Chapter 1: Concepts of Project Management

To use Project 2013 effectively, you’ll want to understand the project management concepts and processes that the tool supports. In this chapter we’ll look at the big picture of project management. We’ll discuss what project management is and where it fits in the enterprise and in the context of programs and portfolios.

After reading this chapter you’ll be able to:

- Define what a project, program and portfolio of projects are and describe how they relate to one another in the context of Enterprise Project Management
- Describe the critical role of projects and programs in an enterprise
- Describe the basic principles and processes for managing individual projects and dynamic project scheduling
- Describe the advantages of a dynamic model over a static chart
I think I should start learning about dynamic models...

Overview

In this chapter, we’ll define what projects and project management are, position project management in the context of the multi-project enterprise, and focus in on the principles and processes for managing individual projects.

This book deals primarily with managing a single project but we do address some issues related to multiple projects. This is because we rarely perform a project in a vacuum: multiple projects performed simultaneously have become the norm. Some projects are logically related to one another, while others may be related only because they share resources and occur within the same organization.

Project 2013 provides features and functions that can help you manage multiple projects and we’ll point those out throughout the book. However to fully address multi-project management, you’ll need Project Server, the software that enables multiple users to effectively collaborate on projects.

What is Project Management?

“Project management (PM) is the application of knowledge, skills, tools and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the 47 logically grouped project management processes, which are categorized into five Process Groups.”
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These five Process Groups are:

- Initiating,
- Planning,
- Executing,
- Monitoring and Controlling, and
- Closing

The project management process is effective when projects are aligned with the organization’s strategy, completed to the satisfaction of the client (fitness for use) and sponsor, and produced on time and within budget. It is increasingly important that we also do this while maintaining and building relationships.

Projects are critical to the success of any organization; they are how an organization brings about change. But projects are often poorly managed and the costs of this mismanagement are high. They include projects that are late, over budget, produce substandard products, don’t satisfy stakeholders and don’t align with the organization’s business strategy.

Projects are complex: they involve people and variables that make it impossible to follow a simplistic cookbook approach and to predict outcomes with complete accuracy. We need project management to manage dynamic and complex efforts to achieve objectives within a project’s competing demands of scope, time, cost, quality, resources and risk.

Completing projects efficiently and effectively provides a competitive edge and enables an organization to improve the way it serves its clients, stakeholders and employees. Effective project management improves the likelihood that projects will be completed successfully.

Why Project Management

“A project is a temporary endeavor undertaken to create a unique product, service or result.”

Projects are the means for making changes (new and improved products and processes, mergers and acquisitions, etc.) in any organization. They represent a significant expenditure of money and critical resources. Projects are critical factors in meeting strategic objectives.

Some organizations have projects as their core operations, like construction, aerospace and consulting companies. There are full-time project managers in these companies. In other organizations, projects are often used to implement changes (like relocations and reorganizations) or for creating new systems (such as information and financial systems). These organizations may also have professional project managers, but many projects may be managed by

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2. Ibid., 3.
occurring or incidental project managers. The line manager of today often has one or more projects in progress.

Examples of Projects

Here is a list of some common project types with examples. Each may have a wide range of complexity, cost, duration and criticality:

- Organizational change projects: implementing a new methodology or relocating an office
- Regulation implementation projects: meeting new environmental or reporting requirements
- Event projects: conducting a conference or making a presentation to investors
- New product development: developing a new pharmaceutical drug
- Information systems projects: developing new software or maintaining existing software
- Construction projects: designing and constructing buildings or roads
- Education projects: developing new courseware or conducting workshops

A Word About Small Projects

There is a tendency to downplay the importance of small projects to justify not bringing project management principles into play. Small projects are as important as any, particularly because there are so many of them and they may be critical to business operations.

The formality of project management must be scaled to the size, complexity and setting of the project to be managed. The fact that a project is small may seem to indicate less of a need for formality. However, when there is a dynamic flow of many small projects, as in a maintenance environment, you may in fact need greater formality.

Some small projects are complex and critical. For example, when a condenser needs to be replaced in a coal-fueled power plant (a project that is small in the context of major facilities projects), it can require that operations be suspended for several weeks. The potential for this “small” project to fall off track has huge financial consequences and therefore a need for greater formality.

Every project needs to be managed effectively.

Enterprise Project Management (EPM)

Project management is a process designed to improve project performance. Before we look at the principles of managing a single project, it’s important to understand the context within which projects exist.

Enterprise Project Management (EPM) or Organizational Project Management (OPM) is the higher-level process within which project management fits. EPM improves organizational performance by linking project work, along with operational work, to organizational strategy.
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EPM addresses the multi-project environment of an organization and the relationships between projects, programs, portfolios of projects, resources and the organization’s strategies, goals and objectives, across all the organization units.\(^3\)

EPM is made up of three complex processes: project, program, and portfolio management, as described below. In addition, it includes the continuous improvement of the overall PM process and the way it relates to other business processes like quality management, engagement management and new product development.

As we said earlier, project management is “the application of knowledge, skills, tools, and techniques to project activities to meet project requirements.”\(^4\) The focus of PM is the individual project, where the detailed action of PM is defining scope, estimating, scheduling, executing, controlling, etc. Projects deliver results.

Program and portfolio management are different: they focus on strategic thinking, optimizing resources and prioritizing, coordinating, and facilitating multiple projects.

- **Portfolio Management**
  - Portfolio management is “the centralized management of one or more portfolios to achieve strategic objectives.”\(^5\)

    A project portfolio is a collection of projects, programs and/or other portfolios. There may be multiple portfolios of projects which roll up into a complete enterprise wide portfolio.

    Portfolio managers and decision makers prioritize among projects within portfolios and select those which will best support the organization’s objectives by effectively utilizing resources in a way that is aligned with the organization’s strategy.

- **Program Management**
  - Program management is “the application of knowledge, skills, tools, and techniques to a program to meet the program requirements and obtain benefits and control not available by managing projects individually.”\(^6\) It is the coordinated application of marketing, strategic planning, project management, and general management to meet program objectives.

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3. In this context we are talking about the general enterprise project management environment, not Microsoft’s enterprise solution.


A Program is “a group of related projects, subprograms, and program activities that are managed in a coordinated way to obtain benefits not available from managing them individually.”

Programs deliver benefits that cannot be delivered in the context of individual projects and portfolios and their management assures that the right projects are done to satisfy organizational strategy.

The graphic of the EPM process model below shows EPM as a process that combines governance, portfolio, program, and multi-project management, as well as individual project management. Portfolio management is a critical component that relies on the effective performance of project and program management and at the same time drives their performance. The whole EPM process is supported by collaboration and consultative support, relationship management, organizational change management, coaching, knowledge transfer, etc.

You can see the following steps in the diagram:

- **Step 1.0, Originating**, is a bridge between portfolio and program management and individual project initiation. It is where requests for projects arise, are evaluated, and decisions are made as to which will be proposed as project possibilities. Originating is really a part of portfolio management and governance.

- **Steps 2.0 through 6.0**, Initiating through Closing, represent the management processes for a single project.

- **Step 7.0** addresses the way the overall process is continuously improved based on lessons learned from individual projects, best practices, and new PM tools.

The “Gates” in the diagram are decision checkpoints at major points in a project’s life. At the gates, portfolio management and individual project management meet. Decisions regarding the continuation of the project are made.

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7 Ibid, 166.
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EPM Process Model

Strategic planning for project management is the development of a standard methodology for project management, a methodology that can be used over and over again, and that will produce a high likelihood of achieving the project’s objectives.  

In every organization, there is a desire to achieve excellence in project management: to reach success in projects by obtaining the benefits that were initially expected.

To achieve excellence in project management, you need to have the foundation of a project management maturity model (PMMM) in place. There are many models that the organization can use. The following PMMM graphic that represents an industry-validated model.

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8 IIL’s Unified Project Management Methodology Model™ (UPMM™)
The five levels of project management maturity, using the PMMM by Harold Kerzner, are:

- **Level 1 – Common Language**: The organization recognizes the importance of project management and the need for a common project management language and terminology.
- **Level 2 – Common Processes**: The organization recognizes the need for common processes that can be repeated and also recognizes the application and support of project management principles to other organizational processes.
- **Level 3 – Singular Methodology**: The organization recognizes the synergistic effect of combining all corporate methodologies into a singular methodology.
- **Level 4 – Benchmarking**: The organization recognizes that process improvement is necessary to maintain a competitive advantage and that benchmarking must be performed on a continuous basis to achieve this.
- **Level 5 – Continuous Improvement**: The organization evaluates the results from benchmarking and enhances the processes defined in Level 3.

Any project management singular methodology, as mentioned in Level 3, needs to include sound scheduling processes. This is the main objective of this book. A sound scheduling methodology will not cover all project management processes, but will help you cover the majority of them.

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Managing Individual Projects

As we have said, the focus of this book is on how to use Project 2013 to manage individual projects. To do this, you need a solid understanding of the basic principles of project management and how to adapt and apply them to specific project situations.

Areas of Knowledge

According to the *PMBOK® Guide – Fifth Edition* published by PMI®, there are ten areas of knowledge that must be addressed to manage any project:

![Diagram of Project Integration Management](Adapted from PMBOK® Guide — Fifth Edition)

Where Project 2013 Fits

As a stand-alone tool, Project 2013 is most helpful in managing time (schedule development and control), cost (budget development and control), and resources (the availability and workloads of the people, machines, and other resources). It helps in managing scope (what is to be accomplished) to the extent that it reflects the work activities to be performed.

Project 2013 also provides features that help to manage communication among project stakeholders. Reports of project status, progress and predicted outcomes can be produced, emails can be triggered, etc.

Project Server 2013 can be of even greater help to the project manager in managing communication, risk, and other areas. Program management and portfolio management are also covered thanks to Project Server 2013.

Project Demands

Every project is a response to a request for some outcome (deliverable) within a stated time and cost. The requester wants a new or changed product, process, or event in a certain amount of time and for a desired cost.

During the project life-cycle, the project may be pulled by many forces that compete against one another and can make strong demands upon it. These are commonly referred to as the competing demands and include: scope, time, cost, quality, resources, and risk. These competing demands are initially
client- and sponsor-driven. Then, through negotiation, they are turned into a realistic plan that considers other demands on the project such as the size and complexity of the deliverables, the size and complexity of the project team, the availability and capacity of the human and other resources, the reliance on other projects, the cultural and legal restrictions, as well as any and all factors that influence project performance.

In delivering the project to its requested or required scope within the defined time and cost constraints, it is important to recognize the interdependencies of scope, time, and cost. The project team should identify the primary drivers of the project and be able to measure the impact of a potential change in scope, time, or cost for each.

**Balance Flexibility and Discipline**

**Discipline** promotes best practices and a broader perspective, and supports continuous improvement. Further, it helps the organization comply with both regulatory and due diligence constraints.

However, **flexibility** is essential to provide people the autonomy and support they need to creatively navigate the intricacies of the organization while meeting objectives effectively and efficiently.

A balance between flexibility and discipline is needed to create a dynamic project management process that meets the needs of complex organizations in fast-paced environments.

Over-discipline can lead to unnecessary costs, delays, frustration and poor products. Over-flexibility can lead to the same results. The nature of the project and its environment should drive the degrees of discipline and flexibility needed and the forms they take. Project planning includes making decisions regarding the way procedures and approaches will address discipline and flexibility. While the *PMBOK*® Guide – Fifth Edition represents “good practice,” it is not necessary to apply every *PMBOK*® Guide – Fifth Edition principle to every project. It is up to the project manager and the project team to determine which processes to apply and to what degree of rigor they should be applied.

The illustration below graphically represents these process groups and their complex interrelationships.  

The process groups are defined in detail below. The following explains the relationships among the process groups, which are iterative and non-linear:

- Initiating is typically thought to be the first step in any process; however, there is need for planning before initiating any project. Further, there are decision points in some projects at which initiating is revisited.
- Planning continues throughout the life of the project. It overlaps with initiating to provide cost, time and resource information for use in decision making. Planning also provides the baseline for controlling the project.
- Monitoring and Controlling provide information for refining the project.
- Executing provides the deliverables as well as the data for use in Monitoring and Controlling.
- Closing is a process that begins well before the project ends and influences future projects.

The next sections will briefly describe the five process groups. The planning process group is covered in more depth than the others, as it is the central process and a principle focus of this book.

**Initiating**

Initiating results in a project that (1) has been authorized by those who have the responsibility to decide which projects are to be funded and (2) can begin to use resources to execute the project. Authorization often extends up to a checkpoint at which the project will be reevaluated.

To initiate a project, decision makers use information regarding project scope, time and cost. These “triple constraints” plus others like resource availability, risk, and market and regulatory issues, are factors to consider when initiating a project. This implies that planning must begin prior to project authorization. Early estimates should be provided as a range, understanding the risks that could be encountered at this stage of the project.

While initiating, potential project stakeholders are identified and may take part in providing supporting information to be used in decision making.

**Planning**

Planning is arguably the most central and critical part of project management. Planning results in a project plan that is the baseline for directing and controlling project performance. The plan is a model of the project and since projects are dynamic the plan must also be dynamic. Planning begins as soon as anyone begins to describe the project and continues throughout the project’s life. Planning is the opportunity to learn about the needs and character of the participants and identify optimum ways to fulfill their needs. It is the means for managing expectations as well as acknowledging and reducing risk.

Planning is part of the “real work.” The value of planning was impressively demonstrated in a project some years back: a project team coordinated equipment and multiple suppliers to build a real house that met stringent building codes in only three hours. The only way this was possible was to do a significant amount of planning beforehand to minimize chance and make sure everything went well. Of course, over-planning and expecting the plan to be rigidly followed is as ineffective as not planning. The plan is a useful guide as opposed to a set of orders to be followed.

Planning can be done with a wide variety of levels of detail and formality. It consists of the following activities:
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- Identify scope — objectives and requirements
- Agree on the approach
- Identify and describe the activities
- Estimate and schedule the work (this includes addressing risk and uncertainty)
- Optimize the plan
- Adjust as needed and throughout the project cycle to keep the plan up-to-date to truly reflect the project’s real-world situation

These planning activities are not performed in a simple sequence. Each step’s outcome is influenced by the outcomes of previous steps and may influence those outcomes as well. Optimizing the schedule might require adjustments to the objectives and requirements. Planning is a complex, iterative process.

Risk and uncertainty are realities. To manage them, you should include allowances for contingencies, issues, and changes. State your assumptions and clearly communicate the degree of uncertainty.

Planning is done throughout the life of a project. Rolling wave planning (as illustrated in Chapter 4) is an approach that recognizes the uncertainty faced by many project managers. In rolling wave planning, a high-level plan is developed for the whole project and the next phase of work is planned in greater detail. At the completion of that phase, the overall plan is reviewed and possibly refined, and a detailed plan for the next phase is created. This rolling wave approach is used to give project stakeholders increasingly accurate estimates and schedules as more becomes known about the project and its requirements.

The more people know about what they expect to receive or deliver, the more likely it is they will be satisfied. Objectives and requirements define what’s expected. They answer questions like:

- What are the overall intent and major outcomes of the project?
- What is the underlying reason for performing the project (e.g., save money, make more money, improve service to customers)?
- What is the desired outcome (the product), when is it desired and what are the cost expectations and limitations?
- What are the specific behavioral and functional requirements?

Objectives and requirements drive the project and form the basis for determining whether the project was successful. They are progressively elaborated starting with a relatively abstract definition and proceeding to greater degrees of detail and specification as the project unfolds.
It is essential to forge agreements among the stakeholders early in the life of the project. Establish guidelines, standards, and procedures scaled to the needs of the project. Get agreement on how communication, procurement, issues, change control, and quality control will be handled. This will help avoid confusion during the project and promote best practices that increase effectiveness and efficiency. Avoid bureaucracy and seek the right balance between flexibility and discipline. The use of Project 2013 to manage this area of planning is covered in Chapter 3: Entering Tasks.

Identify all of the project’s outcomes or deliverables and the work required to deliver them. The work breakdown structure (WBS) is a “hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables.” Each descending level of the WBS represents an increasingly detailed definition of the project work. The WBS organizes and defines the total detailed scope of the project and represents the work specified in the current approved project scope statement.

Taking a layered or hierarchical approach enables planners to more accurately identify all of the work that needs to be done and manage it at different levels of detail. The WBS also becomes a focal point for project accounting and for assigning responsibility and accountability. It is the basis for estimating and scheduling.

Project 2013 is designed to automate work breakdown structures. Chapter 3: Entering Tasks will explore the WBS and how it is used in Project 2013.

When you estimate you are attempting to predict a project’s effort, cost, and duration. Scheduling brings together the availability of resources and their numbers and capability; the activities to be done, including their sequence, estimated labor, and other costs; the environmental conditions; and the calendar. The output of scheduling is a time line predicting when tasks will be performed, resources will be needed, and deliverables will be completed. The estimated cost of the project can be calculated and a budget created based on the schedule. You should estimate based on past experience and at an appropriate level of detail.

Dynamic scheduling recognizes and accepts that change is inevitable. It is based on a systematic linking of project activities to one another and to resources so that change in one part of the model can be easily analyzed to determine its impact elsewhere.

Sequencing or linking is a critical part of scheduling. Analyze the dependencies among activities to determine which activities must be done serially and which other

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can be done in parallel. For example, if an activity is completed late and other activities are delayed waiting for the results of the first activity, there is a ripple effect through the project. Chapter 5: Entering Dependencies, will discuss various techniques and thoughts about linking tasks.

Will resources be available? Planning requires realistic assessment as to whether the staff and other resources will be available at the right time. Resource availability and capability directly affect the schedule. Assess the likelihood of resources being what, when, and where you expect them to be. Chapters 7 and 8 address resource-related aspects of scheduling.

The project manager is responsible for keeping the project plan up to date and realistic. A dynamic schedule allows Project 2013 to minimize the work required and to give stakeholders the ability to assess risks and impacts. Further, it enables planners and managers to explore “what-if” scenarios to explore alternatives and come up with various actions to take.

Unfortunately, project management tools do not automatically estimate or sequence project activities. That is why many of the chapters are titled “Entering ...” People enter estimates, resources, and dependencies. Once the unconstrained schedule is built, it may be necessary to indicate constraints on the project. This is covered in Chapter 6: Entering Deadlines, Constraints, and Task Calendars.

The use of Project 2013 to manage this area of planning is covered early in the material.

Scheduling is modeling. A model is a simplification of reality that enables modelers to reflect reality without spending undo time, effort, and other resources. Dynamic scheduling, as described in this book, is predicated on the idea that a schedule is only truly useful if it is kept up-to-date and allows for change. A dynamic model allows the schedulers to come up with multiple alternatives and to optimize the plan.

An optimized plan is one that comes to the right combination of product quality, cost, and time, given resource and other constraints. Come to an agreement with the client and/or sponsor about priorities and trade-offs to ensure optimization applies to all stakeholders. In reaching this agreement, the project’s outcome, target date, budget, available resources, tools, techniques, and the project environment may all be adjusted to find a realistic and optimum plan to achieve objectives. Pushing back and justifying why you may have to say “no” is part of the process of managing expectations that will ensure project success.

Chapter 9: Optimizing the Schedule addresses how to re-plan the schedule using Project 2013.
Planning continues throughout the project’s life and should always accurately reflect the project in its current state. The plan is a baseline for determining if expectations are being met and for identifying actions needed to keep the project on track.

Dynamic scheduling using Project 2013 enables project managers to assess the impact of changes, compare the current plan for the rest of the project against the baseline and determine any needed course of actions.

Chapter 10: Updating the Schedule will address keeping your schedule up to date.

Planning is where most of the management is. Executing is where 90% of the action is. Project activities are performed, deliverables are produced and data is created. You can use Project 2013 to capture time and cost data and provide a repository for performance data such as the amount of effort expended to complete a task. Another important aspect of executing is to manage and document project issues and changes.

Chapter 11 addresses reporting and will introduce many new ways to report on a project’s progress, status, and forecasts.

In Monitoring and Controlling you take the project performance data and compare it to the plan to determine whether expectations are being met, changes are needed to the plan, or corrective action is needed.

Project 2013 provides a rich collection of reporting features to present progress, status and forecast reports.

Remember, the process is iterative: as the project progresses there may be variance from the original plan and there certainly will be more information available for validating assumptions. You need to go back into planning to refine the plan so as to make it more realistic. Further, planning is performed at key points in the project to make more refined short term estimates and to re-estimate out to the end of the project.

Chapter 12 on Earned Value Management addresses how to use Project 2013 to monitor and control your projects.

Monitoring and Controlling is not limited to the budget and schedule. You should also assess the quality of the product and the relationships among the project stakeholders.
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Closing

Projects MUST end. They end when they are cancelled or when they achieve their objectives and the end product is delivered. Closing includes the processes that formally terminate a project and transfer the completed product to those who will support, use, manage, or maintain it for its life. Formal termination includes archiving project documents, closing out cost accounts and contracts, and obtaining formal acceptance of the project results.

Closing also includes the review and evaluation of the project’s performance and the identification of lessons learned. In large, complex projects, closing processes may also occur at the end of key project phases.

Dynamic Scheduling

Why Do We Schedule?

We use the term “Dynamic Scheduling” in the title of this book. We present here a brief explanation about why we schedule and what we consider a dynamic schedule.

There are many reasons for preparing project schedules. Here are four examples which require varying levels of challenge and detail:

- **Sell**
  
  You can use schedules to sell upper management or a client on undertaking a new project.

  Project 2013 schedules support this type of selling with the Timeline View graphic with the main dates, or by making the timing of milestones visible in a high-level Gantt chart. Schedules built for this purpose often look very slick.

  Selling requires the least detail in your schedule, but requires a high level of knowledge and experience about the situation, because you must present a realistic prediction without a deep analysis of details. The expected result would be that you get the contract or project authorization.

- **Delegate**
  
  Once your project is authorized, you need a more detailed schedule to delegate the work.

  With Project 2013, you can develop this from the high-level schedules you used for authorization or selling purposes. Create your work breakdown structure and use the details from it to generate activities to assign to team members or subcontractors. Use your schedule to communicate commitments: everyone will know what to do and when to do it, and you’ll also have a budget of your project. The expected result is a plan with commitments agreed upon and the project baseline set.
Track
In order to track your project, you enter the current status regularly into your Project 2013 schedule and compare the progress against the previously defined baseline. The output of tracking is a status report that shows how far the project has progressed.

Tracking allows you to report to stakeholders what has been accomplished in the project and provides a history that allows you to learn from past successes and failures. If you use Earned Value Management for tracking, you will also obtain variances and performance indices which are the basis for trend analysis and forecasting.

Forecast
You can use Project 2013 to model your project to forecast the finish date and the total cost. You have to create the schedule in such a way that it immediately shows what impact actual events have on the project finish date and cost as you enter progress information.

Forecasting provides answers for questions such as: When will deliverables be available? On what dates will individual resources be needed? When will the project be done? What will the project cost? If the answers to these questions aren’t acceptable according to your commitments, you will need to apply corrective actions and replan the remaining activities. If this is not possible, you will need to renegotiate the main objectives or maybe even look at some trade-offs.

In order to use your schedule for the four purposes described above, you will need to prepare your Project 2013 schedule model for the initial planning phases. We will provide you with all the guidelines to help you set up a dynamic schedule that will give you this predictive power.

Your project schedule is a model: a simplification of reality. We use models because we can build a model at a fraction of the cost of building the reality. Models let us simplify complex realities so we can manage them to make decisions. But it’s crucial to represent that reality in a way that helps us make the right decisions.

A static chart is one that requires you to do all of the updating. A dynamic model updates itself: when you enter change in one part of the project, other parts are automatically updated.

As a project manager, you should make it your goal to create a dynamic model of your project situation, not just draw a static chart that will look impressive hanging on your wall. The advantages of a dynamic model are:

➤ A dynamic model is easier to update
A static schedule might initially represent a good model of the real project timeline and costs, but in a fast-changing environment, a static schedule will soon be obsolete. The re-work to build a new static model can be huge and you’re likely to miss some important progress updates which could result in wrong decisions for the future.

A dynamic schedule is a living document and should be kept alive until the project ends. If a schedule model is not or cannot be kept easily up-to-date, it is not a dynamic schedule.

- A dynamic model is responsive
  In order for schedules to be easily kept up-to-date, they need to be responsive. A responsive model updates itself as much as it can. Schedules can do this if they were created with as many dependencies as needed and as few fixed dates (constraints or manually scheduled tasks in Project 2013) as possible. A dynamic schedule uses all of Project 2013’s automatic updating features to keep it updated as you enter information on progress.

- A dynamic model has predictive power
  Schedules need to show the latest forecasts of the finish date and the final expenses of the project. Only then can a schedule truly be a powerful decision-support system for the project manager and key stakeholders. This requires that the model use empirical, actual data that is translated into forecasts using algorithms. To complement these algorithms, it is necessary for the project manager to use trend analysis. And most importantly, corrective actions need to be taken if the project deviates from the original objectives. A dynamic schedule will allow all of these.

Another advantage a dynamic model has over a static chart is that you can use a dynamic model to develop different scenarios to analyze other possible situations and then implement what could be a better option.

- A dynamic model is easily accessible online and in real time
  In order to keep the project team working together and aligned, all information from the dynamic schedule model needs to be easily accessible to everyone. This is essential in order for good decisions and corrective actions to be made in a timely manner.

The project manager is responsible for making the schedule readily available. The traditional solution is to deliver reports at different levels of detail following pre-established reporting periods. The other option is to have all of the information online and in a real time, using the advantages of Project Server 2013 and SharePoint Server 2013. With this solution, you’ll have the powerful and dynamic features of Project 2013 accessible through a user-friendly interface that executives and team members can
use to keep their fingers on the pulse of their portfolio, programs and projects.

In the chapters that follow, we will show you how to create a model of your project—one that meets all the criteria of a dynamic schedule we just described.
In this chapter we have defined terms and set a conceptual foundation for what project management is: what its basic principles are and what process groups make up the overall process of managing a project.

The remainder of the book addresses the use of Project 2013 in planning, executing, monitoring and controlling, and closing a project. The book is centered on the concept of dynamic scheduling.

Former US President and Military General Dwight D. Eisenhower once said, “In preparing for battle, I have always found that plans are useless, but planning is indispensable.” In the time in which he lived (1890–1969), most project plans were static in nature and “dead” as soon as they were written. A plan that can’t be or isn’t updated is of limited use. Clearly, President Eisenhower was a very knowledgeable project manager.

With the introduction of Project 2013, we can create plans that are alive and dynamic. In Project 2013, the project schedule is a model that shows the most current status and allows predictions based on the combination of dependency and resource linkages. This easy to update electronic model of your project allows you to make forecasts at any time during the life of the project, adjusting for the inevitable changes.

Such a dynamic model is a powerful tool for project managers. Maybe if President Eisenhower were still alive, he’d say: “In preparing for the global marketplace, I have found that planning is indispensable and dynamic models are a critical success factor.”

But planning by itself is not enough. We must apply the principles of project management throughout the project management process groups, from initiating to closing, and we must do it with full awareness of the enterprise and environmental conditions that influence our projects.

The remainder of this book addresses the way that Project 2013 can be used to enable effective scheduling and budgeting, as well as project control, through dynamic scheduling.
Dynamic Scheduling® with Microsoft® Project 2013

Review Questions

1. What is a project and what makes it different from other kinds of work?
2. Are there organizations that never have any projects?
3. Are there organizations that only have projects?
4. What is the difference between project management, program management and portfolio management?
5. What are the PM knowledge areas according to the PMBOK® Guide – Fifth Edition from PMI®?
6. What are the competing demands in project management and why are they important?
7. What is the rolling wave approach to project planning?
8. What are the six activities of project planning and are they always done in sequence?
9. What advantages does a dynamic schedule have over a static schedule?