discussion forums, and My Sites

Team collaboration has evolved over the past decade from informal techniques into a recognized discipline that helps organizations more effectively find and share information. Tools that support collaboration have evolved to sophisticated solutions, such as Microsoft SharePoint Server 2010.

Team Sites

SharePoint Server 2010 team sites provide a place where the team can communicate with each other, share documents, and work collaboratively on a project. Separate project sites can be created for each project, or one site can be shared by several project teams (e.g., for a specific program).

Project teams can add information to the site, such as events, contact names, and phone numbers of people that a project team communicates with. The team site is really the one-stop-shop for all project information; it includes:

* **Announcements**. Where end users can post information for the team.
* **Calendar.** Create and attach a project calendar to a team's Web site.
* **Contacts list.** Stores information (including names, telephone numbers, e-mail addresses, and street addresses) for people who are part of the team.
* **Issues and risks.** Can be associated with projects, tasks, and documents to permit team members to keep track of their status.
* **Links list.** Displays hyperlinks to Web pages of interest to team members. By default, a view of the Links list appears on the home page.
* **Project document library.** Stores documents that are related to a specific project. Access to documents in the library is based on permissions that can be set for project managers, team members, and other stakeholders.
* **Tasks list.** Provides a to-do list for team members

This list describes how the core team context is established using SharePoint Team Sites, social networking capabilities, and e-mail to provide alerts and notifications.[AU: Is this supposed to be part of the list? I don’t understand the use of the imperative tense here; why are we telling the reader to “describe” something?]

Document Management

SharePoint Server 2010 includes document management capabilities that the project manager and team members can use to control the lifecycle of documents for all projects in the organization (i.e., how they are created, reviewed, and published and ultimately how they are disposed of or retained).

An effective document management solution specifies:

* What types of documents can be created in an organization.
* Which templates are available for each type of document.
* What metadata can be associated with each type of document.
* Where a document should be stored at each stage of its lifecycle.
* How document access is controlled at each stage of its lifecycle.
* How documents move within the enterprise, as team members contribute to document creation, review, approval, publication, and retention/disposition.
* What document policies are applied to ensure that document-related actions are audited, documents are retained or disposed of appropriately, and how important content is protected.
* How documents have to be converted from one format to another as they move through the various stages of their lifecycle.
* How documents are handled as corporate records (plan of record) and how they need to be retained/disposed per legal requirements and corporate guidelines.

SharePoint Server 2010 includes capabilities that support all of these aspects of document management. Applications within the Microsoft Office system also include features that support each stage in a document's lifecycle (e.g. review, approve, publish, etc.).

Organizations should take time to thoroughly understand the requirements of the enterprise document management solution and carefully plan the system based on the capabilities of Microsoft SharePoint Server 2010 (TechNet, 2010a).

Governing Project Components Defining the Work Management

In this section we present the key elements of enterprise governance and provide an overview of the PPM lifecycle. (We will expand on this further in Chapter 5 and in Chapter 8[AU: correct chapter?].) We describe the importance of both to the business.

Enterprise Governance

Portfolio governance and lifecycle management enable organizations to define processes that synchronize the efforts of distributed teams to consistently create the best possible products, capture greater market share, and increase customer satisfaction.

Figure 4.17 illustrates an example governance workflow that includes four key phases (create, select, plan, and manage). A phase represents a collection of stages, grouped to identify a common set of activities in the project lifecycle. A stage represents one step within a project lifecycle (e.g., propose idea, initial review . . . deliver project).

Figure 4.17 Example Governance Workflow [04-17-projectManagementLifecycle.vsd]

Source: O’Cull, 2009

Phases and stages are managed in Project Server 2010 through the use of enterprise project templates (ETPs; described in the next section) that help guide projects through each stage through the use of workflows.

Project Portfolio Management Lifecycle

According to Wikipedia, “Project portfolio management (PPM) is a term used by project managers and project management (PM) organizations, (or PMOs), to describe methods for analyzing and collectively managing a group of current or proposed projects based on numerous key characteristics.”

The Microsoft EPM 2010 solution enables organizations to manage the continuous flow of projects from concept (demand) to completion (closure).

A number of the key elements of the PPM lifecycle include:

* **Demand management.** Provides a consolidated view of the total work and resource demand picture across the entire organization.
* **Capacity planning.** Proposes an initial assessment of resources (i.e., people, money, and time) when determining organizational capability of resources (human, financial, material).
* **Project prioritization.** Determines how each project will be prioritized to ultimately affect project selection.
* **Project selection.** Defines which projects will be selected as successful candidates for detailed planning and execution. Figure 4.19[AU: figures must be cited in order presented in text. Change this to fig. 4.18 and revise later text and figure order?] illustrates an organization’s relationship from the business mission/goals/strategy(s) to project selection. Business drivers are specific to the EPM 2010 system and help align projects to the priorities of the business.
* **Detailed project planning.** The scope of work is broken down into work packages, the network of activities is developed, and tasks are assigned to named resources so that a work schedule can be prepared.
* **Project execution.** The products (deliverables) of the project are performed.
* **Monitoring and reporting.** A key aspect in the management of a project, where the work, schedule, and financial performance are measured and reported to all stakeholders of the project. The EPM solution has significant capabilities in this regard, as we discussed throughout this text.
* **Project closure.** Where the contractual and administrative completion processes of the project are performed. A lessons learned step may also be included at this point (Ivanenko 2009).

Figure 4.18 provides an overview of a project portfolio lifecycle.

Figure 4.18 Overview of a Project Portfolio Lifecycle [04-18-overviewProjectPortfolioLifecycle.tif]

Source: Advisicon

PPM Is a Business Imperative

PPM is the art and science of balancing an organization’s product and PM skills and resources to achieve optimum strategic, financial, and operational impact across all product lines in all lifecycle phases.

Once the business executive management has defined the mission, goals, and strategies, we can derive a set of business drivers that help us align specific projects that will address the business priorities of the organization. Figure 4.19 helps us visualize this relationship.

Figure 4.19 Business Driver Relationship to Projects [04-19-missionGoalStrategyProject.eps]

Source: Advisicon

Business drivers are the people, information, and tasks that support the fulfillment of a business objective. Drivers can include the people, knowledge, and conditions (e.g., market forces) that initiate and support activities for which the business was designed.

Understanding and properly defining business drivers is a key step in ensuring the success of an enterprise PPM system. Business drivers are an effective way to ensure alignment between strategy and execution as they:

* Provide the linkage between the business strategy and the portfolio of projects.
* Ensure a consistent way for key stakeholders to agree on cross-organization business objectives.
* Establish a basis for mapping projects back to business priorities.

Even if specific projects support business objectives, they are not necessarily guaranteed to be selected for execution. All projects in the portfolio compete for limited organizational resources (Levine, 2005).

Microsoft Project 2010 Platform Is Highly Extensible

The EPM 2010 solution provides the fundamental components to automate the governance business processes and provides a scalable, connected, and extensible platform to meet the needs of the business and align with the organization’s EA standards. This includes configurable business drivers (that help align and prioritize the projects/initiatives) along with custom workflows (to enforce business rules) that can be defined using Windows Workflow Foundation, using Project Server events and Web services available through the Project Server Interface (PSI).

In Chapter 7 and Chapter 8[AU: verify chapter no.], we review in more detail the workflows and programmability of Project Server, SharePoint, and the development tools (SharePoint Designer and Visual Studio). In the next section, we discuss how the PPM lifecycle can be realized by the highly extensible Project Server 2010 platform.

Extensive Work Flows, Forms, or Approvals? No Problem!

In PPM, a project lifecycle is a process that spans key governance phases. Example demand management phases are create, select, plan, and manage.

The Planning and Management phases are accomplished by the more familiar PM processes and tools, using Project Professional and PWA.

Workflow models the governance processes and provides a structured way for projects to proceed through the various phases. Workflows, along with other proposal data in project detail pages (PDPs), are captured and integrated within Project Server 2010.

Relationship of Project Server 2010 Elements

To better understand how EPM manages a project lifecycle, it is important to understandthe relationships of the key Project Server 2010 elements, along with the role of each element. These relationships are illustrated in Figure 4.20.

Figure 4.20 Relationships of Project Server 2010 Elements[04-20-relationshipProjectServer2010Elements.tif]

Source: Advisicon

The elements are defined next.

* EPTs encapsulate phases, stages, a single workflow, and PDPs.
* Phases represent a collection of stages grouped to identify a common set of activities in the project lifecycle (e.g., create, select, plan, and manage).
* Stages represent one step within a project lifecycle. A stage is composed of one or more PDPs linked by a common theme. Stages at a user level appear as steps within a project. At each step, data must be entered, modified, reviewed, or processed.
* PDPs are used to display or collect information from the end user.
* Web Parts are located on PWA pages. They communicate with the PPSI and also use standard SharePoint Server 2010 Web Parts.
* Custom fields extend the attributes of tasks, resources, or projects in Microsoft Project 2010.

The EPM 2010 architecture provides flexible design and configuration for all aspects of the end user interface experience. Coupled with the powerful and integrated workflow capability and integrated reporting capabilities of SharePoint Server 2010, Microsoft EPM 2010 is the most extensible platform to meet the needs of the business and align with the organization’s EA standards.

Workflow Integration

Workflows are another core feature of the Microsoft EPM 2010 solution. A project lifecycle can include long-running processes that span many phases. Governance phases include project proposals, analysis of business impact, selection, creation, planning, managing, and tracking of work/projects.

Workflow integration of portfolio and PM in Project Server 2010 provides a rich and extensible platform for building workflows, based on the SharePoint Server 2010 workflow platform.

From a business perspective, this capability provides total flexibility to configure the enterprise system, from work/project demand capture, to how requests are assessed and approved, through to the sequence of planning steps that need to be completed before the start of a project, and ending up with work will be executed, monitored, and controlled as it moves through the execution phase of the lifecycle.

Extensible Development Platform

With the 2010 release, Microsoft Project Server is also increasingly becoming a compelling development platform. Microsoft Project Server 2010 is designed to support high levels of programmer productivity by building on Microsoft SharePoint Server 2010 and the Microsoft .NET Framework.

There is also a Project Development site that provides resources specifically to support the Project Server 2010 developer community. This site includes a Software Develop Kit (SDK) that contains documentation, code samples, how-to articles, and programming references to help customize and integrate the Project 2010 clients and Microsoft Project Server 2010 with a wide variety of other desktop and business applications for enterprise PM (MSDN, 2011b).

Developers can use the SDK to extend the out-of-the-box PWA user interface by acquiring or creating new Web Parts, developed with Microsoft ASP.NET.

Open Source Platform

To assist with the rapid ramp-up of customers being able [AU: of what?] to achieve custom results quickly when customizing Project Server 2010, a number of solution starters and code samples are available to download for free from Microsoft. These solution starters include deployment packages, source code, documentation, and webcasts (MSDN, 2011b).

There is also an open source site provided by Microsoft. CodePlex is Microsoft's open source project hosting Web site that can be used by developers to create new projects to share with the world. Through CodePlex, you can join others who have started their own projects, download open source software, and even provide feedback (CodePlex, 2012).

OK, It Manages the Work, But What About the Financials?

The International Federation of Accountants (2004) commissioned a task force on rebuilding confidence in financial reporting to look at ways of restoring the credibility of financial reporting. The report was published in 2004 and set out 10 recommendations, one of which was: “Corporate management must place greater emphasis on the effectiveness of financial management and controls.”

Chapter 3[AU: verify chapter no. ] provides additional information on the management of financial controls, approaches and the role and responsibilities of the chief financial officer. This section discusses cost management from a project perspective and the roll-up capabilities of the Microsoft Project 2010 desktop and the EPM 2010 solutions.

Project Cost Types

Microsoft Project 2010 calculates the costs for resources based on a number of factors and resource types. A wide variety of resource costs need to be tracked throughout the lifecycle of a project, including:

* **Regular and overtime rates**, which are calculated based on the pay rates that are specified for a resource and the amount of work that is performed by that resource. The standard and overtime rates are calculated separately, based on their specific pay rate, and then rolled up to reflect the total labor costs for a given task (Microsoft, 2012a).
* **Per-use costs,** which can be applied to a work request to track a professional fee for example. Per-use costs can also be allocated to material resource when costs must be tracked each time some item is used. You can enter more than one per-use cost for each resource.
* **Fixed costs,** which are assigned to tasks and are useful for planning and capturing task costs that arise in addition to those arising from the assigned resources. Fixed costs can be applied to a task only, not to resources. You can also enter fixed costs for the entire project, to track overall project costs for example.
* **Cost resources that are assigned to tasks,** which might include airfare and lodging. This is typically a one-time cost per task, but the cost resource assignment also can be contoured across the duration of the task (i.e., start of task, prorated over the duration of the task, or at the finish of the task).

Rate Tables

You can model more complex billing schemes using the rate table features provided in Project. Figure 4.21 shows how a resource standard rate can be changed starting on a specified date.

Figure 4.21 Project Cost Rate Table [04-21-projectCostRateTable.tif]

Source: Advisicon

Be careful when changing the standard rate for a resource, as this can affect the cost of tasks that are already 100 percent complete.

Budget Resource

Microsoft Project 2010 introduced a budget resource capability that provides the ability to track budget at the project level. Budget resources cannot be assigned to individual tasks in a project.

Figure 4.22 illustrates setting up a budget resource to track project costs. Other budget resources can be defined to track work and material budgets.

Figure 4.22 Project Budget Resource [04-22-projectBudgetResource.tif]

Source: Advisicon

Figure 4.23 provides a summary view of the project including the budget and planned costs and work. Notice that budget resources can be assigned only to the project summary level.

Figure 4.23 Project Budget Actual Comparison [04-23-projectBudgetActualComparison.tif]

Source: Advisicon

EPM 2010

Although cost tracking and management for individual projects can be managed effectively with Project 2010 desktop, the enterprise view requires the robust capabilities of the Microsoft EPM solution offered by Project Server 2010.

The Microsoft EPM 2010 solution provides a robust platform that can aid an organization’s management of resources (people, materials, and expenses). EPM can greatly enhance an organization’s ability to define, align, plan, manage and monitor finances at a project, program, or portfolio level (Arbutus, 2011).

EPM 2010 provides a variety of online views (out of the box) that easily facilitate enterprise financial reporting. Cost fields from individual projects can be published in Project Server (e.g., cost, baseline cost, actual cost, cost variance, remaining cost, etc.).

Figure 4.24 outlines an EPM project costs summary view of all the projects from across the enterprise. This summary facilitates roll-ups of individual project performance data, providing more timely access to financial, resource, and schedule information. Additional custom views can be configured easily.

Figure 4.24 EPM Project Costs Summary view [04-24-epmProjectCostsSummary.tif]

Source: Advisicon

End users can also take advantage of all the reporting tools included in the Microsoft BI platform, including Excel Services, PerformancePoint Services, Visio Services, PowerPivot for Excel, and SQL Reporting Services (TechNet, 2011b).

Options to Integrate with Microsoft Dynamics

The next-generation ERP architecture will be provided by Microsoft Dynamics AX 2012, which promises to deliver:

* **A model driven layered architecture** that will accelerate the application development process, providing the ability to build solutions more quickly, with less coding, and deliver solutions more quickly.
* **Unified natural models.** A key focus of the Microsoft Dynamics AX 2012 architecture is to facilitate flexible organization and business process models. These models can be set up when implemented for an organization and, more important, can be kept up to date and support changes in business requirements without having to modify the software source code or even implement different ERP systems (MSDN, 2011b).

EPM and ERP Interoperability

Interoperability between ERP and other applications, such as EPM, should be a key requirement for an organization’s future-state ERP architecture.

Microsoft Dynamics AX 2012 offers productivity and familiarity in its design through interoperability with applications such as Project Server and SharePoint, thus extending the reach of the ERP solution within an organization.

The value of using an integrated approach is that:

* Most financial management systems offer minimal PM capabilities (i.e., they are often milestone based with little capacity planning or resource management functionality). Concepts such as critical path, earned value, or resource leveling are foreign concepts in the financial management arena.
* PPM solutions focus on work and resource management and approach financial management from an individual project costing perspective. PM capabilities typically compare a hierarchy of projects to a cost center, bill of materials, or other classification.
* This integrated solution allows the organization to realize benefits from both the PM capabilities in Project Server 2010 and the financial management capabilities in Microsoft Dynamics.
* Integration partners and independent software vendors can create customized business solutions using both Project Server and Microsoft Dynamics AX.
* The integration of Microsoft Dynamics AX and SL 2012 with Microsoft Project Server 2010 allows the user to create projects in either system and synchronize select data across both applications. This synchronization provides the ability to draw on both the core PM capabilities of Project Server and the financial management capabilities in Microsoft Dynamics AX.
* The architecture of the Project Server 2010 and Microsoft Dynamics AX integration works on the basis of a synchronization service that bridges the two and synchronizes projects and workers between the two servers.
* Multiple ways can be used to deploy the necessary components with Project Server 2010 and Microsoft Dynamics AX integration. Figure 4.25 presents a high-level view of the integration between Microsoft Dynamics AX 2012 and Project Server 2010 using a three-server topology (Aggag, Buenafe, and Ashtiani, 2011).

Figure 4.25 Integration between Microsoft Dynamics AX 2012 and Project Server 2010 [04-25-projectIntegrationFigure1.vsd]

Source: Ashtiani, Aggag, and Buenafe, 2011

Third-Party Data Exchange Solutions

In addition to integrating Project Server with Dynamics AX/SL (Microsoft ERP/Accounting Systems), [AU: clarify what this phrase modifies], third-party provider solutions also enable the bidirectional data exchange between Microsoft Project Server and other ERP solutions. These gateway software interfaces ensure the complete consistency of all mapped data in each of the participating systems.

As Project Server is gaining visibility as an enterprise application and a key PPM solution within companies, customers are realizing that Project Server must integrate with existing systems, starting typically with ERPERP systems, such as SAP, Oracle, and PeopleSoft.

Important Concepts

This chapter discussed how the Project Server 2010 platform is more like an ERP system and should be treated as such.

Key Summary Points

Key summary points are highlighted here to remind the reader of some of the vital points covered in this chapter.

* The Project Server 2010 platform is more like an ERP system and should be treated as such.
* Project Server 2010 is built on SharePoint Server 2010 technology and is integrated with Microsoft Office 2010 and Exchange Server 2010.
* Project Server 2010 provides a powerful and familiar work management platform.
* Organizations must learn the value of EPM.
* IT organizations, PMOs, and other organizations need to learn how the communication and workflow capabilities native within Project Server 2010 can address the PPM requirements of small and large businesses.
* The PPM lifecycles requires communication and workflow capabilities that are inherent in Project Server 2010.
* Working in the Project Server 2010 environment enables end users to access information via the Web. With Project, you are not limited to a stand-alone desktop tool.
* An integrated tool set is required to cover the complete PPM lifecycle.

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