



PM54G : Project Management Orientation

LDE-LTU58737

June 2017



Project Management Orientation

- +/- 1: Getting Started
- +/- 2: Define the Project
- +/- 3: Team Management
- +/- 4: Identify and Validate Requirements
- +/- 5: Create Decomposition Structures
- +/- 6: Risk Management
- +/- 7: Project Estimates
- +/- 8: Project Schedules
- +/- 9: Change Management
- +/- 10: Project Control and Delivery
- +/- 11: Project Management Review
- +/- 12: Project Closeout
- +/- 13: Project Management Tool Suite
- +/- 14: Self-Assessment and Final Exam

Welcome

Welcome to the *IBM Project Management Orientation (PMO)* course. Project managers are responsible and accountable for a wide range of processes and relationships. This course introduces basic principles of project management essential to being a successful project manager.

To receive credit for this course, you must pass the end-of-course exam with a score of 70% or higher. Some memorization of course terms is required. There are self-check questions in each module to assist you with your understanding and memorization of the materials in preparation for the final exam.

PMO is an introduction to the project management concepts that are applied in the three-day Project Management Fundamentals (PMF) course (PM10G). The terminology used in this course is from the Worldwide Project Management Method (WWPMM) and the Project Management Institute (PMI).

Note: To receive credit for the completion of this course, you must pass the end-of-course exam with a score of 70% or higher.

Preferences



Project Management Orientation

<input checked="" type="checkbox"/> 1: Getting Started
<input checked="" type="checkbox"/> Course Objectives
<input type="checkbox"/> Audience and Prerequisites
<input type="checkbox"/> Course Framework and Duration
<input type="checkbox"/> Copyrights and Trademarks
<input type="checkbox"/> Course Navigation
<input type="checkbox"/> 2: Define the Project
<input type="checkbox"/> 3: Team Management
<input type="checkbox"/> 4: Identify and Validate Requirements
<input type="checkbox"/> 5: Create Decomposition Structures
<input type="checkbox"/> 6: Risk Management
<input type="checkbox"/> 7: Project Estimates
<input type="checkbox"/> 8: Project Schedules
<input type="checkbox"/> 9: Change Management
<input type="checkbox"/> 10: Project Control and Delivery
<input type="checkbox"/> 11: Project Management Review
<input type="checkbox"/> 12: Project Closeout
<input type="checkbox"/> 13: Project Management Tool Suite
<input type="checkbox"/> 14: Self-Assessment and Final Exam

Preferences

Course Objectives

Project management is a key initiative at IBM. IBM project managers need training to efficiently and effectively manage projects. Consultants, IT architects, IT specialists, and other team members who work with the project managers also need to understand the basics of project management. This course provides you with in-depth exposure to project management concepts, such as baselines, work breakdown structures, Seven Keys to Success™, risk management, estimating, scheduling, project control, and closeout.



Project Management Orientation

- 1: Getting Started
 - Course Objectives
 - Audience and Prerequisites
 - Course Framework and Duration
 - Copyrights and Trademarks
 - Course Navigation
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Audience and Prerequisites

Audience

The audience for this course includes:

- New hires with varying experience in project management
- New project managers
- Other professionals who work with project managers
- People outside of the project management profession who are required to take the two-day project management education to be certified

Prerequisites

There are no prerequisites for this course.



Project Management Orientation

- 1: Getting Started
 - Course Objectives
 - Audience and Prerequisites
- Course Framework and Duration
 - Copyrights and Trademarks
 - Course Navigation
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Course Framework and Duration

Course Framework

The following diagram shows how the course modules take you through the processes that comprise the project management life cycle from planning, through delivering and controlling, to closing. IBM's Worldwide Project Management Method (WWPMM), Seven Keys to Success™, and PM Tools support the project manager throughout the entire life cycle.



Course Duration

PM Orientation takes an average of 16 hours to complete. Some students can complete it in less than 16 hours and some students need more time. It is recommended that you take the course in two-hour intervals.

The following list shows the average completion time per module:

- Module 1 - 10 minutes
- Module 2 - 1 hour 45 minutes
- Module 3 - 1 hour 20 minutes
- Module 4 - 1 hour 30 minutes
- Module 5 - 1 hour 20 minutes
- Module 6 - 1 hour 50 minutes
- Module 7 - 1 hour 50 minutes
- Module 8 - 1 hour 45 minutes
- Module 9 - 1 hour 40 minutes
- Module 10 - 40 minutes
- Module 11 - 35 minutes
- Module 12 - 35 minutes
- Module 13 - 15 minutes
- Module 14 - 45 minutes



Project Management Orientation

- 1: Getting Started
 - Course Objectives
 - Audience and Prerequisites
 - Course Framework and Duration
 - Copyrights and Trademarks
- Course Navigation
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Copyrights and Trademarks

Copyright Notice

Copyright International Business Machines Corporation 2017. All rights reserved.

Note to U.S. Government Users - Use, duplication, or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corporation.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (@ or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at <http://www.ibm.com/legal/us/en/copytrade.shtml>.

Adobe and the Adobe logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Seven Keys to Success is a trademark of International Business Machines Corporation in the United States, or other countries, or both.

Microsoft, Internet Explorer, Windows, and Windows Media Player are trademarks of Microsoft Corporation in the United States, or other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.



Project Management Orientation

- 1: Getting Started
 - Course Objectives
 - Audience and Prerequisites
 - Course Framework and Duration
 - Copyrights and Trademarks
 - Course Navigation
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Navigation

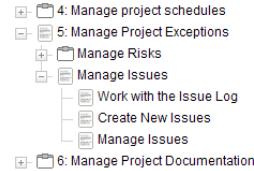
Course Navigation

The 14 modules in this course appear as folders in the navigator in the left-hand side of your screen. To access the first page of a module, click the module title in the navigator. To expand a folder and show the content of a module, click the + sign to the left of the module title.

A folder can contain multiple levels of sub-folders. To expand a sub-folder, click the + sign to the left of the sub-folder title.

Click the - sign to collapse a folder or sub-folder.

Folders and sub-folders are represented by a folder icon; single pages are represented by a page icon. Note that a folder is itself a page with course content. Therefore, when a folder is expanded, its icon changes to a page icon, as shown in this example.



You can directly access any page in the course by clicking the page title in the navigation panel. You can also navigate the course using the **Next** and **Previous** buttons at the bottom right of the screen.

You can resize the navigation frame and the content frame by dragging the vertical border between the two frames with your mouse to the left or to the right.

Completion Tracking

As you view pages in the course, their icon in the navigation tree changes to indicate their completion status: Navigation

When some of the pages in a module have been viewed, the closed folder icon changes to indicate that the module has been started but has not yet been completed: 1: Getting Started

When all the pages in a folder, including the folder page itself, have been viewed, the closed folder icon changes to indicate that the module is complete: 1: Getting Started

When a folder is expanded, its icon indicates the status of the folder page only, either viewed or not viewed, not the status of the whole folder, which itself could not be started, started, or completed.

As you go through the course, the progress indicator at the bottom of the screen shows your completion percentage: Viewed 11%

The completion percentage is based on the number of pages viewed so far.

Important note: The completion status is saved in a cookie on your computer. If you delete this cookie, the completion status will be reset to *not started*.

Instructions for printing a completion certificate are provided at the end of the course.

Links to other materials

Links to other materials are included at various points in the course. Some links are internal to the course. There are also links to the Internet or IBM intranet. You will be directed to click the links to access the material. You must be connected to the Internet or IBM intranet to access the links.

Accessibility note

By clicking an external link, you are linking to a learning activity outside the course which might or might not be accessible. For information about the compliance of the application or Web site, contact the application or Web site owner.

Other Functions

Print

Print Page You can use the **Print Page** button at the bottom left of the screen to print any page in the course.

Preferences

Click **Preferences** at the bottom of the navigation frame to expand that section. Checking the selection allows users of screen readers to add textual indication of the completion status of each node in the navigation tree. Each label is appended with either *viewed* for a page or *completed*

for a folder.

Click the course title to minimize the **Preferences** section and return to the course navigation.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 2 Objectives

This module enables you to:

- Identify project phases
- Consider project stakeholders
- Identify behaviors of successful project managers
- Create a project charter and project definition

This module takes approximately 1 hour 45 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- Fast Points
- Project Management Terminology
- Project Phases
- Behaviors of a Successful Project Manager
- Project Stakeholders
- Project Charter
- Project Definition
- WWPMM
- Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Define the Project

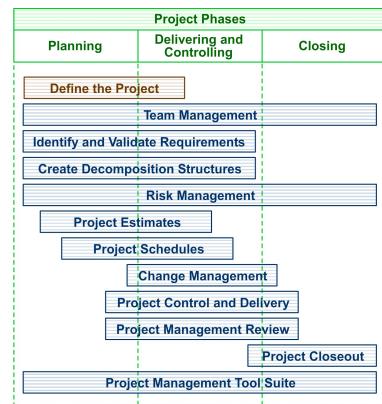
Fast Points

The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Defining the Project," which is covered in the Planning phase and at the start of the Delivering and Controlling phase.

Welcome to the Rest Easy Hotel project. As you work through this course, you will be applying what you are learning on the Rest Easy Hotels project case study.

Click the photos to meet Tom Smith, the IBM Project Executive for Rest Easy Hotels, and Pat DiPesto, Rest Easy Hotels Executive Director.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

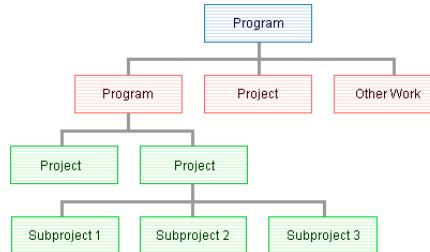
Project Management Terminology

Project Management Definitions

What Is Project Management?

People sometimes use the terms project management, project, subproject, and program without understanding their meaning. So let's first define these terms and compare their meaning. **Project management** is the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder objectives and expectations from a project (from PMI).

Project management supports three basic levels of projects: projects, subprojects, and programs.



What Is a Project?

A **project** is a temporary endeavor undertaken to produce a unique product or service, within a specified scope.

A project is a unique process, consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective that conforms to specific requirements, including the constraints of time, cost, and resources (from ISO 10006).

Projects differ from operations, such as manufacturing, in that operations are ongoing and repetitive, while projects are temporary and unique (from PMI). Projects can range from simple efforts to large, complex undertakings that require much time, effort, and money.

What Is a Subproject?

Like a project, a **subproject** is:

- A temporary endeavor undertaken to produce a unique product or service
- A set of work units assigned to a single project organizational unit to divide the project into more manageable components

IBM uses the term subproject to refer to a part of a project managed with a level of independence.

What Is a Program?

The Worldwide Project Management Method (WWPMM) defines a **program** as a group of related projects and other activities managed in a coordinated way to achieve a common long-term objective.

A program is realized through multiple projects and ongoing activity. The scope of a program might be broadly defined and might evolve as the business or organization develops, or it might be specifically defined to achieve an agreed set of goals.

What Is a Portfolio?

WWPMM defines a **portfolio** as the set of hardware, software, or services offerings, solutions, or engagements within a business area that addresses a market segment. Any component of one portfolio can also be a component of others.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Differences between a Program and a Project
 - Project Management Definitions - Question
- Fundamentals of Project Management
- Project Phases
- Behaviors of a Successful Project Manager
- Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Definitions

What Are the Main Differences between a Program and a Project?

The main differences between a program and a project are that a program achieves a strategy or mission, is realized through multiple projects and ongoing activity, and has a scope that might be either broadly defined or specific. A project, on the other hand, has a start and a finish, achieves a single set of defined objectives, and is a tactical initiative.

An example of a program is the running of a hotel, whereas an example of a project is refurbishing part or all of the hotel installations, painting the building, or launching a marketing initiative to increase occupancy.

Table showing the differences between a project and a program

Project	Program
Has a beginning and an end	Consists of multiple projects with no beginning or end
Has a set of defined deliverables	Scope can be very broad or very specific
Supports a tactical initiative	Supports a strategy or on-going mission
Example: updating all the computers in the hotel with one new version of software	Example: the ongoing IT support of all the computers in the hotel.

Detailed Description of Table showing the differences between a project and a program

The table has two columns: one for project and the other one for program. It compares items one by one as follows:

1. Has a beginning and an end. - versus - Consists of multiple projects with no beginning or end.
2. Has a set of defined deliverables. - versus - Scope can be very broad or very specific.
3. Supports a tactical initiative. - versus - Supports a strategy or ongoing mission.
4. Example: Updating all the computers in the hotel with one new version of software - versus - Example: The ongoing IT support of all the computers in the hotel.

[Close](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Differences between a Program and a Project
- Project Management Definitions - Question
- Fundamentals of Project Management
- Project Phases
- Behaviors of a Successful Project Manager
- Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Project Management Definitions

Question

Which of the following statements is true about a program?

- A. A program has no definite beginning or end, lacks a clear objective, and relies on long-term management and teaming structures, rather than relying exclusively on borrowed resources.
- B. A program is a group of interrelated projects and other activities managed in a coordinated way in order to achieve a common long-term objective.
- C. A program is a temporary endeavor undertaken to produce a unique product or service.
- D. Both A and B.

Submit Answer

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Terminology

Fundamentals of Project Management

What Is Project Management?

WWPMM defines **project management** as the application of knowledge, skills, tools, and techniques to project activities to meet or exceed stakeholder objectives and expectations from a project (from PMI).

WWPMM also defines project management as the planning, organizing, monitoring, and controlling of all aspects of the project in a continuous process to achieve its objectives (from ISO 10006).

Both definitions are correct and accurately reflect what is generally expected of a project manager to successfully manage a project.

Project Management Responsibilities

WWPMM provides a consistent method for how projects are managed at IBM. The IBM Project Management Policy defines the specific set of elements of WWPMM that must be implemented on all projects.



It is the project manager's responsibility to use WWPMM as the basis for managing projects.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- Fundamentals of Project Management - Q
 - WWPPMM
 - WWPPMM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Fundamentals of Project Management

Question 1

What is project management?

- A. The planning, organizing, monitoring, and controlling of all aspects of the project in a continuous process in order to achieve its objectives.
- B. The planning and application of business and financial models used to control all aspects of the project for the purpose of meeting project objectives.
- C. The application of knowledge, skills, tools, and techniques to project activities for the purpose of meeting or exceeding stakeholder objectives.
- D. Both A and C.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Fundamentals of Project Management - Q
 - WWPMM
 - WWPMM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Fundamentals of Project Management

WWPMM

Worldwide Project Management Method (WWPMM) describes the way we manage projects in IBM. WWPMM is sponsored by the Project Management Center of Excellence to support a corporate action directing us to design and implement a single, common project management method for IBM projects worldwide.

It is the project manager's responsibility to customize the project management (PM) methods, within the constraints of the PM policy, to suit each particular project.

- **Practices** group the tasks, work products, and guidance needed to support a particular area of knowledge.
- **Activities** arrange the tasks defined in the PM practices into a series of executable steps designed to meet particular project management goals or in response to particular project management situations.
- **Work Products** are the verifiable outcomes that are used to manage projects.

Click each tab to learn more.

▼ Practices

The methods that make up WWPMM are organized into subject areas called practices. Each practice contains the tasks, work products, and guidance needed to support a particular area of knowledge.

List of Practices

Change Management

The Change Management practice includes the activities, work products, and associated guidance required to manage the unforeseen changes that inevitably arise during the course of a project.

Communications Management

The Communications Management practice includes the activities, work products, and associated guidance required to:

- Ensure the timely and appropriate collection, generation, dissemination, storage, and disposition of project information
- Provide the critical links among people, ideas, and information that are necessary for success

Event Management

The Event Management practice includes the activities, work products, and associated guidance used to resolve issues that arise during the course of the project, analyze particular situations, handle compliance incidents, and manage the completion of actions.

Financial Management

The Financial Management practice includes the tasks, work products, and associated guidance required to effectively plan, track, and reconcile project budgets and financial information.

Human Resource Management

The Human Resource Management practice includes the tasks, work products, and associated guidance required to effectively coordinate human resources on a project, including those needed to plan, obtain, orient, assign, and release staff over the life of the project.

Quality Management

The Quality Management practice includes what is required to ensure that the project satisfies the stated or implied quality criteria for which it was undertaken. It addresses quality from the perspective of both the management of the project and the products and services that are to be produced.

Risk Management

The Risk Management practice includes the activities, work products, and associated guidance required to identify, analyze, and respond to risk throughout the life of the project.

Schedule Management

The Schedule Management practice defines the work (activities) that are performed to create the work products that comprise the project's scope. It also describes tracking progress against the plans to execute the work.

Scope Management

The Scope Management practice includes the activities, work products, and guidance for transforming a business need into a clearly defined strategy for providing a solution which meets the business need.

Sponsor Agreement Management

The Sponsor Agreement Management practice includes the activities, work products, and associated guidance used to develop, negotiate, maintain and, finally, close the agreement with the sponsor. It also covers managing the acceptance of the deliverables, including the correction of defects.

Supplier Management

The Supplier Management practice includes the activities, work products, and associated guidance used to acquire goods and services from outside the delivery organization.



Supplemental Practices

Supplemental practices include practices from non-WWPMM methods that may be useful in managing a project, such as:

- Estimating Governance
- Technical Environment Management

▶ Activities

▶ Work Products



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Fundamentals of Project Management - Q
 - WWPMM
 - WWPMM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Fundamentals of Project Management

WWPMM

Worldwide Project Management Method (WWPMM) describes the way we manage projects in IBM. WWPMM is sponsored by the Project Management Center of Excellence to support a corporate action directing us to design and implement a single, common project management method for IBM projects worldwide.

It is the project manager's responsibility to customize the project management (PM) methods, within the constraints of the PM policy, to suit each particular project.

- **Practices** group the tasks, work products, and guidance needed to support a particular area of knowledge.
- **Activities** arrange the tasks defined in the PM practices into a series of executable steps designed to meet particular project management goals or in response to particular project management situations.
- **Work Products** are the verifiable outcomes that are used to manage projects.

Click each tab to learn more.

► Practices

▼ Activities

A project management (PM) activity is a series of steps designed to meet a particular project management goal or in response to a particular project management situation.

The PM activities provide steps (represented as tasks) in a thought process or a pattern of behavior that project managers may use in typical situations, such as preparing for delivery or handling an issue.

List of Activities

Defining

The goal of these activities is to gain a thorough understanding of the sponsor's business needs, and outline what will be delivered to meet those needs, and an approach for how to deliver it. It also includes defining the context and setting objectives of the project. The purpose is to:

- Establish a good understanding of the business justification for the project/program
- Outline the scope of the proposed solution
- Determine the overall approach and organization that are likely to minimize risks and best support IBM's business strategy
- Define the initial (high-level) approach that will be the basis for further planning activities

This work includes:

- Understand Objectives and Plan Defining Activities
 - Learn about the context and objectives of the project to reach a preliminary understanding of the project and of the possible approaches to it.
- Define Target Solution
 - Define the target solution in sufficient detail to be able to select the overall approach.
- Describe Overall Approach
 - Describe the overall approach towards delivering the target solution.
- Shape Project
 - Establish the scope, determine the best approach and build the planning framework for the project.

Planning

The goal of these activities is to outline the plans describing the means that will be necessary to carry out an iteration, phase, sub-project or project. The purpose is to provide a clear understanding of the way the project must deliver, and the approach and performing organization needed to do it.

This work includes:

- Build Project Organizational Unit Work Plans
 - Build the work plans for a project organizational unit.
- Select Supplier
 - Select suppliers and negotiate their commitments to deliver to the project, should project execution be confirmed by the project sponsor.
- Integrate Project Organizational Unit Work Plans
 - Reconcile work plans that have been built in parallel by multiple project organizational units.
- Finalize Plans for Agreement
 - Define the project management system requirements and consolidate the elements of the project plans that are needed to finalize the proposed sponsor agreement.

Starting

The goal of these activities is to expand the project plans to an operational level and get project execution underway. The purpose is to successfully begin an iteration, phase, sub-project or project by ensuring that the various plans are at a sufficient level of detail to control the execution of the project and the necessary resources are in place.

This work includes:

- Initiate Phase
 - Enable the project to start.



- Implement Project Management System
 - Put the project management system in place.
- Expand Work Plans
 - Put work plans in place that will allow activities to be assigned and project progress to be tracked.
- Obtain Staff
 - Obtain commitments from staff providers (e.g., suppliers, delivery organization entities, sponsor, etc.) to provide project staff members, when the staff is not already on board.
- Start Staff
 - Ensure that the staff is prepared to do productive work.
- Start Supplier
 - Successfully fulfill mutual obligations defined in the supplier agreement to ensure that productive work is started.

Delivering

The goal of these activities is to perform the project work, such as refining the plan for the next set of planned work, accepting deliverables from the supplier, handing off deliverables to the sponsor, and assessing the accomplishments of the project to date. The purpose is to perform project work, anticipate deliveries and assess accomplishments according to the agreement and plans in place, according to the established standards and processes.

This work includes:

- Initiating
 - Confirm the current scope and kick-off the associated work effort.
- Perform Project Work
 - This activity is a placeholder for the actual work to be done to deliver the project. The content for this work comes from the technical methods.
- Accepting Deliveries
 - Receive, validate and accept deliverables from suppliers.
- Handling Deliveries
 - Ensure that deliverables are ready, and track their release through formal acceptance.
- Manage Acceptance
 - Obtain sponsor's acceptance promptly.

Monitoring

The goal of these activities is to perform any on-going work necessary to track and report on progress, as well as make periodic updates to key measures of project health. The purpose is to ensure that the project is progressing as planned, and will likely continue to do so.

This work includes:

- Track and Control Progress
 - Keep project progress consistent with the project schedule.
- Assess Estimating Basis
 - Assess estimating basis and revise plans accordingly.
- Hold Internal Communication Meeting
 - Disseminate information internally, gather information, and determine appropriate actions.
- Conduct Supplier Review
 - Assure compliance and/or the health of the supplier's sub-project.
- Participate in Audit or Review
 - Contribute to making an audit or review effective.
- Reconcile Financial Data
 - Reconcile business with project financial data and improve forecasts.
- Report Project Status
 - Make or validate decisions regarding project management with the sponsor and functional management.
- Handle In-scope Request
 - Analyze the request to determine if it conforms with the scope defined in the agreement for the related activity and, if so, plan and assign the requested work.
- Continuously Assess Risks
 - Regularly identify new risks, assess existing risk evolution and mitigation plan effectiveness. Update the Risk Management Plan and other plans accordingly.
- Continuously Assess Project Health
 - Continuously evaluate project health and determine corrective actions.

Handling Exceptions

These activities are intended to resolve exceptions that will occur during the life of the project. They respond to unplanned project events, therefore cannot be scheduled in advance. The purpose is to resolve the different types of exceptions or other unplanned events that may occur during the life of a project and address these various types of events in order to keep the project under control.

This work includes:

- Handle Issues
 - Monitor issue resolution.
- Handle Actions
 - Ensure completion of actions.

- Analyze Situation
 - Investigate a potentially adverse situation in order to resolve it.
- Handle Compliance Incident
 - Record the situation, determine actions to prevent a recurrence, update the plans in accordance with the compliance incident management procedure applicable to the project.
- Handle Change Request
 - Resolve a change request.
- Handle Controversial Defect
 - Resolve findings for which immediate agreement about the impact and the corrective actions cannot be reached.
- React to Risk Occurrence
 - Take the necessary actions to minimize any adverse consequences of a risk when it occurs.

Closing

The goal of these activities is to perform the necessary tasks to properly close out a project phase or the project itself. The purpose is to ensure that all close activities occur, including:

- Release of resources (both staff and suppliers)
- Administrative close out of agreements
- Evaluation of feedback (from stakeholders and team members)
- Collection of lessons learned
- Harvesting of intellectual capital
- Collection of any required project measurements

Also ensure an orderly closure for team members who are finishing their work and an optimized reconfiguration of the remaining project team and resources.

This work includes:

- Release Staff
 - Plan an orderly closure for team members who have finished their work and ensure an optimized reconfiguration of remaining project team.
- Release Supplier
 - Close out the supplier agreement.
- Manage End of Project
 - End the project properly and in an orderly fashion.

► Work Products



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Fundamentals of Project Management - Q
 - WWPMM
 - WWPMM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Fundamentals of Project Management

WWPMM

Worldwide Project Management Method (WWPMM) describes the way we manage projects in IBM. WWPMM is sponsored by the Project Management Center of Excellence to support a corporate action directing us to design and implement a single, common project management method for IBM projects worldwide.

It is the project manager's responsibility to customize the project management (PM) methods, within the constraints of the PM policy, to suit each particular project.



- **Practices** group the tasks, work products, and guidance needed to support a particular area of knowledge.
- **Activities** arrange the tasks defined in the PM practices into a series of executable steps designed to meet particular project management goals or in response to particular project management situations.
- **Work Products** are the verifiable outcomes that are used to manage projects.

Click each tab to learn more.

► Practices

► Activities

▼ Work Products

The WWPMM PM work products are the result of an analysis of the "verifiable outcomes" that are used to manage projects. Each work product has a primary association with a practice.

List of the work products by practice

- Change Management
 - Change Management Plan
 - Change Request
- Communications Management
 - Communications Management Plan
 - Correspondence Log
 - Individual Status Report
 - Meeting Documentation
 - Project Status Report
- Event Management
 - Action Log
 - Compliance Incident Log
 - Event Log
 - Issue Log
 - Root Cause Analysis Documentation
- Financial Management
 - Expenditure Log
 - Financial Forecast
 - Financial Plan
 - Financial Ledger
- Human Resource Management
 - Asset Inventory
 - Contact List
 - Human Resource Plan
 - Organizational Breakdown Structure (OBS)
 - Project Resource Assessment
 - Staff List
 - Staff Schedule
 - Team Charter
- Quality Management
 - Project Evaluation Report
 - Project Management System Summary
 - Project Procedures Description
 - Project Quality Plan
 - Quality Review Documentation
- Risk Management
 - Risk Log
 - Risk Management Plan
- Schedule Management
 - Estimating Management Plan
 - Project Management Schedule
 - Work Breakdown Structure (WBS)
 - Work Product List
- Scope Management
 - Deliverable Definition
 - Product Breakdown Structure (PBS)
 - Project Charter
 - Project Definition

- Sponsor Agreement Management
 - Agreement
 - Delivery Control Documentation
 - Findings Log
 - Project Decision Structure
- Supplier Management
 - Supplier Agreement
 - Supplier Evaluation Report
 - Supplier Selection Report
 - Supplier Status Report
- Supplemental Work Products (Work products from other methods that are used in some capacity by WWPMM)
 - Benefit Realization Plan
 - Business Case
 - Client Value Proposition
 - Client Value Realization Conversation
 - Conditions of Satisfaction
 - Customer Satisfaction Assessment
 - Estimating Considerations Checklist
 - Estimation Report
 - Learning Review
 - Lessons Learned
 - Solution Framework
 - Team Orientation Package
 - Technical Environment Assessment
 - Technical Environment Plan

Check with your organization for templates associated with each of these work products. WWPMM provides a set of templates that can be customized for your project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Fundamentals of Project Management - Q
 - WWPMM
 - WWPMM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Fundamentals of Project Management

What Is a Work Unit?

WWPMM defines **work units** as portions of the work to be done that have certain common properties and therefore are appropriate to group and assign to one subproject or project organizational unit. Work units are used in early definition stages to help organize and construct the work breakdown structure (WBS).

Development of a system test plan is an example of a work unit assigned to the test support organization. The creation of user information is a work unit assigned to the information development organization.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Fundamentals of Project Management - Q
 - WWPMM
 - WWPMM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Fundamentals of Project Management

The Project Management System

One of the project manager's primary responsibilities at the beginning of a project is to establish the project management system. WWPMM defines the **project management system** as the management system for a project. It includes processes, resources, roles, and responsibilities. It is documented as a collection of plans, procedures, and records that define and support the way the management of the project operates.



Implementing an effective project management system for a project entails many specific duties and responsibilities for you as the project manager.

You are responsible for organizing the project, providing project documentation, and developing procedures.

The project management system of a project comprises the following items:

- Project management resources and tools
- Plans that describe the work to be performed and how the project will operate
- Procedures to ensure that key tasks are performed in a systematic and visible manner
- Records that the project manager uses to control status and events
- Project management activities that are used to plan, control, and react to day-to-day situations

The project management system should also reflect the policies and business environments of both the sponsoring and delivery organizations.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Fundamentals of Project Management - Q
 - WWPM
 - WWPM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- 3: Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 4: Team Management
- 5: Identify and Validate Requirements
- 6: Create Decomposition Structures
- 7: Risk Management
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review

Preferences

Fundamentals of Project Management

The Project Management Knowledge Network

You would not manage a project 10 years from now the same way you would manage a project today. Just as you develop in your personal life, you should always be looking for ways to manage your projects more efficiently. One way to do this is to reuse the lessons learned from other project managers.

The Project Management Knowledge Network (PMKN) can be a useful tool for you as a project manager. It can help you in many ways, including:

- Using the PMKN to leverage the knowledge and experiences gained by other project managers. Research has shown that up to 15% of a project's cost can be avoided with proper use of intellectual capital.
- Exploiting this knowledge to help reduce project risk, complete deliverables on or ahead of schedule, and increase the productivity of the project team.

You can also help other project managers learn from your experience by giving the PMKN the knowledge acquired in your projects. This supports current and future projects and also establishes your project management credentials.

Use the following steps to access lessons learned assets in the PMKN through IBM Rational Asset Manager (iRAM):

1. Click this link to access [iRAM](#).
 2. Log in to iRAM.
 3. Select the **Assets** tab.
 4. Click **View more** in the Category filter and select the **PMKN Schema** category.
 5. Refine your search by clicking the appropriate links in the **120 Lessons Learned** schema.
- Please note that the PMKN iRAM repository will be discontinued during 2017. Information on how to locate assets in the replacement repository will be found on this [wiki page](#).



Project Management Orientation

- Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Fundamentals of Project Management - Q
 - WWPMM
 - WWPMM Work Unit
 - Project Management System
 - Project Management Knowledge Network
 - Fundamentals of Project Management - Q
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check

3: Team Management

- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Fundamentals of Project Management

Question 2

Which of the following statements is true about work units? (Select all that apply.)

- A. Work units are used to determine resource plans in large programs.
- B. Work units are used in early definition stages to help organize and construct the work breakdown structure.
- C. Work units are appropriate to group into subprojects when they have similar characteristics.
- D. Work units make the work breakdown structure cumbersome to use.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
 - Project Phases
- Managing Projects in Different Environments
 - Customers and Sponsors
 - Major Phases in IPD
 - Major Phases in CRM
 - Activities in WWPMM
 - Project Phases - Question
- Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

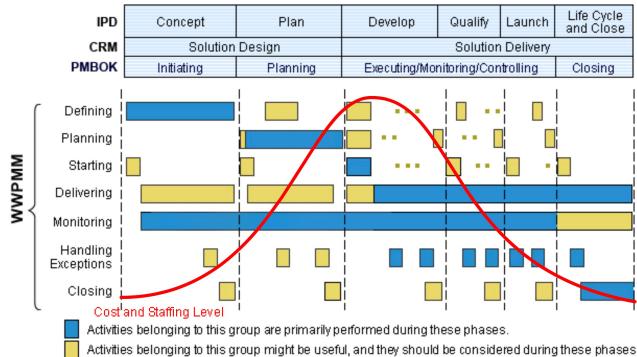
Project Phases

Managing Projects in Different Environments

Every project has a definite start and finish. Projects are usually divided into phases; the phases comprise the life cycle of the project.

Phases help you to reduce the risk on your project.

This figure shows the phases in the life cycle of a project in the environments in which we are most interested: Integrated Product Development (IPD), Customer Relationship Management (CRM), PMBOK, and WWPMM.



Different organizations use different life cycles because of their particular areas of emphasis, as follows:

- **IPD business model.** In this model, the IBM delivery organization might have a relationship with the Integrated Portfolio Management Team (IPMT), as the project sponsor, or with an external customer.
- **CRM business model.** In this model, the IBM delivery organization has relationships with both an opportunity owner within IBM and an external customer.
- **WWPMM.** In this method, the IBM delivery organization can have relationships in either the IPD or the CRM business model.
- **Major Process Groups in PMBOK.** The major process groups in PMBOK are Initiating, Planning, Executing, Monitoring and Controlling, and Closing. These are the groups used by PMI. The activities within these groups are similar to those in WWPMM. Both are oriented to establishing and enforcing a disciplined approach to project management that will help IBM succeed on projects. A mapping document is available on the WWPMM Web site. The purpose of this document is to cross-reference the project management components, which include practices, activities, and supporting guidance, defined in WWPMM to equivalent processes defined by Project Management Institute in PMBOK.

The cost and staffing level curve in the figure shows how resources are used in the various phases of a project. The curve shows that resource usage normally starts at a low level during the initial phase, increases quickly during the intermediate phases and then decreases during the final phase. The specific rate of increase or decrease, and the peak usage vary from project to project. However, most projects follow this curve.

Project Phases Diagram

Detailed Description of Project Phases Diagram

Diagram shows project phases for

- IPD:
 - Concept
 - Plan
 - Develop
 - Qualify
 - Launch
 - Life Cycle and Close
- CRM:
 - Solution Design (maps to IPD Concept and Plan)
 - Solution Delivery (maps to IPD Develop, Qualify, Launch, and Life Cycle and Close)
- PMBOK:
 - Initiating (maps to IPD Concept)
 - Planning (maps to IPD Plan)
 - Executing/Monitoring/Controlling (maps to IPD Develop, Qualify, and Launch)
 - Closing (maps to IPD Life Cycle and Close)

The WWPMM activities and their mapping to project phases are shown across the diagram. Here is the list with the mapping to IPD phases:

- Defining: Primarily performed during Concept; might also be useful during Plan, at the beginning of Develop, and during Qualify and Launch.
- Planning: Primarily performed during Plan; might also be useful during Plan, at the beginning and end of Develop, and at the end of Qualify and Launch.
- Starting: Primarily performed at the beginning of Develop; might also be useful at the beginning of all the other phases.
- Delivering: Primarily performed during Develop, Qualify, Launch, and Life Cycle and Close, might also be useful during Concept and Plan.
- Monitoring: Primarily performed during Concept, Plan, Develop, Qualify, and Launch; might also be useful during Life Cycle and Close.
- Handling Exceptions: Primarily performed during Develop, Qualify, Launch, and Life Cycle and Close; might also be useful during Concept and Plan.
- Closing: Primarily performed during Life Cycle and Close; might also be useful at the end of all the other phases.

The cost and staffing level curve shows that resource usage normally starts at a low level during the initial phase (IPD Concept), increases quickly during the intermediate phases, reaches peak during IPD Develop, and then decreases during the final phase (IPD Life Cycle and Close).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- 3: Project Phases
 - Managing Projects in Different Environments
 - Customers and Sponsors
 - Major Phases in IPD
 - Major Phases in CRM
 - Activities in WWPMM
 - Project Phases - Question
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Team Management
- 5: Identify and Validate Requirements
- 6: Create Decomposition Structures
- 7: Risk Management
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout

Preferences

Project Phases

Customers and Sponsors

A **customer** is the recipient of a product or service provided by the delivery organization. The customer might be the ultimate consumer, user, beneficiary, or purchaser (ISO 8402). The customer might also be the sponsor.

A **sponsor** is an individual or an organization that has the authority to perform, delegate, or ensure completion of the following project commitments:

- Formalization of an agreement with the delivery organization
- Approval to proceed with the start of the project or of a project phase
- Acceptance of the deliverables from the project
- Spending for the cost or price, or both, of the project as specified in the agreement

The sponsor might be internal (such as the Integrated Portfolio Management Team) or external (such as a commissioning body) to IBM.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- 3: Project Phases
 - Managing Projects in Different Environments
 - Customers and Sponsors
- Major Phases in IPD
 - Major Phases in CRM
 - Activities in WWPMM
 - Project Phases - Question
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Project Phases

Major Phases in IPD

The Integrated Product Development (IPD) process flow consists of a series of phases that are triggered by previously completed market management activities that select market segments and offerings. The major phases in IPD are concept, plan, develop/qualify/launch, and life cycle/close. In many cases, the lines between the IPD phases are not entirely crisp and clear. Some activities might straddle several phases. Although closeout is not a formal IPD phase, it has been highlighted at the end of the life cycle phase to be more consistent with the CRM and WWPMM phases.

- **Concept and Plan.** During these phases, a selected opportunity is developed into an offering proposal that is presented to the Integrated Portfolio Management Team (IPMT) as the project sponsor. A Decision Checkpoint (DCP) contract must be signed to proceed to the develop/qualify/launch phase. Product development applies to asset-based projects targeted for multiple customers (mass production). There are always more ideas and product marketing opportunities than IBM can effectively manufacture.
- **Develop/Qualify/Launch.** During this phase, the product or offering is developed and launched in the marketplace.
- **Life Cycle/Close.** During this phase, the product or offering runs its course in the marketplace and is finally withdrawn.

Decision checkpoints, or approvals, are structured project reviews with specific entry and exit criteria that are used to measure the progress of a project.

IPD funding is approved on a phase-by-phase basis, based on a number of considerations, such as the business case and risk assessment. The key decision point is at the end of the plan phase, when the DCP contract is signed.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- 3: Project Phases
 - Managing Projects in Different Environments
 - Customers and Sponsors
 - Major Phases in IPD
 - Major Phases in CRM
- Activities in WWPMM
- Project Phases - Question
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Project Phases

Major Phases in CRM

The two major phases of the CRM framework are solution design and solution delivery.

- **Solution design.** During this phase, the selected opportunity is developed into a proposal, which is presented to the customer.
- **Solution delivery.** This phase starts when a contract is signed by the customer.

When suppliers are used on a project, specifications are provided to the supplier candidates. They, in turn, respond with proposals to the IBM project team. Before the final customer contract is signed, a conditional supplier contract must be in place. This conditional supplier contract is confirmed when the customer contract is signed.

Decision checkpoints, or approvals, take place at specific points in the CRM life cycle to ensure that the project is progressing as planned.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- 3: Project Phases
 - Managing Projects in Different Environments
 - Customers and Sponsors
 - Major Phases in IPD
 - Major Phases in CRM
- Activities in WWPMM
- Project Phases - Question
- Behaviors of a Successful Project Manager
 - Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Project Phases

Activities in WWPMM

Activities within the project management method are arranged as follows:

- **Defining:** Gain a thorough understanding of the sponsor's business needs, and outline what will be delivered to meet those needs, and an approach for how to deliver it. Also includes defining the context and setting objectives of the project.
- **Planning:** Outline plans describing the means that will be necessary to carry out an iteration, phase, sub-project, or project.
- **Starting:** Expand the project plans to an operational level and get project execution underway.
- **Delivering:** Perform the project work, such as refining the plan for the next set of planned work, accepting deliverables from the supplier, handing off deliverables to the sponsor, and assessing the accomplishments of the project to date.
- **Monitoring:** Perform any on-going work necessary to track and report on progress, as well as make periodic updates to key measures of project health.
- **Handling Exceptions:** The activities in this group are intended to resolve exceptions that will occur during the life of the project. These activities respond to unplanned project events, therefore cannot be scheduled in advance.
- **Closing:** Perform the necessary tasks to properly close out a project phase or the project itself.

A project usually consists of a series of phases, known as the project life cycle, and these activities can be applied to each phase individually or to a set of multiple phases. Therefore, these activities do not necessarily correspond to the phases of the project life cycle. For example, delivering and closing activities may be completed in the design phase of a project, followed by planning activities for the development phase.

Recursively, during the life of a program and that of projects, multiples of these activities can be occurring and reoccurring concurrently:

- As programs are defined and planned, they identify projects which, in turn, are defined, planned, then delivered, controlled, and closed.
- As the programs are delivered and controlled, periodic reassessment of goals can lead to identification of new projects to be defined, planned, delivered, and closed, as well as to closure of some projects that no longer provide value.
- As a project is delivered, it is usual that plans are refined at the end of some phases to prepare for the delivery of the next phases.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- 3: Project Phases
 - Managing Projects in Different Environments
 - Customers and Sponsors
 - Major Phases in IPD
 - Major Phases in CRM
 - Activities in WWPMM
- 4: Project Phases - Question
- Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Project Phases

Question

Test your recall. Match the definition to the WWPMM Activity:

A. Detailed work and risk management plans are developed.

Defining

B. Project evaluation report including lessons learned is produced.

Defining

C. Scope of the project is established.

Defining

D. Project development and delivery work is performed.

Defining

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- Project Phases
- Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Define the Project

Behaviors of a Successful Project Manager

Think about successful project managers you have worked for in the past. What did they do that made them successful? More than likely, they possessed the following behaviors in four areas.

Team Building

A successful project manager should be sensitive to people and situations. A project manager should be able to facilitate, coach, provide constructive criticism when required, have the ability to build a team, delegate well, be sensitive to wants and needs, and offer praise when appropriate.

Roll your mouse over each team-building behavior to read its definition:

- Delegation
- Team development
- Team member facilitation
- Feedback to team members
- Recognizing performance

Communication

A successful project manager should be able to communicate well, be organized, have the ability to listen, think systematically, and maintain contact with all stakeholders and team members on a project.

Roll your mouse over each communication behavior to read its definition:

- Systematic thinking and planning
- Political awareness
- Relations with functional managers

Project Goal Setting

A successful project manager should be proactive, willing to try new ideas, able to persevere, be goal oriented, able to prioritize, be innovative, and have the ability to plan.

Roll your mouse over each goal-setting behavior to read its definition:

- Clarification of goals
- Innovation and creativity
- Participative problem solving
- Standards of performance
- Goal pressure

Leadership

A successful project manager should be honest; able to motivate; and be realistic, assertive, decisive, self-confident, enthusiastic, energetic, supportive, and always in pursuit of excellence.

Roll your mouse over each leadership behavior to read its definition:

- Long-range perspective
- Risk-taking
- Strategic inquiry
- Assertiveness
- Drive



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Management Definitions
 - Fundamentals of Project Management
- 3: Project Phases
- Behaviors of a Successful Project Manager
 - Behaviors of a Successful Project Manager - Qu
- Project Stakeholders
- Project Charter
- Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 4: Team Management
- 5: Identify and Validate Requirements
- 6: Create Decomposition Structures
- 7: Risk Management
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout
- 14: Project Management Tool Suite
- 15: Self-Assessment and Final Exam

Behaviors of a Successful Project Manager

Question

Select the key behaviors of a successful project manager. (Select all that apply.)

- A. Long-range perspective
- B. Risk-taking, venturesomeness
- C. Stubbornness
- D. Innovation and creativity
- E. Participative problem solving
- F. Reluctance to share information
- G. Strategic inquiry

Submit Answer

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Define the Project

Project Stakeholders

You will learn later on that one of the key reasons for project failure is that stakeholders lose their commitment to the project. But who are the stakeholders, and why is it difficult to manage them?

A stakeholder in a project is any individual or organization that is actively involved in the project or whose interests might be affected, either positively or negatively, as a result of project execution or successful project completion. Identifying and communicating with the stakeholders is an important responsibility of the project manager.

There is an inherent difficulty in being caught between the sponsor and IBM. Spending all the money in the budget for a fixed-price contract might result in a happy sponsor, but might not meet IBM goals. The opposite can occur with a time-and-materials contract.

Most projects have a number of stakeholders, and they each have their own objectives to meet on the project. The project manager must be aware of each of these stakeholders and their respective objectives. Using this information, the project manager must ensure that what is done on the project is consistent first with the project requirements and then with the stakeholders' objectives. Ideally, the objectives of the different stakeholders are closely aligned. If not, a series of negotiations might be required to align the objectives.

An IBM project manager must be many things to many people. The role of the project manager is to serve as the single point of contact for all matters relating to the project and to continuously balance project scope, cost, and schedule. This must be done while interfacing with a number of people and organizations within IBM, with the customer, and with external or internal suppliers.



The major objective is to meet all project commitments and deliver a quality product on time and within the agreed budget.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
- 3: Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Team Management
- 5: Identify and Validate Requirements
- 6: Create Decomposition Structures
- 7: Risk Management
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout
- 14: Project Management Tool Suite
- 15: Self-Assessment and Final Exam

Preferences

Define the Project

Project Charter

What is the Project Charter?

The Project Charter is usually the first piece of documentation produced for a project. Its purpose is to make the project "official" and should be written by the sponsor. If a Project Charter is missing or poorly written, it can lead to ambiguity about the project objectives, scope, or solution. This could lead to project cancellation or cost and time overruns. If the Project Charter is not well-written, it is your responsibility as the Project Manager to go back to the project sponsor and help them create an adequate charter.

A Project Charter is a document that formalizes the request from a sponsor for responding to a business need. It is a clear statement of project intent, and it provides a preliminary delineation of roles and responsibilities. The Project Charter is issued by the sponsor, and it outlines the project objectives, identifies the main stakeholders, and defines the authority of the project manager. It serves as a reference of authority for the future of the project.

The Project Charter sets boundaries for the scope of the project. It formally recognizes the existence of a project. It should be issued by the project sponsor, and at a level appropriate to the needs of the project. It provides the project manager with the authority to apply organizational resources to project activities.

The Project Charter is usually a short document that refers to some other more detailed documents, such as a New Offering Request or a Request for Proposal.

Some project managers have never had a Project Charter, or if they did, they might have known it by some other name. Though in IPD, this document is known as the Project Charter, in CRM, it is known as the Project Definition Report. Both IPD and CRM require this document as part of the project management process. If the sponsor does not follow either process, it is good project management practice to insist upon the creation of a Project Charter. As a last resort, if you as the project manager cannot get someone in authority to write the Project Charter, it might be advantageous for you to write it and submit it to the sponsor for approval.

The Project Charter is an important tool for establishing the authority assigned to the project manager, especially in a matrix environment. It is considered industry best practice, and it is a defined WWPMM work product.

Who Creates a Project Charter?

Project Charters are becoming more common in all kinds of project environments. Many organizations generate these documents in letter form. Within IPD, for example, the Project Charter is issued by the Integrated Portfolio Management Team (IPMT), which is the project sponsor. Within CRM, the Project Charter is written by the project sponsor. You need to understand the process for creating Project Charters within your business unit.

The purpose of the Project Charter is to document:

- 
- The reasons for undertaking the project
- The objectives and constraints of the project
- The directions concerning the solution
- The identities of the main stakeholders



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
- Project Stakeholders
- Project Charter
- Project Charter - Question
- Project Definition
 - WWPMM
 - Mentor
- Case Study
 - Self-Check
- Team Management
- Identify and Validate Requirements
- Create Decomposition Structures
- Risk Management
- Project Estimates
- Project Schedules
- Change Management
- Project Control and Delivery
- Project Management Review
- Project Closeout
- Project Management Tool Suite
- Self-Assessment and Final Exam

Preferences

Project Charter

Question

What is a purpose of the Project Charter? (Select all that apply.)

- A. It formalizes the detailed project budget and schedule.
- B. It is a clear statement of project intent.
- C. It provides a preliminary delineation of roles and responsibilities.
- D. It is created by the project team.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
- Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Define the Project

Project Definition

What is the Project Definition?

A Project Definition document is a WWPMM work product that helps the project manager determine the boundaries of the project. In other words, it defines what the project will and will not encompass. WWPMM defines the Project Definition as the document that describes the shape of the project.



The Project Definition document includes the objectives and scope, the stakeholders and the proposed organization, the responsibilities, and the major risks associated with the project.

The Project Definition is written by the project manager early in the project life cycle and forces the project team to identify the critical issues before trying to solve the customer's problems. This prevents the team from wasting effort. Key items identified in the Project Definition are helpful in establishing the project's preliminary baseline. The Project Definition is not a Project Charter or a customer contract.

The purpose of Project Definition is to:

- Formalize the understanding of the project's objectives by the delivery organization
- Provide the plan elements in order to control the scope defining activities
- Give an initial description of the project framework for the planning activities
- Provide the plan elements in order to control project planning activities
- Gather the fundamental characteristics of the project in a unique document

WWPMM Project Definition

The Project Definition work product contains the following components:

- Project objectives
- Project background
- Target solution and overall approach
- Project scope
- Planning framework
- Organization
- Financial

For assistance with creating a Project Definition, refer to the WWPMM Project Definition work product. This can be found, along with descriptions for all WWPMM work products and templates, on the [WWPMM Web site](#).

Creating the Project Definition

You should create an initial version of the Project Definition after assessing the project goals and objectives. Do this before refining the solution to the level that is appropriate for planning. The initial version of the Project Definition contains the objectives and the plan for the defining activities.

To do this, you must review all existing project documentation including documents and correspondence that have accumulated. Pay special attention to the Project Charter as one of the primary inputs. You must also meet with the main stakeholders identified in the charter and obtain their view of the target solution and project scope, paying special attention to their needs, and the risks they identify. Then, based on what you have learned, use the WWPMM template for the Project Definition and fill in the required information.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
- Project Definition - Question
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Definition

Question

Which of the following are contained in the framework for WWPMM Project Definition? (Select all that apply.)

- A. Project scope
- B. Project charter
- C. Project objectives
- D. Customer contract
- E. Target solution and overall approach

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

WWPMM**WWPMM**

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).

**WWPMM Practices**

- Human Resource Management
- Scope Management

WWPMM Activities

- Define Target Solution
- Describe Overall Approach
- Shape Project
- Understand Objectives and Plan Defining Activities

WWPMM Work Products

- Organizational Breakdown Structure (OBS)
- Project Charter
- Project Decision Structure
- Project Definition



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
- Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Define the Project

Mentor



Welcome

Hi! I'm so pleased to be your mentor. I look forward to helping you with your new project for Rest Easy Hotels. I'm sure that we will both learn a lot as we go through this project together.

Projects Are Like Small Businesses

One thing that I have learned is that running a project is like running a small business. In both projects and small businesses, there is a fine line between being successful and profitable, and being unsuccessful and bankrupt. If a business fails, people will be out of work. A business manager must ensure the business turns a profit so it can continue serving its clients. Similarly, a project manager must take ownership of the financial side of a project to make the project a financial success.

Both projects and small businesses consume resources, such as staff, equipment, and facilities.

Projects, like small businesses, have stakeholders, or people who have an interest in the outcome of the effort. These people might have financial interests, like the allocation of equity capital, or they might have a stake in defining the objectives of the business or project. Most importantly, they demand returns on capital investment or specific results.

A small business carefully tracks its costs, schedules, and quality. Small businesses must always watch the bottom line when it comes to financial targets. The small business owner must work within a budget and control costs. It is imperative to a small business that it generate revenue and profit to ensure a positive cash flow. The same tracking is a necessary part of project management.

Benefits of a Project Charter

I always have a Project Charter, the major benefits of a Project Charter are that it:

- Describes the problem to be solved
- Provides a vision of how the business need will be resolved
- Describes the elements of the solution expected by the sponsor from the delivery organization
- Identifies the main stakeholders in the various organizations involved in the project

Impact of Not Having a Project Charter

Lack of a Project Charter or a poorly written Project Charter often leads to an unclear need that is likely to give unstable direction to the project; possible ambiguity about the project objectives and scope; possible ambiguity concerning the solution; and possible lack of identifying an important stakeholder for the project.

These are serious concerns that you as the project manager must ensure are properly addressed by insisting that a sound Project Charter is established at the start of your project.

Benefits of a Project Definition



Using the Project Definition enables the project manager to identify the project requirements from a broader perspective, instead of focusing solely on deliverables. This ensures a clarity of scope before detailed planning begins.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Define the Project

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

In this assignment, you will be starting the Project Definition document for the Rest Easy Hotel training project.

To complete the assignment:

1. Read the attached file, Rest Easy Charter, to better understand the project.
2. Save the attached file, Project Definition Template, to the directory of your choice. This is the WWPMM Project Definition Template.
3. Based on the information in the Rest Easy Project Charter, complete "Project Objectives" and "Project Background" sections of the Project Definition Template.



Rest Easy Charter



Project Definition
Template



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Case Study Solution
- Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

After you complete this assignment, check your work on the assignment by comparing it with the solution in the attached file.



Module 2 Project Definition Solution



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Define the Project

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check

 Question 1

- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- Question 7
- Question 8
- Question 9
- Question 10

- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

[Preferences](#)

Self-Check

Self-Check Question 1 of 10

A project is a temporary endeavor undertaken to produce a unique product or service.

- A. True
 B. False

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- Question 1
- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- Question 7
- Question 8
- Question 9
- Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 2 of 10

What are the characteristics of a subproject?

- A. A set of work units assigned to a single project organizational unit to divide the project into more manageable components
- B. A piece of ongoing administrative work
- C. A temporary endeavor undertaken to produce a unique product or service
- D. Both A and C

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 3 of 10

During which phases are resource usages normally at a low level?

- A. Initial
- B. Intermediate
- C. Final
- D. Both A and C

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 4 of 10

What are some of the project management activities in WWPMM?

- A. Identifying, planning, delivering, closing
- B. Defining, planning, delivering, monitoring, closing
- C. Concept, plan, develop, launch
- D. Defining, planning, monitoring, launching

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

[Preferences](#)

Self-Check

Question 5 of 10

Put the following project documents in the order in which they are usually created.

A. Project charter

B. Detailed project plans

C. Project definition document

D. SOW

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 6 of 10

A project manager has which of the following responsibilities? (Select all that apply.)

- A. Organizing the project
- B. Providing project documentation
- C. Running all project meetings
- D. Developing procedures

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 7 of 10

What are behaviors of a successful project manager? (Select all that apply.)

- A. Be consistent in rejecting requested changes to the project.
- B. Be organized, have the ability to listen, and think systematically.
- C. Be realistic, assertive, decisive, self-confident, enthusiastic, and energetic.
- D. Be able to build a team, delegate well, and be sensitive to wants and needs.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 8 of 10

What is included in the Project Charter? (Select all that apply.)

- A. Detailed schedule
- B. Reasons for undertaking the project
- C. Project objectives and constraints
- D. Final cost estimates

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 9 of 10

Which of the following statements hold true for both a small business and a project? (Select all that apply.)

- A. Both projects and small businesses consume resources, such as staff, equipment, and facilities.
- B. Both projects and small businesses have budgets less than \$100,000.
- C. Both projects and small businesses have stakeholders or people who have an interest in the outcome of the effort.
- D. Both projects and small business have a short life cycle.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
 - Fast Points
 - Project Management Terminology
 - Project Phases
 - Behaviors of a Successful Project Manager
 - Project Stakeholders
 - Project Charter
 - Project Definition
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 10 of 10

What is the role of a project manager?

- A. To serve as the single point of contact for all matters relating to the project
- B. To continuously balance project scope, cost, and schedule
- C. To ensure that the salesperson responsible for the account gets a commission
- D. Both A and B

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 3 Objectives

This module enables you to:

- Organize a team
- Define the team's technical environment
- Define how the team members will communicate with each other
- Create a team charter
- Create a communications management plan
- List the Seven Keys to Success™
- Determine whether the project team is high performing

This module takes approximately 1 hour 20 minutes to complete.



Project Management Orientation

<input checked="" type="checkbox"/> 1: Getting Started
<input checked="" type="checkbox"/> 2: Define the Project
<input checked="" type="checkbox"/> 3: Team Management
<input checked="" type="checkbox"/> Fast Points
<input type="checkbox"/> Organize the Project Team
<input type="checkbox"/> Build the Team
<input type="checkbox"/> Ensure Open Communication
<input type="checkbox"/> Seven Keys to Success
<input type="checkbox"/> Define and Maintain the Technical Environment
<input type="checkbox"/> Seven Keys
<input type="checkbox"/> WWPMM
<input type="checkbox"/> Mentor
<input type="checkbox"/> Case Study
<input type="checkbox"/> Self-Check
<input type="checkbox"/> 4: Identify and Validate Requirements
<input type="checkbox"/> 5: Create Decomposition Structures
<input type="checkbox"/> 6: Risk Management
<input type="checkbox"/> 7: Project Estimates
<input type="checkbox"/> 8: Project Schedules
<input type="checkbox"/> 9: Change Management
<input type="checkbox"/> 10: Project Control and Delivery
<input type="checkbox"/> 11: Project Management Review
<input type="checkbox"/> 12: Project Closeout
<input type="checkbox"/> 13: Project Management Tool Suite
<input type="checkbox"/> 14: Self-Assessment and Final Exam

Preferences

Team Management

Fast Points

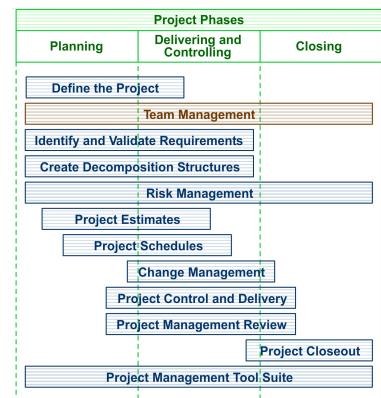
The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Team Management", which is covered throughout all the project phases: Planning, Delivering and Controlling phase, and the Closing phase.

As a project manager, you cannot meet all of your team commitments alone; you need a team of skilled people to help you develop, plan, and execute the delivery of the Rest Easy Hotel training.

At the beginning of a project, you define how the team will work together. You need to focus on three areas:

- Organizing the team
- Ensuring open communication
- Defining and maintaining the technical environment





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- Fast Points
- Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Team Management

Organize the Project Team

What Is a Team?

A team is a group of individuals working toward a common goal. Your team will include people from your organization, suppliers, clients, and the project sponsor, each of whom bring their own skills to the team.

As the project manager, you must ensure that the team members recognize the skills of the other team members and the ways in which team members depend on each other.

When a group of individuals truly becomes a team, they are committed to the team's values and objectives. They learn to work well together, they enjoy working together, and most importantly they produce the high-quality results that are key to a successful project.

Organization Types

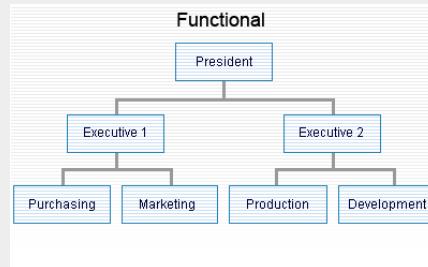
The type of organization you work in affects the project manager's ability to deliver a project successfully. The project manager must understand the challenges involved in managing a project within various organizational structures and must anticipate that over the life of a project the organizational structure might change. There are three types of organizational structures: functional, projectized, and matrix. Click each tab to read the corresponding description.

Functional Organizations

Functional Organizations

In a functional organization, the staff is grouped hierarchically by specialty. The following is a graphic of an OBS (Organizational Breakdown Structure) for a functional organization. This is also known as a conventional line organization.

In a functional organization, each employee has one supervisor. Functional organizations still have projects, but the cross-functional decisions are made by the functional management.



Projectized Organizations

Matrix Organizations



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- Fast Points
- Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Team Management

Organize the Project Team

What Is a Team?

A team is a group of individuals working toward a common goal. Your team will include people from your organization, suppliers, clients, and the project sponsor, each of whom bring their own skills to the team.

As the project manager, you must ensure that the team members recognize the skills of the other team members and the ways in which team members depend on each other.

When a group of individuals truly becomes a team, they are committed to the team's values and objectives. They learn to work well together, they enjoy working together, and most importantly they produce the high-quality results that are key to a successful project.

Organization Types

The type of organization you work in affects the project manager's ability to deliver a project successfully. The project manager must understand the challenges involved in managing a project within various organizational structures and must anticipate that over the life of a project the organizational structure might change. There are three types of organizational structures: functional, projectized, and matrix. Click each tab to read the corresponding description.

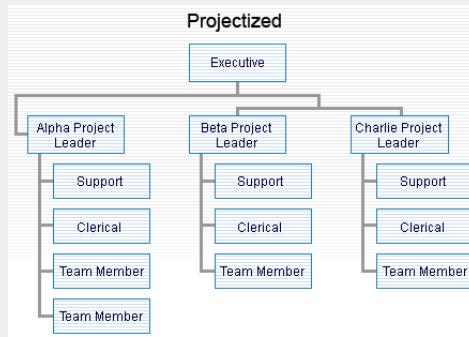
▶ Functional Organizations

▼ Projectized Organizations

Projectized Organizations

In a projectized organizational structure, the project manager has full authority to assign priorities and direct the work of individuals assigned to the project, as shown in the following graphic of an OBS (Organizational Breakdown Structure). The project manager controls the resources. They report directly to the project manager, not to a functional manager. Directing work is easier because there are no battles with functional managers.

The common problem with the projectized environment is that there is not enough work to justify having all the people dedicated to the project. Except for very large projects, few organizations have projectized structures because they are more expensive to operate and less efficient than some other types of organizational structures.



▶ Matrix Organizations



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- Fast Points
- Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Team Management

Organize the Project Team

What Is a Team?

A team is a group of individuals working toward a common goal. Your team will include people from your organization, suppliers, clients, and the project sponsor, each of whom bring their own skills to the team.

As the project manager, you must ensure that the team members recognize the skills of the other team members and the ways in which team members depend on each other.

When a group of individuals truly becomes a team, they are committed to the team's values and objectives. They learn to work well together, they enjoy working together, and most importantly they produce the high-quality results that are key to a successful project.

Organization Types

The type of organization you work in affects the project manager's ability to deliver a project successfully. The project manager must understand the challenges involved in managing a project within various organizational structures and must anticipate that over the life of a project the organizational structure might change. There are three types of organizational structures: functional, projectized, and matrix. Click each tab to read the corresponding description.

▶ Functional Organizations

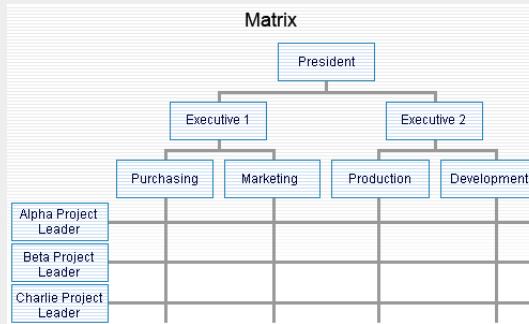
▶ Projectized Organizations

▼ Matrix Organizations

Matrix Organizations

A matrix organizational structure is a blend of functional and projectized organizations, as shown in the following graphic of an OBS (Organizational Breakdown Structure). In a matrix organizational structure, the project manager shares responsibility with the functional managers to assign priorities and direct the work of the people assigned to the project.

Team members on a matrix project often have mixed loyalty because they have two bosses: the project manager and their functional manager.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Organize the Project Team - Question
 - Working in a Matrix Organization
 - Tips for Making the Matrix Organization Work
 - How Organizational Structure Influences Project
 - Working in a Matrix Organization - Question
 - Team Charter
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Organize the Project Team

Question

In which type of organizational structure does the project manager control the resources and have full authority to assign priorities and direct the work of the individuals assigned to the project?

- A. Projectized organization
- B. Functional organization
- C. Matrix organization
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Organize the Project Team - Question
 - Working in a Matrix Organization
 - Tips for Making the Matrix Organization Work
 - How Organizational Structure Influences Projects
 - Working in a Matrix Organization - Question
 - Team Charter
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - Identify and Validate Requirements
 - Create Decomposition Structures
 - Risk Management
 - Project Estimates
 - Project Schedules
 - Change Management
 - Project Control and Delivery
 - Project Management Review
 - Project Closeout
 - Project Management Tool Suite
 - Self-Assessment and Final Exam

Preferences

Organize the Project Team

Working in a Matrix Organization

The Matrix Structure

The matrix organizational structure is the one that occurs most often in IBM. Because the emphasis of this structure is project-based, it must be understood by IBM project managers.

Matrix organizations evolved from the traditional management structure. Its multi-disciplinary team members are drawn from various line or functional units in a hierarchical organization.

Less anxiety exists about project termination because the project has been temporarily superimposed on the functional organization. At project completion, the functional organization remains intact.

Challenges

Matrix organizations are complex, and present certain challenges to the project manager. These challenges include:

- Authority and responsibilities of the project manager versus the functional manager
- Communication flows within the team, as well as to and from other groups

Matrix organizational structures affect the authority and responsibility of both the project manager and functional manager, the degree of communication within the project, and the communication flow.

Managing the Matrix



....matrix management is a charming form of management, full of variety and disorder.

Jack Meredith and Samuel J. Mantel, Jr., in: Project Management: A Managerial Approach

For you, the project manager, successful operation within the matrix structure depends on the attitudes, actions, and activities of the people involved. Having the following elements in the project can help ensure a more successful project:

- A Project Charter that assigns responsibility and authority to the project manager from the project sponsor
- A good working relationship between the project manager and functional managers
- An understanding that a project manager's job is accomplished primarily through the process of negotiation and leadership
- Project team members who must overcome confusion and split loyalties, and adapt to a two-boss situation
- Negotiation and leadership skills are essential for making the matrix work. In addition, communication is critical to success



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Organize the Project Team - Question
 - Working in a Matrix Organization
 - Tips for Making the Matrix Organization Work
 - How Organizational Structure Influences Projects
 - Working in a Matrix Organization - Question
 - Team Charter
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Organize the Project Team

Tips for Making the Matrix Organization Work

The following list describes a few of the project management techniques that will help you, the project manager, in a matrix organization.

- Have a Project Charter. This gives authority to the project team.
- Anticipate and channel conflict. You need to use appropriate leadership skills.
- Establish a clear project scope. You should define and enforce the scope of the project.
- Promote teamwork. You should use appropriate management practices.
- Document approvals. Documentation becomes essential to managing all aspects of the project.
- Engage in careful and continual project management planning.
- Plan globally and think locally. You need to keep the entire scope of the project in mind while being ready to act decisively on a day-to-day basis.
- Develop political awareness. This involves knowing which individuals are the influencers who can affect the project. It also involves knowing the goals of the stakeholders, both obvious and hidden. You should be aware of your own capabilities and those of your project team.
- Think about the projects you are assigned to. How well is each of these points practiced? If any of them are not being practiced, write a note to yourself on how you can improve your project in that area.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Organize the Project Team - Question
 - Working in a Matrix Organization
 - Tips for Making the Matrix Organization Work
 - How Organizational Structure Influences Projects
 - Working in a Matrix Organization - Question
 - Team Charter
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - 11: Project Management Review
 - 12: Project Closeout
 - 13: Project Management Tool Suite
 - 14: Self-Assessment and Final Exam

Preferences

Organize the Project Team

How Organizational Structure Influences Projects

You have been introduced to three types of organizational structures and how authority and responsibilities generally flow through each. The organizational structure has a significant impact on the project.



It is important to remember that the organizational structure often changes during the life of the project. The key issue is that the project manager needs sufficient authority to successfully execute the project. You cannot make the project commitments if you do not have the authority to make it happen. In all of your organizational planning ensure that you have all the authority you need, whether it comes from the organizational structure in the projectized organization or from the functional managers in the functional organization.

The following table illustrates how the levels of authority and responsibility differ between organizational structures. Note that in this table, moving from left to right, the authority of the project manager increases, as does the percentage of time dedicated to project management functions. In a weak matrix organization, the functional managers have more responsibility. In a strong matrix organization, the project manager has more responsibility. The functional managers are the providers of resources for the project and the project manager is the customer of the resource.

Project Characteristics	Functional Organization	Matrix Organization			Projectized Organization
		Weak	Balanced	Strong	
Project Manager's authority	Little or none	Limited	Low to moderate	Moderate to high	High to almost total
Percent of performing organization's personnel assigned full-time to project work	Virtually none	0-25%	15-60%	50-95%	85-100%
Project Manager's role	Part-time	Part-time	Full-time	Full-time	Full-time
Common titles for project manager's role	Project coordinator Project leader	Project manager Project officer	Project manager Program manager	Project manager Program manager	Project manager Program manager
Project management administrative staff	Part-time	Part-time	Part-time	Full-time	Full-time

Project Characteristics by Organization Type



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Organize the Project Team - Question
 - Working in a Matrix Organization
 - Tips for Making the Matrix Organization Work
 - How Organizational Structure Influences Project
 - Working in a Matrix Organization - Question
 - Team Charter
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - 11: Project Management Review
 - 12: Project Closeout
 - 13: Project Management Tool Suite
 - 14: Self-Assessment and Final Exam

Preferences

Organize the Project Team

Working in a Matrix Organization - Question

What are challenges of a matrix organization? (Select all that apply.)

- A. Communication flows within the team, as well as to and from other groups.
- B. Compensation is determined by the project manager instead of the functional manager.
- C. Authority and responsibilities of the project manager are not aligned with those of the functional manager.
- D. The project has higher priority than the functional work.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Organize the Project Team - Question
 - Working in a Matrix Organization
 - Tips for Making the Matrix Organization Work
 - How Organizational Structure Influences Projects
 - Working in a Matrix Organization - Question
 - Team Charter
- Build the Team
- Ensure Open Communication
- Seven Keys to Success
 - Define and Maintain the Technical Environment
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Organize the Project Team

Team Charter

Every team needs to agree on the team goals and how the team will work together to achieve those goals. One way to do this is to document the team guidelines and project ground rules. In WWPMM, these guidelines and ground rules are recorded in a document called the team charter.

The exercise of developing the team charter moves the team through the forming stage of group development into the storming, norming, and performing stages. Team members who join the team after the charter has been written must also understand and support it.

Team Charter

As the project manager, you must ensure that your team members are working together on the items that are important to you. The team charter helps you to do that by documenting the broad performance objectives, roles, responsibilities, and ground rules for the team, and the expectations for the project.

The team charter is divided into several sections:

- **Team performance objectives**

The team objectives and the expectations for the project are documented in this section.

- **Rules of behavior**

The characteristics that are important to the team are documented in this section. Some of the categories that are found in this section are behaviors, timeliness, respect, commitment, openness, and availability.

- **Rules of engagement**

This section documents meeting, decision-making, and discussion protocols; support of agreements; document control; and escalation procedures.

- **Useful information**

The roles and responsibilities for the team members are documented in this section, as are other items, including communications management, labor claiming codes, and key contacts.



A WWPMM work product description and a template are available to assist you in creating a team charter work product.

You can find them, along with descriptions for all WWPMM work products and templates, on the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
- Ensure Open Communication
- Seven Keys to Success
- Define and Maintain the Technical Environment
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Organize the Project Team

Building a Team

Building a successful project team requires you to take the following steps:

1. Select the right team members.

First, you must identify the specific project skills that are needed, and then bring in people with those skills. As the project continues, you must continue to validate the team's skills and resources to ensure that no critical skill areas are missing or misrepresented.

2. Organize the team.

As team members begin to work together, the team establishes a set of values. You, the project manager, must help team members commit to the team and its values. Each team meeting is an opportunity for team building and team development.

Another part of organizing a team is preparing an organizational breakdown structure (OBS). This WWPMM work product, which is presented in Module 5, defines the relationships between projects and subprojects, the reporting relationships, and the team structure of the project organization. All team members should have a copy of this chart, which clearly identifies their roles and responsibilities.

In order to support the team's goals, team members need to understand the background information about the project and team's mission.

3. Ensure open communication.

Communication should be easy and frequent, and team members must feel that they are part of the group. A variety of communication methods can be used to share information, including meetings, informal discussions, e-mail, and bulletin boards. All of these should be documented in the communications management plan.

4. Maintain the Team

After the team is formed, your time, effort, and attention are required to maintain it. In addition to making necessary adjustments in team personnel, organization, and communication, you must consistently:

5. Motivate the team

Once the team is assembled, the team members must be motivated to work. The team members' degree of motivation determines how much they give to the project and how supportive they are of the project goals. As a project manager, you might not have the same leverage as a functional manager, who controls motivators such as pay and promotion. As a result, you must choose your motivators carefully.

All motivators can be classified as appealing to either logic or emotion. Logical motivators can be positive, for example, benefits or quality; negative, for example, loss of benefits and poor quality; or educational, for example, objectives, conditions, explanations, demonstrations, and good judgment. Emotional motivators include generating trust and confidence, stimulating thought, and avoiding hidden agendas.

6. Recognize and reward team behavior

You must recognize and reward team behavior and support team-based incentives. In doing this, you should emphasize the team's collective performance rather than singling out individuals for their specific achievements.

7. Respond to team change

Throughout the life of a project, individuals will be added to the team and members will leave the team. Fluctuating team membership is a challenge for every project manager and must be recognized and dealt with in a direct and timely way.

Considerations for the Multicultural Team

When managing a multicultural team, always consider variations in social customs, time zones, protocol practices, and language proficiency. Failure to recognize differences often leads to hurt feelings and misunderstandings that might affect the smooth functioning of the team. Some rules are:

- Conduct conference calls during times that are waking hours for all participants.
- Be considerate of holidays and work hours, both of which differ across cultures.
- Avoid using slang, colloquialisms, and nuances when communicating with people for whom the language in use is not a first language.
- Avoid humorous remarks; they are not always funny in other cultures.
- Be considerate of other cultures' protocols. These might include showing respect for management, avoiding public appraisals, and deferring to senior members.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
- What Is Communications Management?
 - Developing a Communications Management Plan
 - Developing a Communications Management Plan
 - Ensure Open Communication - Question
- Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Ensure Open Communication

What Is Communications Management?

Many new project managers do not realize the importance of communication to project success. The Project Management Institute (PMI) says that project managers spend about 90% of their time communicating. That means you need to have a plan so that communication on your project is timely, is directed to the right audience, and gets the message across. But remember, the project manager does not have to do all the communicating. Team leaders and project staff can support the communication. Let's examine the process for developing a communications management plan.

A good project team must have effective communication within the team and between the team and the project stakeholders. A hazard in project management is the belief that communication links are functioning effectively as long as people are communicating with one another. The truth is that communication must be well planned to be effective. As the project manager, you are responsible for planning, building, and maintaining effective communication.

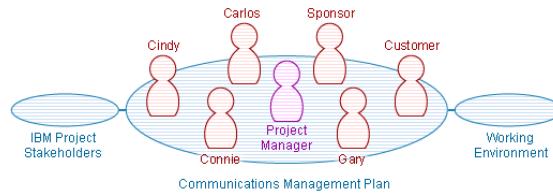
To do this, you must first recognize the variety of communication that a project needs. Different communication channels have different requirements. For example, communication from the project manager to the project sponsor and the client has one set of requirements. These differ greatly from the requirements of communication between project managers and their teams and subprojects, or between the overall project manager and the project managers of subprojects or related projects.

Communications management includes all the processes required to collect, generate, disseminate, store, and dispose of project information. Effective communications management requires communications planning, which includes the following:

- Planning communications, both external and internal to IBM
- Identifying meetings, reports, and other communications that must occur with the sponsor, subcontractors, project team, and the performing and delivery organizations' management
- Creating the communications management plan and modifying it to include, for example, additional project stakeholders, a longer period of time, more project phases, or additional detail

Suppose you want to convince a key stakeholder of the merits of the solution you are building. What medium do you think will be most effective? Will sending an e-mail be enough to convince her? Probably not. E-mail and other written forms are best used to transmit information. To gain commitment from a stakeholder, you usually need to personally connect with him or her one to one or in a group meeting, and secondarily over the telephone.

The medium for each communication link must also be defined. Some communications take place in weekly status meetings, including face-to-face meetings, electronic meetings, and conference calls. Alternatively, communications could occur as written reports, electronic memos, or e-mailed documents. Internet or intranet posting is another potential communication medium. Project information can be updated and posted online where people who need it can access it at all times.



Your decisions regarding communication will be affected by the geographic location of the team members, the frequency of communications required, and the technology that is available.

If all the team members are in the same location, you might want to consider a team room approach.



Project Management Orientation

[+]	<input checked="" type="checkbox"/> 1: Getting Started
[+]	<input checked="" type="checkbox"/> 2: Define the Project
[+]	<input checked="" type="checkbox"/> 3: Team Management
[+]	<input checked="" type="checkbox"/> Fast Points
[+]	<input checked="" type="checkbox"/> Organize the Project Team
[+]	<input checked="" type="checkbox"/> Build the Team
[+]	<input checked="" type="checkbox"/> Ensure Open Communication
[+]	<input checked="" type="checkbox"/> What Is Communications Management?
[+]	<input checked="" type="checkbox"/> Developing a Communications Management Plan
[+]	<input checked="" type="checkbox"/> Developing a Communications Management Plan
[+]	<input checked="" type="checkbox"/> Ensure Open Communication - Question
[+]	<input checked="" type="checkbox"/> Seven Keys to Success
[+]	<input checked="" type="checkbox"/> Define and Maintain the Technical Environment
[+]	<input checked="" type="checkbox"/> Seven Keys
[+]	<input checked="" type="checkbox"/> WWPMM
[+]	<input checked="" type="checkbox"/> Mentor
[+]	<input checked="" type="checkbox"/> Case Study
[+]	<input checked="" type="checkbox"/> Self-Check
[+]	<input checked="" type="checkbox"/> 4: Identify and Validate Requirements
[+]	<input checked="" type="checkbox"/> 5: Create Decomposition Structures
[+]	<input checked="" type="checkbox"/> 6: Risk Management
[+]	<input checked="" type="checkbox"/> 7: Project Estimates
[+]	<input checked="" type="checkbox"/> 8: Project Schedules
[+]	<input checked="" type="checkbox"/> 9: Change Management
[+]	<input checked="" type="checkbox"/> 10: Project Control and Delivery
[+]	<input checked="" type="checkbox"/> 11: Project Management Review
[+]	<input checked="" type="checkbox"/> 12: Project Closeout
[+]	<input checked="" type="checkbox"/> 13: Project Management Tool Suite
[+]	<input checked="" type="checkbox"/> 14: Self-Assessment and Final Exam

Preferences

Ensure Open Communication

Developing a Communications Management Plan

The various communications requirements and your decisions about them are documented in the communications management plan. The plan includes what is being communicated, how it is communicated, who is communicating, to whom is it being communicated, and how often this must happen. You should create the plan during the project planning activities. As you start execution, it might be necessary to expand the plan or adjust it.

There is a WWPMM work product description and a template to assist you in creating a communications management plan. These, like all WWPMM work product descriptions and templates, can be found on the [WWPMM Web site](#).

Determining Project Communications Requirements

The purpose of communications planning is to be proactive, anticipating what type of information stakeholders will need and when they will need it. If you are not proactive, you will end up spending lots of time responding to ad-hoc information requests, or worse, lose commitment from key stakeholders.

Before you can create a communications management plan, you need to determine the project's communications requirements. To do this, you must first review:

- Memos from the sponsor
- The agreement
- The project definition
- The project decision structure
- The organizational breakdown structure (OBS)
- Any supplier agreements
- The project procedures description

Next, the information needs of the various stakeholders should be carefully analyzed to determine the information that will be provided and the sources of that information. Include the requirements of the project team, the sponsor, the suppliers, the delivery and performing organizations' management, and others who might need information regarding the project. Information for this analysis can be gathered by:

- Reviewing sponsor, supplier, and IBM organizational charts to determine official communications channels
- Interviewing stakeholders to understand informal communications channels
- Interviewing other IBM constituencies that might have a history with or knowledge of the sponsor or the delivery organization's management

Once that is done, you must document the information requirements of each stakeholder group. Be aware that policies of the delivery organization often define the format and procedures for status meetings and project reporting.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - What Is Communications Management?
 - Developing a Communications Management Plan
 - Developing a Communications Management Plan
- Ensure Open Communication - Question
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Ensure Open Communication

Developing a Communications Management Plan (Continued)

Creating a Meeting Matrix

Creating a meeting matrix can make it easier to understand the communications that are required for the project. The matrix should outline the purpose, content, and frequency of all periodic meetings.

Meeting	Purpose	Frequency	Media	Author or Owner	Attendees
Team Leads	Deliverable Status and Action Item Reporting	Ad hoc	Sametime	Ron Brown	Project Team Leaders
Team Announcement	Review Status and Actions on the Request for Announcements	Weekly	Face to Face	Ron Brown	RFA owners
E-Announcement	PDT for a major e-announcement and delivery	Monthly	Conference Call	Rosemary Lopez	Product Owners, RFA Owners, Finance, Manufacturing, Engineering
Interlock	Announce and Ship Readiness with all IBM Divisions and Corporate Staff	Quarterly or Weekly at Announcement	Conference Call	Vijay Kadayan	Corporate and Division Representatives

Meeting Matrix

Developing the Communications Management Plan

Document the scheduled meetings, reports, and other communications in a communications management plan using the meeting matrix as one of the inputs to the plan.

A WWPM work product description and a template are available to assist you in creating the communications management plan work product. For information about this and for descriptions of all WWPM work products and templates, go to the [WWPM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - What Is Communications Management?
 - Developing a Communications Management Plan
 - Developing a Communications Management Plan
 - Ensure Open Communication - Question
- Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Ensure Open Communication

Question

A preliminary communications management plan is built during which project activities?

- A. Analyzing and Planning
- B. Delivering and Planning
- C. Defining and Planning
- D. Analyzing and Execution

Submit Answer

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
- 4: Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPPMM
 - Mentor
 - Case Study
 - Self-Check
- 5: Identify and Validate Requirements
- 6: Create Decomposition Structures
- 7: Risk Management
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout
- 14: Project Management Tool Suite
- 15: Self-Assessment and Final Exam

Preferences

Team Management

Seven Keys To Success

Introduction to the Seven Keys To Success™

This section discusses the Seven Keys To Success™ and how this framework is being used within IBM. It is being deployed throughout IBM and is key to the success of IBM's projects. Throughout this course, you will find material that answers the following questions:

- What is the Seven Keys To Success™?
- How can the Seven Keys To Success™ help projects be successful?
- How do the project manager and project staff apply the Seven Keys to assess and communicate the health of the project?

Project Success Depends on Executive Commitment

Project success is directly tied to effective involvement of business executives and to the speed at which decisions and actions are made. According to the Gartner Group, the Project Management Institute, and other observers of project management performance, the number one reason why projects fail is related to executive commitment and leadership.

Gaining executive commitment and leadership requires communication both to and from executives.

The Seven Keys To Success™ is a means to ensure successful projects. It is a framework for assessing and communicating project health. This framework can be used as an effective communication vehicle with executives and other stakeholders on projects.

The Seven Keys To Success™ is complementary to the other project management methods, tools, and techniques used in IBM.

What's the Story Behind the Seven Keys to Success™?

The Seven Keys to Success™ system was created by and for project managers to provide PMs with a systematic approach for dealing with their unique personal challenges in managing projects.

The original research and design team knew there were many methods and tools for planning and controlling projects and the various disciplines, but none solely addressed the PM's unique situation and mindset. The team created a consistent and cohesive approach applicable for all types and sizes of projects regardless of the project phase or circumstance. The resulting Seven Keys to Success™ is a simple but highly effective system for all PMs to use in pursuing project management excellence and emulating world class project management.

Many studies validate that appropriate engagement of appropriate stakeholders is the primary driver of project success. The Seven Keys to Success provides an excellent but simple means for engaging and communicating with not only all key project players but also the executives who must understand the health of the project and take appropriate actions to ensure success.

Some of the highest performing and most successful Project Managers and Team Leaders are invariably doing the essence of the Seven Keys to Success. This IBM PM approach simply provides a convenient framework and language for leveraging these best practices across all players. The Seven Keys to Success is included as part of WWPPMM and is complementary to the other tools and methodologies used in IBM.

How are the Seven Keys to Success™ used?

1. As a common language for communicating about project health with the team, sponsor, and stakeholders
2. To set consistent Steering Group agendas for effective project governance
3. To balance and prioritize corrective actions across all project dimensions
4. A structure and approach for Quality and Risk Reviews
5. To identify and highlight underlying root causes of unhealthy project situations
6. As a checklist for decision making, e.g., scope changes
7. Effective throughout the Project Life Cycle from Opportunity through Defining, Planning, Delivering, and Closing

Note: For additional information, visit the [Seven Keys Website](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success**Seven Keys To Success (Continued)****Seven Keys To Success™**

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracing and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success (Continued)

Seven Keys To Success™

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



The goal of measuring this key is to know early in a project whether the project is likely to do well.

During a project, project managers measure the following criteria:

- The project plan is accepted and maintained.
- The interim and final milestones and deliverable acceptance criteria and roles are accepted.
- The project approach is appropriate, adequate, and followed; resources have been scheduled.
- There is confidence in the accuracy of the progress reports and estimates of completion.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracing and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

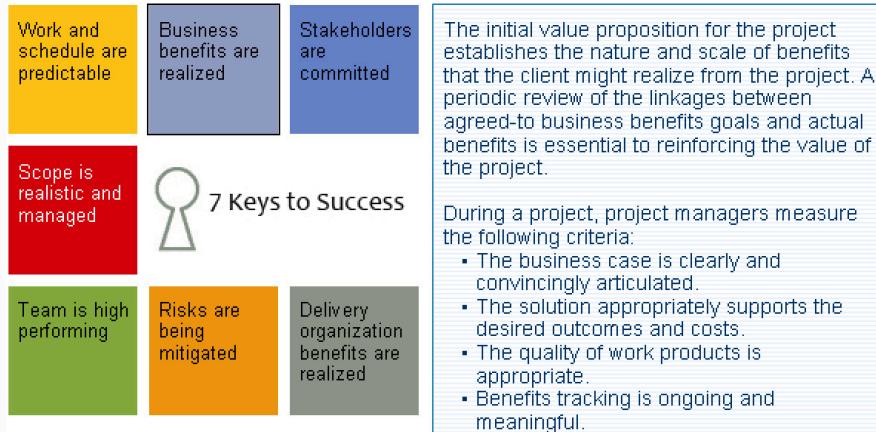
Seven Keys To Success

Seven Keys To Success (Continued)

Seven Keys To Success™

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to business benefits goals and actual benefits is essential to reinforcing the value of the project.

During a project, project managers measure the following criteria:

- The business case is clearly and convincingly articulated.
- The solution appropriately supports the desired outcomes and costs.
- The quality of work products is appropriate.
- Benefits tracking is ongoing and meaningful.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracing and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success (Continued)

Seven Keys To Success™

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results.

During a project, project managers measure the following criteria:

- The stakeholder management plan is fully implemented and maintained.
- The right sponsor is appropriately engaged.
- Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
- All appropriate stakeholder groups are effectively represented.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracing and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success (Continued)

Seven Keys To Success™

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



Written agreements define the initial scope of the project, as well as any changes.

During a project, project managers measure the following criteria:

- The scope management plan is implemented.
- Organizational, system, and geographic boundaries are appropriately defined.
- Scope assumptions and exclusions are clear.
- The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracing and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success (Continued)

Seven Keys To Success™

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



This key is about talent and experience and about how the team works as a unit.

During a project, project managers measure the following criteria:

- The breadth, depth, and calibre of skills are appropriate for all phases.
- Morale, motivation, energy, and collaboration across teams are high.
- The environment and facilities support productive and effective teamwork.
- Roles and responsibilities are clear.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to-business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracing and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
- Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - 11: Project Management Review
 - 12: Project Closeout
 - 13: Project Management Tool Suite
 - 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success (Continued)

Seven Keys To Success™

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks.

During a project, project managers measure the following criteria:

- A risk management plan is fully implemented, maintained, and supported.
- Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
- Risk tracking and reporting are timely.
- Mitigations are effective and ensure that the project is successful.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to-business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracking and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
- Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
 - Define and Maintain the Technical Environment
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success (Continued)

Seven Keys To Success™

As you progress through the course, more detail about the criteria for assessing each key and determining whether it is healthy or not will be presented.

Move your mouse pointer over each box to read a description of that key.



The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff.

During a project, project managers measure the following criteria:

- The project helps the delivery organization's reputation.
- The project delivers an acceptable financial return
- Billings and Collections are current.
- The project helps team members' careers.

Definitions of the Seven Keys To Success

Definitions of the Seven Keys To Success

- The Seven Keys to Success provides a communication technique for identifying the decisions that the client must make and for organizing what to report to the client.
- Work and schedule are predictable: The goal of measuring this key is to know early in a project whether the project is likely to do well. During a project, project managers measure the following criteria:
 - The project plan is accepted and maintained.
 - The interim and final milestones and deliverable acceptance criteria and roles are accepted.
 - The project approach is appropriate, adequate, and followed; resources have been scheduled.
 - There is confidence in the accuracy of the progress reports and estimates of completion.
- Business benefits are being realized: The initial value proposition for the project establishes the nature and scale of benefits that the client might realize from the project. A periodic review of the linkages between agreed-to business benefits goals and actual benefits is essential to reinforcing the value of the project. During a project, project managers measure the following criteria:
 - The business case is clearly and convincingly articulated.
 - The solution appropriately supports the desired outcomes and costs.
 - The quality of work products is appropriate.
 - Benefits tracking is ongoing and meaningful.
- Stakeholders are committed: Team members realize who the project stakeholders are and pledge to maintain stakeholder satisfaction. The executive sponsor is visible. Incentives tie to project results. During a project, project managers measure the following criteria:
 - The stakeholder management plan is fully implemented and maintained.
 - The right sponsor is appropriately engaged.
 - Regular Steering Committee meetings occur; team members make decisions and take effective action in a timely fashion.
 - All appropriate stakeholder groups are effectively represented.
- Scope is realistic and managed: Written agreements define the initial scope of the project, as well as any changes. During a project, project managers measure the following criteria:
 - The scope management plan is implemented.
 - Organizational, system, and geographic boundaries are appropriately defined.
 - Scope assumptions and exclusions are clear.
 - The costs, schedules, and IBM and client responsibilities reflect proposed terms and agreed-to changes.
- Team is high performing: This key is about talent and experience and about how the team works as a unit. During a project, project managers measure the following criteria:
 - The breadth, depth, and caliber of skills are appropriate for all phases.
 - Morale, motivation, energy, and collaboration across teams are high.
 - The environment and facilities support productive and effective teamwork.
 - Roles and responsibilities are clear.
- Risks are being mitigated: Risks are potential circumstances or conditions that can jeopardize the attainment of a milestone or the final project objective (within budget, on time, and to specification). Project managers should manage and mitigate risks. During a project, project managers measure the following criteria:
 - A risk management plan is fully implemented, maintained, and supported.
 - Potential risks are proactively sought and discussed in meetings and discussions; identified risks are documented and assigned to team members for follow-up.
 - Risk tracing and reporting are timely.
 - Mitigations are effective and ensure that the project is successful.
- Delivery organization benefits are being realized: The delivery organization enhances the reputation of the project team, gathers lessons learned, and develops the project's staff. During a project, project managers measure the following criteria:
 - The project helps the delivery organization's reputation.
 - The project helps financially; billing and collections are current.
 - The project helps team members' careers.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
- Seven Keys to Success
 - Seven Keys to Success (Continued)
 - What Is the Meaning of the Three Colors?
- Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

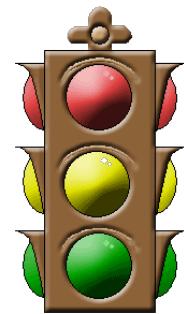
What Is the Meaning of the Three Colors?

The Seven Keys To Success are used to assess the health of projects. Based on criteria agreed upon by the project sponsor and project manager for a project, the status indicator of each key reflects one of the following three colors:

- Red means urgent; corrective action is required immediately.
- Yellow means warning; corrective action is required in the near term.
- Green means that the criteria indicate it is okay to proceed; no corrective action is required.

Traditional project management status indicators tend to indicate the severity of the problem but the Seven Keys indicate both the severity of the problem and how quickly corrective action is needed.

No project team will have all the keys green all the time. The status indicators focus the project sponsor and project team members on the issues most critical to the success of the project.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

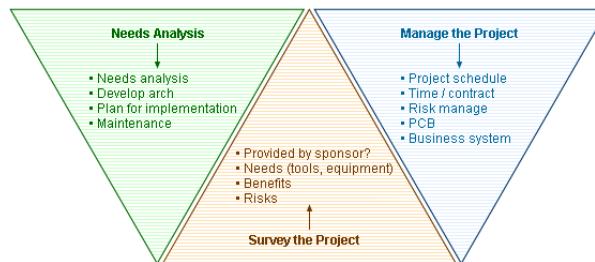
Preferences

Define and Maintain the Technical Environment

Define and Maintain the Technical Environment

Defining the Technical Environment

The last few sections dealt with managing the people on the project. Now let's examine managing the environment in which the work is conducted. Have you ever worked on a project where the work conditions were poor? Did this affect the project team? You know from your own experience that adverse working conditions can affect team morale and efficiency and the quality of the project deliverables. As you might have guessed, it is the project manager's responsibility to ensure the working environment will promote teamwork and the successful completion of the project.



The **technical environment** is the collection of physical space, hardware, software, netware, and equipment that is shared by the project team and used to support a project or a subproject. The technical environment includes the following items:

- An office software suite, including word processing, spreadsheet, presentation, and drawing tools
- Office communications, including e-mail and access to shared files
- Project management tools
- Tools that support technical activities in all project phases
- Configuration management features associated with project management and technical tools
- An office used as a dedicated team room
- A network-based team room

Surveying the Technical Environment

The technical environment might or might not be in place before the project starts or additional tools might be needed. Project needs, costs, expected benefits, and risks must be analyzed before deciding whether to build a technical environment or adapt one that already exists.

On some projects, part or all of the technical environment is provided by the sponsor. On other projects, the technical environment is a deliverable, to be left behind or transferred to the sponsor at the end of the project. In any case, in planning the project, the requirements for the technical environment must be defined.

Managing the Technical Environment

Managing the technical environment includes understanding, planning, acquiring, installing, and removing the technical environment. It is important to have a plan that provides a clear description of what must be done.

Activities for managing the technical environment include performing a needs analysis, developing an architecture, planning for implementation and maintenance of the environment, and planning for the eventual de-install of the environment.

As part of your technical environment, you should have project management tools that provide:

- Project management and operational scheduling
- Time tracking
- Cost tracking
- Risk management
- A project control book (PCB)
- Access to business systems



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
- 7 Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success Introduction





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - Team Is High Performing Key
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Team Is High Performing Key

The project manager has the responsibility of ensuring that the project team is high performing. This means that the team has high morale, and is getting the job done. It is important to remember that the project team might include client staff in addition to IBM staff. It can be easy to tell whether a team is high performing: team members have open communication, they share expertise and issues, and the staff volunteers to take on new tasks.

Here are some criteria for assessing the Team is High Performing key:

- The breadth, depth, and caliber of project manager and team skills are appropriate for all phases.
- Morale, motivation, energy, and collaboration across teams are high.
- Environment and facilities support productive and effective teamwork.
- Roles and responsibilities are clear.

Team is high performing



Healthy Signs

- Morale is good.
- The team is diverse.

Unhealthy Signs

- Tension can be felt.
- Turnover is high.
- Working conditions are poor.

This indicator, often overlooked, is about talent and experience. It is also about morale, trust, physical environment, reward, and recognition.

What happens if a team is not high performing?

Have you ever worked on a project and the team was not high performing?

Was there frequent miscommunication between team members, a lack of information sharing, and distrust?

And how did this impact the project?

More than likely, it impacted the Work & Schedule are Predictable key. When a team is not working at its best, deadlines are missed, and the quality of the work is not up to an acceptable standard. The Delivery Organization Benefits are Being Realized key is also affected because of the additional time and cost incurred to make up for the team's poor performance.

As the project manager, it is your responsibility to proactively ensure the team is high performing. So make it a point to review the team's overall performance and plan actions to improve the team environment, morale and productivity.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
- WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Team Management

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).

WWPMM Practices

- Human Resource Management
- Communications Management
- Quality Management
- Technical Environment Management (Supplemental Practice)



WWPMM Activities

- Develop Team Charter
- Finalize Plans for Agreement

WWPMM Work Products

- Team Charter
- Communications Management Plan
- Technical Environment Plan (Supplemental Work Product)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Team Management

Mentor



The Importance of Planning

Think back. Have you ever worked on a project in which the team was not well organized? What happened to the project?

Effective teams don't just happen because the project manager was lucky or had highly-placed friends. I have seen great project managers with great teams fail because they didn't spend the time defining and documenting how their team would work together. I have also seen other cases where a team with mediocre skills was able to miraculously fulfill their commitments because of the up-front planning that was done and because the team worked well together and communicated with each other.

"I have a team charter. Why have a communications management plan too?"

I believe a communications management plan is key to a successful project for the following reasons.

The plan facilitates efficient communications and quicker responses, because everyone knows who is supposed to get the information, as well as how the information is delivered and how often. We all have a story about the stakeholder who surprises everyone and stops the project saying, "I didn't know" or "Nobody told me." A stakeholder analysis ensures the PM considers all stakeholders and their information needs. The communications management plan is the plan that ensures that the stakeholders receive the documentation and communication they need, and answers their questions.

Remember that project managers are not the only ones responsible for project outcome. Communication between the project manager, team, and stakeholders is crucial. I remember early in my career, I was a project manager on two very different projects. One was my best project, and the other was my worst project. These two projects occurred one right after another in the same year. One project had a Chief Information Officer who appeared to me to actively work to see the project fail. And he succeeded; it failed. The other project was the best project I had ever managed. In this project, it was the client who made the difference. This client took responsibility, made difficult decisions, took political heat, and truly owned the result. Could it be that I completely failed in one project and was a success in the other? Did I change tactics or become a different person? No, in fact my best project happened immediately prior to my worst project. This was my first lesson that we, as project managers, are not the only people responsible for project outcomes, whether the outcomes are good or bad. So it's important to understand your stakeholders and have a plan for keeping them committed to the project.

Finally, one of the most frustrating things that I have experienced as a project manager is when team members are spending time talking to the clients or sponsors. First of all, they don't have time to do the work I need for them to do and talk to those people. Also, they only see a small part of the whole project. Often times, their opinions of the other parts of the project are not based on facts, and then I have to spend hours of my time doing damage control.

I have found that if I create a communications management plan and get the team to agree to it, it really does save me and my team time and money.

A communications management plan ensures that proper documents and reports are generated to satisfy the needs of formal documentation for project reviews and ISO 9000 audits. This really reduces my work load when I have to get ready for those reviews.

"Why is a team charter important?"

In my opinion, the real value of a team charter is the exercise that you go through to create it. It forces you, as the project manager, and your team to discuss how you're going to work together. It forces you to agree on the project goals and the roles and responsibilities of each of the team members. Unfortunately, if you don't create the team charter, most of the time you also don't go through the thought process to figure out how the team should function.

"Why do I need to have a technical environment plan?"

I think the technical environment plan is critical. We're all communicating and working using technology. Unfortunately, even within IBM, we're using different software programs and tools or we're on different levels of those programs. When we're not on the same levels or using the same programs, we have communication problems. The purpose of writing a technical environment plan is to find those areas where we're not on the same software and fix them before we get to a critical point in the project. This is really just common sense.

The place we really see problems is with our suppliers and customers. Many of them aren't running our standard products, and some of them don't want to be. In those cases, we need to decide early in the project how to best communicate with them.

Team advice

Let me give you a bit of advice about the Team is High Performing key. When I was managing the integration project for Cottets-Close Hotels in the UK, I learned first hand how powerful it can be to have a truly diverse team: diverse in style, in nationality, in gender, and in life experience. And I also learned how hard it can be to bring such a team together, how easy it is to convince oneself to take shortcuts in these efforts, and how tiresome it can be to continually display the leadership that binds the team together. Do not let these challenges discourage you. Fight for diversity on your teams, and fight for the time and resources you need to build trust and communications in your teams. I guarantee your project's performance will benefit.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Team Management

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

In this assignment, you will be starting the Project Definition document for the Rest Easy Hotel training project.

To complete the assignment:

1. Read the attached file, *Rest Easy Charter.doc*. This is the Rest Easy Project Charter.
2. Read the attached file *Memo from Project Executive.doc*. This is a memo from Tom Smith, the IBM executive project manager for the Rest Easy Hotels project.
3. Based on the information you have about your subproject, complete the second section, "Overview," of the attached file, *Module 3 Communications Management Plan Template.doc*



Rest Easy Charter



Memo from Project Executive

Module 3
Communications
Management Plan
Template



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Case Study Solution
 - Self-Check
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

After you complete this assignment, check your work on the assignment by comparing it with the solution in the attached file.

There are several correct solutions for this assignment, including the one in the attachment. This solution handles the communication between you, the training project manager, and each of the hotels, the vendor, the other Rest Easy Hotel project managers, and the project executive.



Module 3 Communications Management Plan
Solution



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
 - + Fast Points
 - + Organize the Project Team
 - + Build the Team
- + 4: Ensure Open Communication
- + 5: Seven Keys to Success
 - + Define and Maintain the Technical Environment
 - + Seven Keys
 - + WWPMM
 - + Mentor
- + 6: Case Study
- + Self-Check

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 1 of 11

There are two types of organizational structures: functional and projectized.

- A. True
 B. False

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 2 of 11

Which of the following types of organizational structure is more likely to have project team members with mixed loyalties?

- A. Projectized
- B. Functional
- C. Matrix
- D. Both projectized and functional

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 3 of 11

Team members are usually:

- A. Independent of each other's activities
- B. Dependent on each other's performance
- C. Independent of each other's project dates
- D. Dependent on recognition from the team

[Submit Answer](#)



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
- Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 4 of 11

After selecting the team members and validating their skill sets, what is the next thing that the project manager should do to begin organizing the team?

- A. Set the stage for open communication on the project
- B. Identify all subproject managers, prepare an organization chart, and establish delegation levels within the team
- C. Exercise leadership behaviors to motivate the team to work
- D. None of the above

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 5 of 11

What vehicle or vehicles document the team ground rules in WWPM?

- A. Rules of engagement
- B. Rules of behavior
- C. Team Charter
- D. All of the above

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 6 of 11

Communications management includes all the processes required for which of the following? (Select all that apply.)

- A. Collection of project information
- B. Generation of project information
- C. Dissemination of project information
- D. Storage of project information
- E. Disposition of project information

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Self-Check

Question 7 of 11

What is the purpose of a meeting matrix?

- A. To outline the people to be communicated with and how to communicate
- B. To outline the purpose, content, and frequency of all periodic meetings
- C. To outline the purpose, content, and frequency of all communications
- D. To outline the types and timing of communications to be developed

[Submit Answer](#)



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
- 4: Ensure Open Communication
- 5: Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
- 6: Case Study
- 7: Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 8: Identify and Validate Requirements
- 9: Create Decomposition Structures
- 10: Risk Management
- 11: Project Estimates
- 12: Project Schedules
- 13: Change Management
- 14: Project Control and Delivery

Preferences

Self-Check

Question 8 of 11

The technical environment includes which of the following? (Select all that apply.)

- A. An office suite: word processor, spreadsheet, and presentation or drawing tools
- B. Office communications: mail and access to shared files
- C. Project management tools
- D. Tools that support technical activities in all project phases

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
- 4: Ensure Open Communication
- 5: Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
- 6: Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- 7: Identify and Validate Requirements
- 8: Create Decomposition Structures
- 9: Risk Management
- 10: Project Estimates
- 11: Project Schedules
- 12: Change Management
- 13: Project Control and Delivery

Preferences

Self-Check

Question 9 of 11

Everyone is more likely to follow a communication plan when it is agreed to and documented.

- A. True
 B. False

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
- 4: Ensure Open Communication
- 5: Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
- 6: Case Study
- 7: Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
- Question 10
- Question 11

Self-Check

Question 10 of 11

The Seven Keys To Success help the project manager to:

- A. Prioritize issues
- B. Focus discussions
- C. Assess the health of the project
- D. All of the above

Submit Answer



Project Management Orientation

- + 2: Define the Project
- 3: Team Management
 - Fast Points
 - Organize the Project Team
 - Build the Team
 - Ensure Open Communication
 - Seven Keys to Success
 - Define and Maintain the Technical Environment
 - Seven Keys
 - WWPM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- + 10: Project Control and Delivery

Preferences

Self-Check

Question 11 of 11

Which of the following help to ensure the Team is High Performing? (Select all that apply.)

- A. Project manager and staff skills are appropriate.
- B. Working conditions are poor.
- C. Roles and responsibilities are vague.
- D. The team is diverse.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Module 4 Objectives

This module enables you to:

- Describe the approach used to gather requirements
- Identify the techniques used to categorize requirements
- Describe the approach used to validate requirements

This module takes approximately 1 hour 30 minutes to complete.

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements

Fast Points

Gather Requirements

- Categorize Requirements
- Validate Requirements
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identify and Validate Requirements

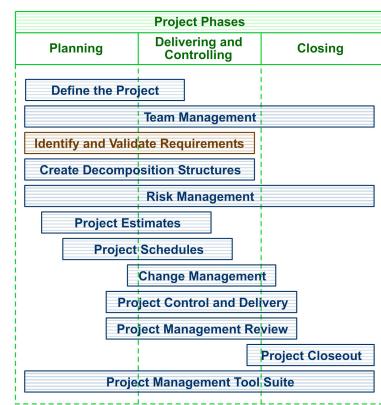
Fast Points

The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Identify and Validate Requirements", which is covered in the first two phases of the project, the Planning phase and the Delivering and Controlling phase.

The main idea of collecting requirements involves a staged process. Remember the following sequence:

1. **Gather** requirements
 - Ask questions by interview sessions (one to one; surveys or questionnaires; and focus groups).
2. **Categorize** requirements
 - Organize and document findings by creating categories for the project requirements.
3. **Validate** requirements
 - Report the findings to the customer.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identify and Validate Requirements

Gather Requirements

The Process for Defining Requirements

After the project charter is created, you will probably spend time talking to the sponsor and other stakeholders about what they expect from the project. They will have many ideas about what they need, some of which will conflict with one another. As the project manager, your responsibility is to determine which of these needs the project will actually fulfill the requirements. Requirements define what the project will deliver. The requirements document is a formally documented description of the sponsor's needs that must be addressed by the project. Requirements state what the sponsor wants and what the project staff has agreed to deliver.

Requirements also serve as the basis for developing project plans. Your project team needs requirements in sufficient detail to begin work.

The process of defining requirements includes the following steps:

1. Gather customer and stakeholder needs.
2. Categorize these needs into either requirements or exclusions.
3. Validate the requirements.
4. Use the validated requirements as the established requirements baseline for the project.

Needs

The information you gather about what the sponsor and stakeholders want translates into needs. Needs are activities, services, products, and deliverables that are useful, required, or desired. Your job is to turn needs into either requirements or exclusions. Exclusions are statements of what you will not provide; that is, "not-included" requests. They are ideas or requirements for a future project, needs that you will not be meeting or providing in the current project.

Needs are initially identified when a proposal is developed. These needs are documented in the request for proposal, marketing letters, project charter, contract, and internal document of understanding. These needs are usually too general to be useful to your project team. An example of a general or high-level need is "Train employees to operate a system that does XYZ on ABC's platform." Sometimes, details are included; but, usually the details that you and your team require to make this project successful are missing.

Asking Questions

As the project manager, you have many questions to ask about general needs. Examples of these questions are:

- Must we train each employee or can they train each other?
- Can we train the night crew during the day, or do we have to provide training for this crew at night?
- Do we train employees during their work shift, or can we ask them to come in early or stay late?
- What union rules do we have to be aware of?
- Describe what success on this project means to you?
- What would be your 'must have' requirements on this project?

These questions should solicit the detailed requirements that are meaningful to you and your team.

Always gather needs at the beginning of a project. Also, when you take over a project that has already started, you must gather needs again to ensure that the original needs are still valid. They might have changed.

Finding Needs

Needs are documented in several places in project documents, including sections of the request for proposal (RFP), the statement of work (SOW), and descriptions of deliverables and evaluation criteria. Carefully review all the project documents to look for obvious and hidden needs.

Another important source of needs is the project sponsor. The sponsor can clarify what you have read in the project documentation. In some cases, you might find that not many needs have been documented, so the sponsor must provide them. The sponsor will also tell you who else you should talk to, such as stakeholders or customers of the sponsor, to enable you to clarify the needs of the project.

Procedures

To gather needs:

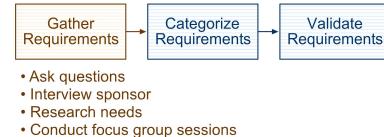
1. Read all project documentation, such as the contract, documents of understanding (DOU), statements of work, and any other documents that might also contain requirements.
2. Interview the sponsor.
3. Prioritize or quantify the answers the sponsor gives you to your questions. This analysis should help you determine the real needs for your project.

Interviewing the Sponsor

The sponsor will give you his or her interpretation of the needs. The sponsor might also give you the names of other people to interview. You can interview the sponsor and other people, or you can use requirements-gathering tools, such as brainstorming, the nominal group technique, focus groups, workshops, and affinity diagrams.

Use structured, unstructured, or semi-structured interviews to identify needs. The interview process involves identifying each participant, and asking a series of questions based on that person's role in the project.

First, you might need to explain to the sponsor and project staff what you are doing, such as gathering needs, categorizing them, and establishing the requirements baseline. You might also need to explain how that baseline is the basis for the project plans that you will develop.



In your interviews, always cover the following basic questions: when, where, why, what, and how. The following are some sample questions:

- Why do you think we are doing this project?
- What is your role in the business and the project?
- How will this project affect your role?
- What functionality and deliverable do you need?
- Who are your stakeholders?
- What kind of financial impact will this project have on your organization?
- Can the existing infrastructure support your needs?
- What outside support is required?
- How do you define success?
- What are your completion criteria?

The next step in the requirements-gathering process is to categorize needs into either requirements or exclusions.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
- Validate Requirements
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identify and Validate Requirements

Categorize Requirements

Transform Needs into Requirements and Exclusions

Examine each identified need and determine whether it should be included in your project. To make this decision, ask these questions:

- Is the need part of the original intent of the project?
- Is the need a new function or feature that was not included in the original intent of the project?
- Was the cost of delivering the need included in the original cost estimate?



- Determine whether need is a requirement or an exclusion
- Document decision

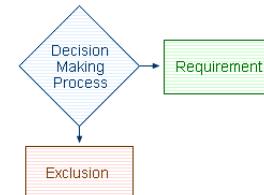
 As you think about the needs, remember what the sponsors told you. In the end, the sponsor must agree with your plans, so involving the sponsor early in the requirements-gathering process will save you time and headaches later.

Each need that is not a requirement is an exclusion. Document the exclusions so that the sponsor and other stakeholders know what you and your team will not provide in the project.

Deciding: Requirement or Exclusion

After you have gathered needs, categorize them as either requirements or exclusions. In effect, you are deciding to:

- Implement all the needs as requirements, because there are no new requirements that have been identified and all needs were in the original Project Definition.
or
- Implement some of the needs now and wait to implement the others in a follow-on project. For example, if a need is really for new functionality, the cost and schedule for providing that new functionality will be defined for the follow-on project. This approach gives you a graceful way to implement all the needs in an orderly manner without jeopardizing the original project.
or
- Not implement any of the needs now. This approach might be appropriate if the needs are not technically feasible, or the customer is not willing to pay for them.



Documenting Requirements

Documented requirements must be clear and concise, because they form the basis of your project plans. As you write requirements, determine whether they can be misinterpreted. Writing requirements that can't be misinterpreted is a difficult task. To help ensure that requirements are clear, include graphics, models, and other visual representations, where appropriate.

After you have written the requirements document, ask your team to review it to be sure they have the detail they need to get started.

In an agile project, requirements are picked up for each iteration based on the client value. There are requirements which are usually defined in the form of "User Stories". One starts with the minimum viable product (MVP) and then user stories are added iteratively that give compelling value to the client.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
- Categorize Requirements - Question
- Validate Requirements
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Categorize Requirements

Question

Match each statement with its respective term.

A. Services, activities, products, and deliverables that are useful, required, or desired

 Requirements

B. Define what the project will deliver

 Requirements

C. Ideas for a future project

 Requirements Submit Answer

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identify and Validate Requirements

Validate Requirements

Always validate documented requirements with the project sponsor, stakeholders, and project team. Validation reviews help you understand whether what is written really describes what each person needs. The key to the requirements process is validation of the requirements by all parties. Validation lets you know that everyone agrees with the requirements and that you can proceed with the project. You use validated requirements to establish the requirements baseline.



- Establish baseline and deliverables

Establish the Requirements Baseline

The requirements baseline is the requirements document that has been approved by the sponsor, stakeholders, and key members of the project team. The baseline defines what the sponsor wants and what the project team has agreed to deliver. It will not be changed unless the sponsor, stakeholders, and you, the project manager, approve of the change.

Everyone on the team must understand that the requirements for the project are defined in the baseline and that any proposed changes must be submitted to you in writing. Changes to the baseline document could affect the cost and schedule of the project. To learn more about the change control process and how you use it to change the requirements baseline, refer to Module 9, "Understanding Change Management."

Establishing a requirements baseline is one of the ways you control the scope of a project and avoid scope creep. Scope creep occurs when project requirements keep changing. When **scope creep** is out of control, you never finish a project; the schedule keeps moving out and the costs keep increasing. As a project manager, enforcing the requirements baseline is one of your most important tasks. When the deliverables are given to the stakeholders, they will run an acceptance test. The acceptance testing done by the stakeholders will be based upon this scope. Be sure each of those requirements can be tested to demonstrate to the client that you have met their expectations.

Process of Validating Requirements

If you do not validate the requirements now, it's likely that sometime during the project a stakeholder will come back and say "I didn't agree to that" and throw the project off-course.

To validate the requirements you have gathered and documented, distribute your findings to the sponsor, stakeholders, and members of the project team to review. As with any review cycle, be sure to tell reviewers when you want their comments returned.

After you receive all comments:

1. Decide what to do about them. You will decide to implement some and not implement others.
2. Tell your reviewers your decision about each comment that they made.
3. Redistribute your requirements document for a second review, and ask the reviewers to approve the document.
4. Continue this process until you get everyone to approve the requirements document. A reviewer's approval means that he or she agrees about what the project will deliver.

This approved document is the requirements baseline, which becomes the scope.

In an **agile project** there is less focus on inclusion and exclusion. All requirements are listed at a high level (usually in the form of User Stories). These User Stories are prioritised by Business Benefits from the client. This prioritised list forms the Requirements Backlog, which the project team refers to in order to select the next requirements to build. When the available build time has been consumed, they stop, leaving any remaining requirements unbuilt.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements

Validate Requirements - Question 1

Validate Requirements - Question 2

- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Validate Requirements

Question 1

How many review cycles should be completed before finalizing the requirements baseline?

- A. The number that is indicated in the statement of work
- B. No more than two as long as it is understood by the reviewers
- C. One and assume reviewer approval with changes
- D. As many as required to achieve all approvals

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Validate Requirements - Question 1
 - Validate Requirements - Question 2

- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Validate Requirements

Question 2

Match the following activities to the 3 statements.

A. Determine whether a need is a requirement or an exclusion

 Gather Requirements

B. Ask questions

 Gather Requirements

C. Establish baseline and deliverables

 Gather Requirements Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements

Seven Keys

- WWPM
- Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success**Seven Keys To Success Introduction**

7 Keys to Success



Stakeholders
are committed





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys

 Stakeholders Are Committed Seven Keys (Continued) Business Benefits Are Being Realized

WWPMM

Mentor

Case Study

Self-Check

 5: Create Decomposition Structures 6: Risk Management 7: Project Estimates 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Stakeholders Are Committed Key

The word "stakeholder" has many definitions and connotations. You can think of a stakeholder as anyone who is impacted by the project, or who can impact the project. As the project manager, you need to actively manage stakeholders throughout the project life cycle to ensure their ongoing commitment to the project's success.

Criteria for assessing the Stakeholders are Committed key are:

- The stakeholder plan is fully implemented and maintained.
- The correct sponsor is appropriately engaged and funded.
- Regular steering committee meetings are being held, and decisions and actions are being made in a timely and effective manner.
- All appropriate stakeholder groups are effectively represented and engaged.

How do you know whether the Stakeholders key is healthy or unhealthy? Look for these signs.

Healthy Signs

- Executive incentives are tied to project results.
- The client makes investments in change management and training.
- Subject matter experts are dedicated full-time.

Unhealthy Signs

- No executive sponsor is visible.
- Key stakeholders miss meetings.
- People are sabotaging efforts.
- Resistance to new ideas is evident.
- No experts are available.

Stakeholders
are committed





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements

- Fast Points
- Gather Requirements
- Categorize Requirements
- Validate Requirements

- Seven Keys
 - Stakeholders Are Committed
 - Seven Keys (Continued)

Business Benefits Are Being Realized

- WWPM
 - Mentor
 - Case Study
 - Self-Check
- 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - 11: Project Management Review
 - 12: Project Closeout
 - 13: Project Management Tool Suite
 - 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success Introduction



Scope is realistic and managed



7 Keys to Success

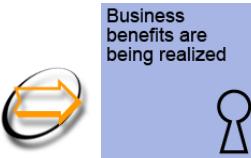
Team is high performing



Risks are being mitigated



Delivery organization benefits are realized



Business benefits are being realized



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - Stakeholders Are Committed
 - Seven Keys (Continued)
 - Business Benefits Are Being Realized

- WWPMM
- Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Business Benefits Are Being Realized Key

Business Benefits Are Being Realized Key

This key is closely related to the Stakeholder key. Clients want solutions to their business problems not just a strategy or system. The project team and the customer must understand why the project is being undertaken, and they both need to understand how the project benefits the customer. If stakeholders do not perceive any business benefit, they will probably lose commitment to the project.

Here are some criteria for assessing the Business Benefits are Being Realized key:

- The business case is clearly and convincingly articulated.
- The solution will appropriately support the desired outcomes and costs.
- The quality of the work products is appropriate.
- The benefits of tracking are ongoing and meaningful.

And here are the healthy and unhealthy signs to look for.

Healthy Signs

- A compelling reason to implement is evident.
- The difference to the business can be measured

Unhealthy Signs

- Members of the team keep asking, "Why are we doing this?"
- People are sabotaging efforts.
- Time is not important.
- Cost is too important.

Some projects start out without a sound business case. Such projects are doomed to fail. Some projects have sound business cases but, somewhere into the project, they lose that focus and never regain it. Ensure that your stakeholders stay focused on the business benefits; otherwise they will focus on how much the project costs.

Business
benefits are
being realized





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
- Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identify and Validate Requirements

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).

WWPMM Practices

- Scope Management

WWPMM Activities

- Shape Project
- Understand Objectives and Plan Defining Activities

WWPMM Work Products

- Project Definition





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identify and Validate Requirements

Mentor



Click the photo to listen to Marjorie talk.

Understanding All Requirements

I cannot overstress the importance of understanding all of the customer's requirements for a project. A thorough understanding of all requirements is critical to project success.

Why It Is Important to Establish a Requirements Baseline

I've also learned how important the requirements baseline is to delivering a project on time and on budget. At the beginning of a project, everyone has to agree on what is being delivered. Everyone has to understand that future changes must be agreed to by the sponsor, stakeholders, and you before the changes are made.

To create the requirements baseline, the stakeholders and project team need to understand the business benefits of the project.

Some Common Pitfalls of Requirements Gathering

I've seen the requirements definition process go awry in many ways. Some problems are so subtle that they do not become apparent until the project is almost finished. The primary source of cost and schedule overruns is problems relating to requirements. These problems can lead a customer to reject a deliverable or a major rework of the project. Poorly defined requirements can also lead to project failure.

Some of the common problems I've encountered or heard about include:

- **Unclear requirements.** This is the most common source of difficulty. The more unique a project, the greater the risk of unclear or imprecise requirements. Requirements are dynamic and ever-changing because they are defined in relation to their environment. Unclear requirements can result from changes in budgets, stakeholders, technology, or the business environment. They might also result from uncertainty about who will ultimately use the product or service or from the sponsor's inability to recognize what is needed. You must guide the process and work closely with the sponsor to identify clear requirements.
- **Premature solutions.** Coming up with answers before asking all the right questions can result in a premature and incorrect solution offering.
- **Lack of clarity about who the sponsor is.** You might find yourself on a project that has conflicting needs. In this instance, your first job is to find out who the sponsor is.
- **Biases.** When analyzing requirements, avoid inadvertently altering requirements to reflect one person's biases, rather than the needs of the sponsor.

To help avoid these pitfalls, work closely with the sponsor, avoid shortcuts in the requirements-gathering process, clearly identify the sponsor, and try to avoid imposing your biases, or those of anyone else, on the sponsor's needs.

The requirements-gathering process is iterative. It is important to redo the process and ask a lot of questions.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identify and Validate Requirements

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

In this assignment, you will be starting the Project Definition document for the Rest Easy Hotel training project.

To complete the assignment:

1. Read the three attached files, *Rest Easy Charter.doc*, *Interviews with Front Desk Staff.pdf* and the *Memo from Project Executive.pdf*. The third file is a memo from Tom Smith, the IBM project executive for the Rest Easy Hotels project.
2. Based on the information you have about your subproject, complete section 3, "Project Scope", of the attached file, *Project Definition Template.doc*. List the needs of your project in this section.



Rest Easy Charter

Interviews with Front Desk Staff

Memo from Project Executive

Project Definition Template



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
 - Case Study Solution
 - Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

Check your work on the assignment by comparing it with the solution in the attached file. This file contains just one correct answer; other requirements could be added to the scope.



Module 4 Project Definition Solution



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements

- Fast Points
- Gather Requirements
- Categorize Requirements
- Validate Requirements
- Seven Keys
- WWPMM
- Mentor
- Case Study

- Self-Check
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check

 Question 1[Question 2](#)[Question 3](#)[Question 4](#)[Question 5](#)[Question 6](#)[Question 7](#)[Question 8](#)[5: Create Decomposition Structures](#)[6: Risk Management](#)[7: Project Estimates](#)[8: Project Schedules](#)[9: Change Management](#)[10: Project Control and Delivery](#)[11: Project Management Review](#)[12: Project Closeout](#)[13: Project Management Tool Suite](#)[14: Self-Assessment and Final Exam](#)

Preferences

Self-Check

Question 1 of 8

Is it appropriate to identify and validate needs on the Rest Easy Hotels project now?

- A. Yes
 B. No

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management

 4: Identify and Validate Requirements

- Fast Points
- Gather Requirements
- Categorize Requirements
- Validate Requirements
- Seven Keys
- WWPMM
- Mentor

 Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 5: Create Decomposition Structures 6: Risk Management 7: Project Estimates 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 2 of 8

Which of the following describes a requirement?

- A. Deliverables that are required or desired
- B. Serves as a basis for developing project plans
- C. What is "not included" for a future system
- D. Data that controls a project's activities

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 3 of 8

Project activities are controlled using:

- A. The requirements
- B. A baseline
- C. The needs
- D. The proposal

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 4 of 8

Which of the following questions should be asked when identifying requirements? (Select all that apply.)

- A. Can the existing infrastructure support your needs?
- B. Why do you think we are doing this project?
- C. Is the project plan acceptable?
- D. What kind of financial impact will this project have on your organization?
- E. What outside support is required?
- F. What are your completion criteria?
- G. When can we get started on the items that we will not cover on this project?

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management

- 4: Identify and Validate Requirements

- Fast Points
- Gather Requirements
- Categorize Requirements
- Validate Requirements
- Seven Keys
- WWPMM
- Mentor

- Case Study

- Self-Check

- Question 1
- Question 2
- Question 3
- Question 4

- Question 5

- Question 6
- Question 7
- Question 8

- 5: Create Decomposition Structures

- 6: Risk Management

- 7: Project Estimates

- 8: Project Schedules

- 9: Change Management

- 10: Project Control and Delivery

- 11: Project Management Review

- 12: Project Closeout

- 13: Project Management Tool Suite

- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 5 of 8

When is a requirements baseline established?

- A. Before signing the SOW and finalizing the project plan
- B. After the requirements and exclusions are validated with the customer
- C. Before sorting the needs into requirements and exclusions
- D. After the project plan is approved by the client and the project team

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 6 of 8

The four common pitfalls in defining requirements are unclear requirements, _____, lack of clarity about who the sponsor is, and biases.

- A. Rapid conclusions
- B. Lack of support
- C. Underestimated scopes
- D. Premature solutions

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
 - Fast Points
 - Gather Requirements
 - Categorize Requirements
 - Validate Requirements
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 7 of 8

Which of the following statements is a requirement of the Rest Easy Hotels project?

- A. The overall project will set up, configure, and install IBM processors and third-party hotel-management software in all Rest Easy Hotels within 12 months.
- B. The overall project will install IBM processors and third-party hotel-management software and provide the training starting two months prior to roll-out.
- C. The overall project will provide training after hours at an off-site location within two weeks after the system is installed.
- D. There are no requirements stated in the current material.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management

- 4: Identify and Validate Requirements

- Fast Points
- Gather Requirements
- Categorize Requirements
- Validate Requirements
- Seven Keys
- WWPMM
- Mentor

- Case Study

- Self-Check

- Question 1
- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- Question 7

- Question 8

- 5: Create Decomposition Structures

- 6: Risk Management

- 7: Project Estimates

- 8: Project Schedules

- 9: Change Management

- 10: Project Control and Delivery

- 11: Project Management Review

- 12: Project Closeout

- 13: Project Management Tool Suite

- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 8 of 8

Check all of the unhealthy signs for Business Benefits are Being Realized key. (Select all that apply.)

- A. A compelling reason to implement the project is evident.
- B. Time is not important.
- C. Cost is too important.
- D. Members of the team keep asking "Why are we doing this project?"
- E. The difference the project will make in the client's business can be measured.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 5 Objectives

This module enables you to:

- Decompose a project
- Create a product breakdown structure (PBS)
- Create a work breakdown structure (WBS)
- Create an organizational breakdown structure (OBS)
- Describe criteria for determining if the scope is realistic and managed
- Describe the healthy and unhealthy signs of the Scope is Realistic and Managed key

This module takes approximately 1 hour 20 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures

Fast Points

- Project Decomposition
- Product Breakdown Structure
- Work Breakdown Structure
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Create Decomposition Structures

Fast Points

The diagram shows the modules and how they relate to the project phases.

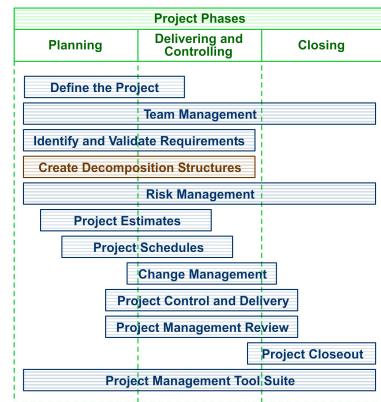
You are now starting the module "Create Decomposition Structures", which is covered in the first two phases of the project, the Planning phase and the Delivering and Controlling phase.

After you have identified the project requirements for your project or subproject, the next step is to determine how you are going to deliver those requirements.

To do this, remember to define the project deliverables, develop a WBS baseline, and describe the criteria for determining if the scope is realistic and managed. Also remember that although the product breakdown structure (PBS), work breakdown structure (WBS), and organizational breakdown structure (OBS) are all different, they complement one another; they are different ways of viewing and decomposing the project.

What does it mean to decompose a project?

Decomposition is the subdividing of the major project deliverables into smaller, more manageable components. You identify the top-level elements of the project and then divide the elements into manageable pieces for scheduling and tracking.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Create Decomposition Structures

Project Decomposition

What Is Decomposition?

Decomposition is the subdividing of the major project deliverables into smaller, more manageable components.

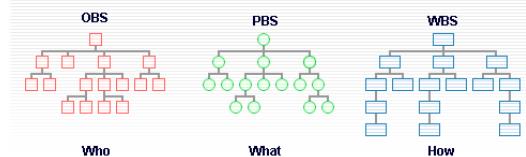
The purpose of decomposition is to identify the top-level elements of the project and then divide the elements into manageable pieces for scheduling and tracking. This process is used to develop the PBS and the WBS.

The OBS shows the project organizational unit responsible for each of the deliverables and components.

Types of Breakdown Structures

There are three types of breakdown structures. Click each tab below to read a description of the corresponding breakdown structure.

Three Types of Breakdown Structures



OBS

The OBS describes the team structure of the organizational units and the reporting relationships between the delivery organization and performing organizations, including subcontractors. It depicts the relationship between the subprojects and organizational units of the project.

PBS

This structure is a hierarchy of project work products, including a special work product called the deliverable. The PBS focuses on what must be produced and shows the items the project team makes, reuses, or buys. It is a grouping of work product elements.

WBS

WBS

This is a hierarchy of project work activities. The WBS is a decomposition hierarchy of all the activities necessary to produce all of the project work products. The hierarchy has as many levels as required to define all the work. Top-level activities are broken down into second-level activities that, in turn, are broken down into third-level activities and so on. The WBS focuses on how the work products and project solution will be built.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
- Project Decomposition - Question
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Decomposition

Question

The team structure is described in the:

- A. OBS
- B. PBS
- C. WBS
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Create Decomposition Structures

Product Breakdown Structure

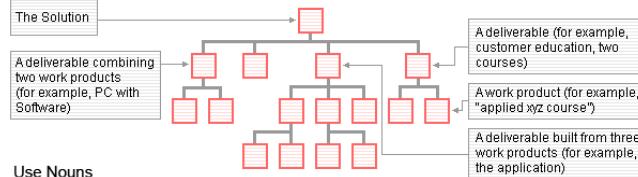
What Is the PBS?

The PBS is a hierarchical decomposition of work products into components. The PBS focuses on what must be produced and is required to create the WBS, which focuses on how to produce the work product. Each level of the PBS represents an increasingly detailed view of the components.



There is a Worldwide Project Management Method (WWPMM) work product description and a template that assists you with the creation of the PBS work product. You can find this information and descriptions for all WWPMM work products and templates on the [WWPMM Web site](#).

The Product Breakdown Structure





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
- Benefits of the PBS
 - Creating the PBS
 - Example of a PBS
 - Product Breakdown Structure - Question
- Work Breakdown Structure
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Product Breakdown Structure

Benefits of the PBS

The PBS helps you to:

- Identify all work products and to designate which work products are deliverables (some work products, such as project management plans and status, are not deliverables)
- Identify reusable work products and components, which supports make-or-buy decisions
- Identify logical relationships, which assists with building the sequence
- Create the WBS
- Clarify the information you need to formulate estimates



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Benefits of the PBS
 - Creating the PBS
 - Example of a PBS
 - Product Breakdown Structure - Question
- Work Breakdown Structure
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Product Breakdown Structure

Creating the PBS

Create the PBS using the following steps:

1. Gather the data as follows:

- o Gather all the project-related materials that define the solution, approach, deliverables, and scope.

A WWPMM activity (Build Project Organizational Unit Work Plans) and two WWPMM work products (the Deliverable Definition and the Work Product List) contain descriptions and templates to assist you with the PBS content. These can be found, along with descriptions for all WWPMM work products and templates, on the [WWPMM Web site](#).

- o Review the PBSs from similar projects.

2. Create the PBS using the data that you gathered as follows:

- o Prepare a high-level PBS that consists of two or three levels.
- o Involve your team members in the development of the PBS because you will not be able to provide all of the information yourself.
- o Keep in mind that each element must be a noun, have definitive, verifiable acceptance criteria, and be assigned as the sole responsibility of a project organizational unit or individual, as shown in the OBS.
- o Include project support work products from project management and quality assurance (QA).
- o Add elements to manage risks.
- o Refine the structure iteratively on each level. Try several different alternatives for each level.
- o Refine each part of the PBS to the level of manageable work products.

3. Review the PBS with others to obtain their agreement, and then complete the following tasks:

- o Review the PBS with the appropriate stakeholders.
- o Receive support from the personnel who are responsible for work products.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Benefits of the PBS
 - Creating the PBS
 - Example of a PBS
- Product Breakdown Structure - Question
 - Work Breakdown Structure
 - Organizational Breakdown Structure
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

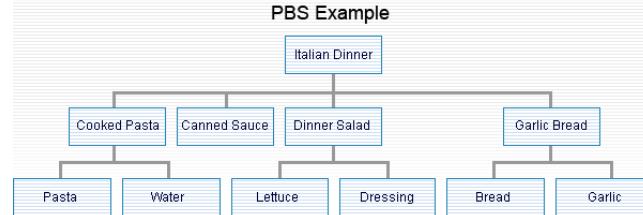
Preferences

Product Breakdown Structure

Example of a PBS

In the following example, there are four deliverables: cooked pasta, canned sauce, dinner salad, and garlic bread. Shown following the deliverables are the work products that are needed to create the deliverables. For example:

- To create the cooked pasta, you need pasta and water.
- To make the dinner salad, you need lettuce and salad dressing.
- To prepare the garlic bread, you need garlic and bread.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Benefits of the PBS
 - Creating the PBS
 - Example of a PBS
 - Product Breakdown Structure - Question
- Work Breakdown Structure
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Product Breakdown Structure

Question

Which of the following does the PBS accomplish for a project? (Select all that apply.)

- A. It identifies reusable work products and components.
- B. It supports make or buy decisions.
- C. It identifies logical relationships (build sequence).
- D. It helps create the WBS.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Create Decomposition Structures

Work Breakdown Structure

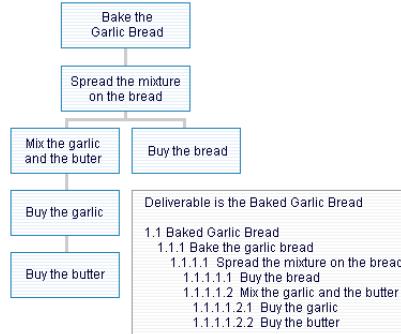
What Is the WBS?

The WBS is a hierarchical decomposition of all the activities the project team must complete. The WBS defines the total scope of the project and provides the basis upon which work can be scheduled.

Each level of the decomposition increases the detailed view of the tasks to be completed to create work products. Verbs are used to describe each activity. The hierarchy has as many levels as required to define the work. The number of levels usually varies from one major element to another. The WBS focuses on how to produce the work products that are defined in the PBS, which focuses on what to produce.

This figure illustrates two ways to show the same WBS decomposition. One is a tree diagram, and the other is an indented list or outline.

Sample WBS for Garlic Bread





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
- Work Breakdown Structure (Continued)
 - Creating the WBS
 - The WBS Dictionary
 - Work Breakdown Structure - Question 1
 - Work Breakdown Structure - Question 2
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- Risk Management
- Project Estimates
- Project Schedules
- Change Management
- Project Control and Delivery
- Project Management Review
- Project Closeout
- Project Management Tool Suite
- Self-Assessment and Final Exam

Preferences

Work Breakdown Structure

Work Breakdown Structure (Continued)

When Is the WBS Created?

The WBS is generated after the team understands the work products to be developed. Development begins when deliverables are identified and agreed to by the sponsor. From this point in project planning, the project scope can be described in measurable and discrete work efforts.

The Levels of the WBS

The WBS has as many levels as are required to define the activities to the level of detail needed to successfully plan, monitor, and manage the work effort.

An activity is an element of work at a particular level. Each activity results in a work product that is distinct and has verifiable completion criteria. Work products that are given to the sponsor are called deliverables (for example, a software program with the functionality requested). Not all work products are given to the customer (for example, those that are necessary to manage and control the project, such as software that generates monthly project status reports, are not given to the customer but do require work effort to develop). The elements of the WBS often have common work activities for similar projects.

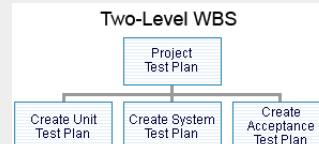
The lowest level of the WBS is the work package. A work package is a group of work items assigned to a single person or small group to be done over a short period of time. An example is a software application that is being developed in-house while the hardware is being developed by an external supplier. The WBS for the software might be decomposed into two-week activities, which results in work packages at the sixth, eighth, and tenth levels of the WBS. Alternatively, the hardware might be decomposed to the subcontract level of 50 weeks of activity at the third level in the WBS. The subcontractor needs to decompose the hardware work into smaller activities to enable effective planning and scheduling.

When creating the WBS, the project manager must examine each level of the structure to ensure that the project is effectively planned, executed, controlled, and closed. Each level must be examined for dependencies among components, acceptance criteria, risks, ownership, milestone schedule, progress reporting, and relationship to the solution architecture. As a project manager, you must consider each of these aspects. You must also look at alternative decompositions to reduce dependencies, tie acceptance criteria more closely to the contract, avoid or reduce risks, permit measurable milestones, allow clear progress reporting, and maintain a relationship to the target solution.

The following examples depict two-, three-, and four-level WBSs. These are partial examples because only one item at each level has been expanded to the next level. A complete WBS expands to the level needed to define and manage each item. Normally, different items are expanded to different levels.

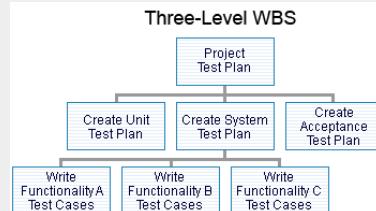
Click each tab to read the examples.

Two-Level WBS



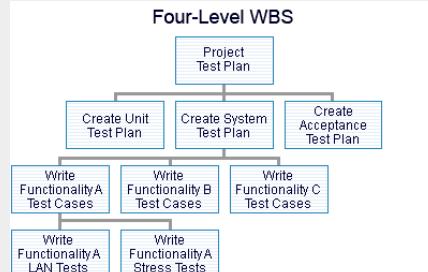
The second level is a decomposition from the first level. The entire project test plan includes the unit test, a system test, and an acceptance test.

Three-Level WBS



The third level is a decomposition of the system test second-level element. For a complete third level, all elements from the second level must be expanded. The system test plan includes test cases for functionality A, B, and C.

Four-Level WBS



The fourth level is a decomposition of the third-level element, which is to write test cases. For a complete fourth level, all elements from the third level must be expanded. Obviously the WBS example becomes unwieldy for a normal project. For this reason, the WBS can also be depicted as an indented list.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures

Fast Points

- Project Decomposition
- Product Breakdown Structure
- Work Breakdown Structure
- Work Breakdown Structure (Continued)

Creating the WBS

- The WBS Dictionary
- Work Breakdown Structure - Question 1
- Work Breakdown Structure - Question 2

Organizational Breakdown Structure

Seven Keys

WWPMM

Mentor

Case Study

Self-Check

6: Risk Management

7: Project Estimates

8: Project Schedules

9: Change Management

10: Project Control and Delivery

11: Project Management Review

12: Project Closeout

13: Project Management Tool Suite

14: Self-Assessment and Final Exam

Preferences

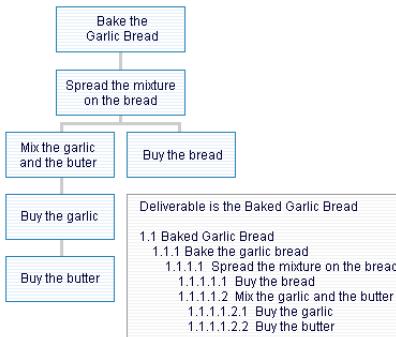
Work Breakdown Structure

Creating the WBS

How to Get Started Creating the WBS

Think about the garlic bread example.

Sample WBS for Garlic Bread



The questions to ask yourself as you start to create a WBS are:

- What needs to be done? Make a list. For example, to create the garlic bread, you need to buy the bread, butter and garlic; put the garlic and butter on the bread; and bake the bread.
- Which activities are at the lowest level? Figure out which activities have dependencies on each other and which ones should be done first. For example, you must buy the butter and garlic before you can mix them together.
- Where do the activities fit in the WBS? The last activity is on the top and all the predecessor activities are below. The first tasks would be at the bottom of the list. When you read this in chronological order you will be reading up from the bottom. Thus the first activities in the example are to buy the garlic, butter, and bread and the last activity is to bake the bread.

Creating the WBS

Follow these guidelines to create the WBS:

- Gather all the data as follows:
 - Gather all project-related materials that define the solution, approach, and scope, including the PBS.
 - Review WBSs that were created for similar projects.
- Prepare the WBS showing high-level activities for the major subprojects and major work products. One of the most common ways to do this is to write each of the activities on small sheets of note paper and attach the sheet of paper to the wall. The advantage of doing this is that you can easily move the notes as needed.
- Refine the structure using iterative decomposition.
- Decompose to the level of manageable and trackable work packages.
- Include project support work products such as project management status reports and QA reports.
- Add activities for risk reduction and risk management.
- Ensure that the WBS contains all the work for the entire project. Include all the activities that will add costs to the project.
- Involve your team members in the development of the WBS because you will not be able to provide all of the information yourself.
- Refine the structure iteratively on each level. Try several alternatives for each level.
- Ensure that the work packages that are the lowest level of the WBS are assigned as the responsibility of one project organizational unit or individual.

Review the WBS with others to get their agreement as follows:

- Review the WBS with appropriate stakeholders.
- Receive support from the personnel who are responsible for work packages.

Questions to Consider

Ask the following questions as you are developing or reviewing the WBS:

- As changes occur, how will the WBS be revised?
- How will the WBS be stored and distributed?
- What numbering system will be used?
- How will any software used affect the WBS?
- How will overhead be handled?
- How will risk and risk management be handled?
- How will subcontracting be handled?
- Are project management elements complete?
- Can you assign responsibility to an organization or individual?
- Do you have support from the personnel who are responsible?
- Can elements be verified?
- Can acceptance criteria be defined?
- Can performance be monitored?
- Can you capture cost information?

The Foundation of Project Planning



The WBS is the foundation of the project in terms of cost estimating, planning, budgeting, funding, estimating, scheduling, status reporting, managing risks, measuring performance, and managing change. The WBS is used throughout the project as a tool for communication, and it grows and develops with the project from the first day. If the project plan is revised, the WBS must also be revised.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Work Breakdown Structure (Continued)
 - Creating the WBS
 - The WBS Dictionary
- Work Breakdown Structure - Question 1
- Work Breakdown Structure - Question 2
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Work Breakdown Structure

The WBS Dictionary

The **WBS dictionary** is a repository for descriptions of work elements and other key information such as budgets, basis of estimate, and staffing. The dictionary contains detailed background information about each work element. It might also include acceptance and completion criteria. Using the dictionary, team members can capture information about each activity.

After an activity is defined, that definition remains throughout the project. The definition is used to explain activities to employees and to clarify where work begins and ends on an activity.

The dictionary helps determine whether the project manager has identified the skills needed to do the work.

It should contain the following information for each element:

- Identification of the element
- Title of the element
- Description of the work product or the deliverable
- Acceptance criteria (for example, how to know when you are finished and who needs the output)
- Staff estimates
- Cost estimates
- Ownership or participation (for example, who is responsible or who is involved)
- Dependencies



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Work Breakdown Structure (Continued)
 - Creating the WBS
 - The WBS Dictionary
 - Work Breakdown Structure - Question 1
- Work Breakdown Structure - Question 2
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Work Breakdown Structure

Question 1

In a WBS, what terms are used to describe project tasks?

- A. Nouns
- B. Names
- C. Verbs
- D. Nouns and Verbs

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Work Breakdown Structure (Continued)
 - Creating the WBS
 - The WBS Dictionary
 - Work Breakdown Structure - Question 1
 - Work Breakdown Structure - Question 2
- Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Work Breakdown Structure

Question 2

Which of the following questions should be asked when developing a WBS? (Select all that apply.)

- A. As changes occur, how will the WBS be revised?
- B. What will each resource be paid?
- C. What numbering system will be used?
- D. How will the WBS be stored and distributed?
- E. How will any software used affect the WBS?
- F. What resources will be used for the project?
- G. How will overhead be handled?
- H. How will risk and risk management be handled?

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

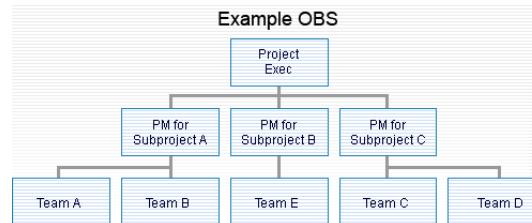
Create Decomposition Structures

Organizational Breakdown Structure

What Is the OBS?

Now that you have decomposed the product (PBS) and the activities (WBS), it is time to think about how the people working on the project will be organized. The OBS shows how the project is organized by displaying the names of staffing resources for a project. It indicates who is responsible for the activities in the WBS. The OBS describes:

- The relationships between the subprojects and the project organizational units
- The reporting relationships between the project organizational units
- The team structure of the project organizational units
- The reporting relationships between the delivery and performing organizations, including the subcontractors



The OBS contains the subproject definitions, the project organizational chart, and the team structure.

The Importance of the OBS

 Have you ever worked on a project that did not have an Organizational Breakdown Structure? What happened? More than likely, project staff did not know who else was working on the different parts of the project, and did not know who to ask when questions arose. The OBS helps project staff understand how they fit into the overall project and how information flows between the units delivering the project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- Creating the OBS
 - Example of an OBS
 - Organizational Breakdown Structure - Question
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Organizational Breakdown Structure

Creating the OBS

To create the OBS, complete the following steps:

- Decide whether each subproject is to be performed directly by the delivery organization, another IBM performing organization, the sponsor or customer, or the subcontractor. Ensure that the selected performing organization has the skills and experience necessary to complete the subproject.
- For each project unit, identify and assign the subprojects.
- If one project unit has responsibility to manage other project organizational units, clearly assign this responsibility in the OBS.
- If a sponsor or customer is responsible for completing one or more subprojects, document the sponsor's or customer's responsibilities as part of the agreement.
- If third-party performing organizations are required, start the process of choosing a subcontractor.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- Creating the OBS
- Example of an OBS
- Organizational Breakdown Structure - Question
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

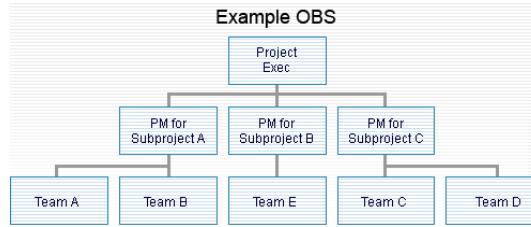
Organizational Breakdown Structure

Example of an OBS

The OBS shows how the project is organized by displaying the names of staffing resources for a project. It indicates who is responsible for the activities in the WBS.

The OBS contains the subproject definitions, the project organizational chart, and the team structure.

The diagram shows an example of an OBS structure.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
 - Creating the OBS
 - Example of an OBS
 - Organizational Breakdown Structure - Question
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Organizational Breakdown Structure

Question

Which of the following statements are true? (Select all that apply.)

- A. The WBS, OBS, and PBS serve as a road map to finish planning the project.
- B. The WBS shows resources.
- C. The OBS identifies all activities and their dependencies.
- D. Creating an OBS provides a picture of the entire project organization.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- 6: Seven Keys

 - WWPM
 - Mentor
 - Case Study
 - Self-Check

- 7: Risk Management
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success**Seven Keys To Success Introduction**



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
 - Seven Keys
 - Scope Is Realistic and Managed
- WWPMM
- Mentor
- Case Study
- Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Scope Is Realistic and Managed Key

Scope Is Realistic and Managed Key

It is unusual for a project to finish without at least one change request to the scope from either the project sponsor or the project team. Therefore, the team must expect scope changes and manage them effectively.

However, if there are many change requests right after the start of the project, the scope has not been well defined. Make sure that the team spends enough time in the planning phase to have a detailed understanding of the project scope.

Scope is realistic and managed



Here are some criteria for assessing the Scope Is Realistic and Managed key:

- Scope management is implemented.
- Proposed and agreed changes to terms are appropriately reflected in costs, schedules, and responsibilities.
- Organization, system, and geographic boundaries are appropriately defined.
- Scope exclusions and assumptions are clear.

As the project manager, look for these signs:

Healthy Signs

- Healthy negotiation is evident.
- Lengthy issues log and issues are being resolved.
- Written agreements are in place.

Unhealthy Signs

- Issue is a bad word.
- Nothing is in writing.

In Agile

Seven Keys :- Scope management is needed in Agile, but it is handled in agreement with the product owner in each iterative cycle. The scope in a agile project is defined as "User stories" by the product owner. He / She may create User Stories for the entire project, but a more detailed requirement and documentation supporting the requirement is mentioned only in the iterative stages.

As you saw in the previous modules, the Stakeholder and Business Benefits keys are closely related.

▼ To which other key do you think the Scope key is related?

Work and schedule are predictable. At the beginning of the project, if the scope is not well defined, it is difficult to accurately estimate the time and effort needed to complete the work. Then during execution, you find the estimates were poor and the project misses deadlines and goes over budget.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
 - Seven Keys
- WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Create Decomposition Structures

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).



WWPMM Practices

- Human Resource Management
- Schedule Management
- Scope Management

WWPMM Activities

- Build Project Organizational Unit Work Plans

WWPMM Work Products

- Deliverable Definition
- Organizational Breakdown Structure
- Product Breakdown Structure
- Work Breakdown Structure
- Work Product List



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
 - Seven Keys
 - WWPMM
- Mentor
- Case Study
- Self-Check
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Create Decomposition Structures

Mentor



Click the photo to listen to Marjorie talk.

Benefits of the PBS, WBS, and OBS

Think about projects you have worked on that did a good job creating the PBS, WBS and OBS. How did these structures help the project manager execute and control the project?

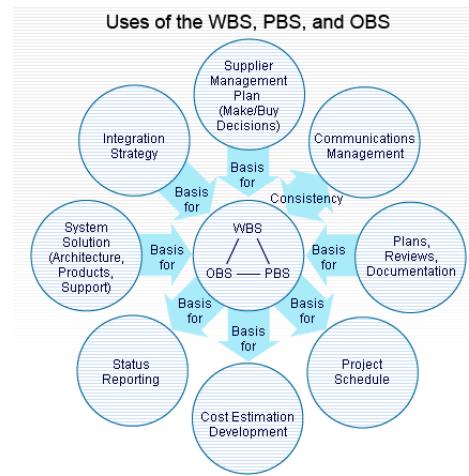
I believe that creating the WBS and the PBS are the most **important** things I do as a project manager. When I create the PBS, I identify all the deliverables and work products (what) first. After I understand the work products, I can start to create the WBS.

The WBS helps me to identify all the (how) activities, including dependencies and hidden issues. As I go through the process, I define the completion criteria for each activity. When I am done, I have a great road map that I can use to help me finish planning the project. I find that I use the WBS through the entire project as a reference point to ensure that I haven't forgotten anything.

The OBS is critical for helping me to plan my resources. By creating an OBS, I have a picture of the entire project organization, which I find very helpful.

Example of Uses of WBS, PBS, and OBS

I really like the following chart, which depicts the uses of the WBS, PBS, and OBS.



At the upper left of this chart, you can see inputs to the WBS, OBS, and PBS: Supplier Management Plan, the Integration Strategy, and the System Solution (Architecture, Products, Support). Other inputs are Plans, Reviews, and Documentation.

The project management outputs from the WBS, PBS, and OBS are the Status Reporting, the Cost Estimation Development, and the Project Schedule at the bottom of the chart. At the upper right is the two-way Communications Management that occurs during the entire project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures

Fast Points

- Project Decomposition
- Product Breakdown Structure
- Work Breakdown Structure
- Organizational Breakdown Structure

Seven Keys

WWPMM

Mentor

Case Study

Self-Check

- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Create Decomposition Structures

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

In this assignment, you will be starting the Project Definition document for the Rest Easy Hotel training project.

To complete the assignment:

1. Read the three attached files, *Rest Easy Charter.doc*, *Module 5 Solution PBS.ppt* and *Module 5 Solution OBS.ppt*. The last two are the completed PBS and OBS for the Rest Easy Hotels Improvement Training Subproject.
2. Open the attached file, *Module 5 WBS start.doc*.
3. Based upon the completed PBS and OBS and your Project Definition, complete the WBS for this subproject.



Rest Easy Charter

Module 5 Solution PBS

Module 5 Solution OBS

Module 5 WBS Start



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- 6: Seven Keys
 - WWPMM
 - Mentor
- Case Study

 Case Study Solution Self-Check

- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

Check your work on the assignment by comparing it with the solution in the attached file.



Module 5 WBS Solution



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- 6: Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 7: Risk Management
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check

 Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 6: Risk Management 7: Project Estimates 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 1 of 10

Which of the following best describes decomposition?

- A. Identifies the cost basis for all work to be performed
- B. Subdivides the major project deliverables into smaller, more manageable components
- C. Identifies all work products and deliverables
- D. Documents the staffing requirements and assigns work units to the resources



Project Management Orientation

- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- 6: Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- 8: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 2 of 10

What is a WBS?

- A. A decomposition hierarchy that identifies all work products and deliverables
- B. A decomposition hierarchy that determines how the work products and project solution will be built
- C. A decomposition hierarchy that clearly defines the project schedule and the budget that will be used
- D. All of the above



Project Management Orientation

 4: Identify and Validate Requirements 5: Create Decomposition Structures Fast Points Project Decomposition Product Breakdown Structure Work Breakdown Structure Organizational Breakdown Structure Seven Keys WWPM Mentor Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 6: Risk Management 7: Project Estimates 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 3 of 10

The first level of a PBS is the project, what is the second level of the PBS?

- A. A work product
- B. A component
- C. A deliverable
- D. None of the above

Submit Answer



Project Management Orientation

 4: Identify and Validate Requirements 5: Create Decomposition Structures Fast Points Project Decomposition Product Breakdown Structure Work Breakdown Structure Organizational Breakdown Structure Seven Keys WWPMM Mentor Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 6: Risk Management 7: Project Estimates 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 4 of 10

Which of the following is a guideline for creating a PBS? (Select all that apply.)

- A. Must use a verb
- B. Refine each part of the PBS to the level of manageable work products
- C. Add elements to manage risks
- D. Include project support work products from project management and quality assurance



Project Management Orientation

 4: Identify and Validate Requirements 5: Create Decomposition Structures Fast Points Project Decomposition Product Breakdown Structure Work Breakdown Structure Organizational Breakdown Structure Seven Keys WWPM Mentor Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 6: Risk Management 7: Project Estimates 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 5 of 10

When is a WBS used?

- A. Only in the planning stage of the project
- B. Only in the delivering stage of the project
- C. Throughout the project, from beginning to end
- D. Only in the defining stage of the project



Project Management Orientation

- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
 - Fast Points
 - + Project Decomposition
 - + Product Breakdown Structure
 - + Work Breakdown Structure
 - + Organizational Breakdown Structure
- + Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- + Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
- + Question 6
- Question 7
- Question 8
- Question 9
- Question 10

+ 6: Risk Management

+ 7: Project Estimates

+ 8: Project Schedules

+ 9: Change Management

+ 10: Project Control and Delivery

+ 11: Project Management Review

+ 12: Project Closeout

+ 13: Project Management Tool Suite

+ 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 6 of 10

Which of the following should be included in the WBS dictionary? (Select all that apply.)

- A. Title of the element
- B. Description of work product or deliverable
- C. Acceptance criteria
- D. Staff estimates
- E. Ownership or participation
- F. A, B, and D only

Submit Answer



Project Management Orientation

 4: Identify and Validate Requirements 5: Create Decomposition Structures Fast Points Project Decomposition Product Breakdown Structure Work Breakdown Structure Organizational Breakdown Structure Seven Keys WWPMM Mentor Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 6: Risk Management 7: Project Estimates 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 7 of 10

Why should you look at alternative decompositions?

- A. To permit measurable milestones
- B. To avoid or reduce risk
- C. To document risks
- D. Both A and B



Project Management Orientation

- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- + Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- + 10: Project Control and Delivery
- + 11: Project Management Review
- + 12: Project Closeout
- + 13: Project Management Tool Suite
- + 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 8 of 10

If a sponsor or customer is responsible for completing one or more subprojects, then document his or her responsibilities as part of an agreement.

- A. True
 B. False

Submit Answer



Project Management Orientation

- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
 - Fast Points
 - + Project Decomposition
 - + Product Breakdown Structure
 - + Work Breakdown Structure
 - + Organizational Breakdown Structure
- + Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- + Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
- + Question 10

Self-Check

Question 9 of 10

What does the OBS describe? (Select all that apply.)

- A. Reporting relationships between delivery and performing organizations, including subcontractors
- B. Team structure of project organizational units
- C. Team meeting schedule
- D. Reporting relationships between project organizational units

[Submit Answer](#)

Preferences



Project Management Orientation

- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
 - Fast Points
 - Project Decomposition
 - Product Breakdown Structure
 - Work Breakdown Structure
 - Organizational Breakdown Structure
- 6: Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
- Question 10

- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

[Preferences](#)

Self-Check

Question 10 of 10

If the scope is not realistic and managed, then it is likely that work and schedule are not predictable.

- A. True
 B. False

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Module 6 Objectives

This module enables you to:

- Develop a risk management plan
- Describe the Risk Management process
- Describe the healthy and unhealthy signs of the Risks Are Being Mitigated key

This module takes approximately 1 hour 50 minutes to complete.

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- Fast Points
- Risk Management
- Identifying Risks
- Analyzing Risks
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Fast Points

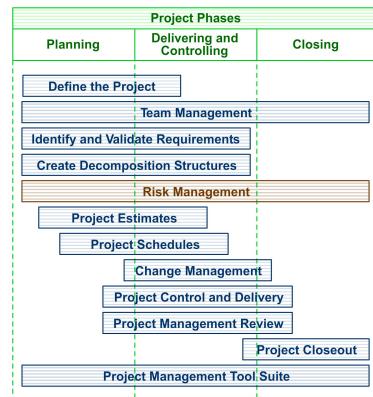
The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Risk Management", which is covered throughout all the project phases: Planning, Delivering and Controlling phase, and the Closing phase.

Risk management is proactive decision making. The Risk Management process provides for an iterative means to plan, track, and react to risk. As a part of this process, you create a risk management plan to identify risks you might encounter on your project. When creating a risk management plan:

1. **Identify the risks.**
 - Ask what risks could be a potential loss or lead to negative consequences to the project.
2. **Analyze the risks.**
 - Look at each risk and determine the probability and impact of each one.
3. **Create a risk response plan.**
 - Decide, what, if anything, should be done with each risk.
4. **Track and control the risks.**
 - Continually collect and analyze data about the risks to determine what actions, if any, must be taken.
5. **React to the risks.**
 - Implement the identified action plan in response to an actual risk.

The risk mitigation is what you do to ensure that the risk event does not happen. Risk response is what you do when it does happen. So the risk management plan is the whole response process.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Risk Management

What Is Risk Management?

Risk management provides an environment for proactive decision making. As a framework for the iterative process of planning, tracking, and reacting to risk, the risk management process includes:

- Continuously assessing risks
- Determining which risks are important enough to address
- Defining and implementing strategies and plans to address risks, if they occur

To address changing conditions and project priorities, you must analyze risks throughout the life of the project, beginning in the project selection phase. As new risks are identified, you must develop strategies and plans to address them.

Risk Management Steps

The following chart shows the steps that you follow when performing risk management. Remember, risk management is an iterative process. You must go through this entire process regularly to ensure that any new risks are identified and addressed.

Note: Step 4 (risk tracking and control) and step 5 (risk reaction) are covered in Module 10, "Project Control and Delivery."

Step 1: Risk Identification

In Step 1, search for and identify the risks. Determine risks that could be a potential loss or lead to negative consequences for the project. Also, look for risks that represent opportunities that might be exploited.

Step 2: Risk Analysis

In this step, define the probability and impact of each risk to determine the exposure. You can then prioritize the risks to determine how the project team is going to address each one.

Step 3: Risk Response Planning

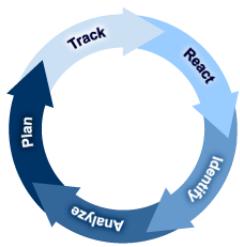
In this step, you decide what, if anything, should be done with the risk. To help you decide, consider the responses to the following questions: Who owns the risk? What should be the response to the risk? What actions and plans should be put in place to address the risk?

Step 4: Risk Tracking and Control

In Step 4, you continually collect and analyze data about the identified risks to determine whether action must be taken.

Step 5: Risk Reaction

In this final step, implement the identified action plan in response to actual risk occurrence. You also close the risk, if appropriate.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
- Your Role in the Risk Management Process
- Risk Management - Question
- Identifying Risks
- Analyzing Risks
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Your Role in the Risk Management Process

You, as project manager, are responsible for managing risk. Your role includes the following:

- Facilitating the risk management process
- Incorporating risk management into project management planning
- Maintaining the visibility of risk management throughout the project plan
- Identifying and analyzing risks
- Monitoring risk on a regular basis
- Responding to risks
- Reviewing and assessing risks after each event
- Calling for independent reviews, when needed



Considering the Objectives of Stakeholders in Risk Management

Because perceptions of risk might be affected by a stakeholder's objectives, try to involve all stakeholders in the risk management process early in the project life cycle.

Involving as many stakeholders as possible in the risk management process helps to ensure that the greatest number of potential risk factors and risk events are found and that resulting strategies more closely meet stakeholder objectives.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Your Role in the Risk Management Process
 - Risk Management - Question
- Identifying Risks
- Analyzing Risks
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Question

Which of the following are responsibilities of the project manager? (Select all that apply.)

- A. Incorporating risk management into project management planning
- B. Identifying and analyzing risks
- C. Monitoring risk on a regular basis
- D. Reviewing and assessing risks after each risk event
- E. Conduct independent reviews

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
- Identifying Risks
- Analyzing Risks
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Identifying Risks

Identifying Risks

When you identify risks, your goal is to list all of the significant potential risk events that could affect the outcome of the project.



Types of Risk

The four types of risk are business, pure, known, and unknown. Following are definitions and examples of each type:

- **Business risk.** A business risk is a normal risk of doing business with opportunity for gain or loss; for example, the release of a new product.
- **Pure risk.** A pure risk is a risk that presents an opportunity for loss only; for example, an earthquake.
- **Known risk.** A known risk is a risk that can be anticipated, managed, and controlled; for example, the slowdown of sales after Christmas.
- **Unknown risk.** An unknown risk is a risk that is not planned for and not recognized; for example, the release of a competitive product.

Components of Risk

- All project risks share some common components.
- A risk is something that can negatively affect the project.
- The probability that the risk will occur is greater than 0 and less than 1. A probability of 1 means it will happen. If you know it will happen, it is not a risk but a certainty that you must contend with.
- A risk is tied to a future event, typically a project milestone or project phase.

For managing risk, there is one more component to consider:

- A risk must have conditions around it that can be managed.
- A risk event is when a risk occurs, or might occur.

Risk Factors

A **risk factor** is a situational factor that has been identified as leading to a risk. Risk factors should be identified early and projects should be reviewed regularly to ensure that no significant risk events are overlooked. Repeat the risk identification process on a regular basis, as part of your key checkpoints or key milestones. When developing the list of risks, be thorough, but realistic.

To begin, first look for risk factors such as poor estimates, requirement changes, or design errors. You can then determine possible events from these factors.

When you identify the timing when a risk event can occur, consider whether it is a one-time risk or if the risk can occur more than once. Most risks identified early in a project are one-time risks, but consider a risk of not being able to complete a step in the project because a client does not provide you with data that they are obligated to provide monthly. Every month there is a chance of missing a delivery to your project so that the frequency of this risk is monthly.



The purpose of this step is to create a complete list of risks. So avoid analyzing risks at this stage of the process. You will do that next.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
- Identifying Risks (Continued)
- Identifying Risks - Question
- Analyzing Risks
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identifying Risks

Identifying Risks (Continued)

Using Inputs to Identify Risk Events

A variety of inputs should be used to help identify risk factors and risk events. For example, when using the WBS, look at each work product and consider what can go wrong. In this instance, the WBS is the input. Examples of other inputs include:

- Contractual requirements or statements of work (SOWs)
- Supplier contracts or customer agreements
- Field and marketing information
- Project plan assumptions
- Earned value (EV) data
- Offerings portfolio
- Lessons learned files from previous projects
- Company objectives and plans
- Other project-related plans
- Project schedule
- Review reports
- Project plan dependencies
- Resource sourcing
- Sponsor or other stakeholder feedback

As you progress on the project, some other areas to look at are:

- Change requests
- Issue documents
- Event log
- Project status reports

Questions That Help Identify Risks

Following is a list of questions related to key project areas that might help you to identify risks:

- **History.** Has the risk event occurred before?
- **Familiarity with the operation.** Has the work been done before?
- **Skills.** Does the staff have the ability to do the work?
- **Resources.** Are there adequate materials to complete the work?
- **Time.** Does adequate time exist to complete the work?
- **Quality.** Is the team confident about the quality of work required?
- **Cost.** Is funding sufficient to complete the work?

Techniques for Identifying Risks

Some of the many techniques and tools to identify risks using input from other people include:

- Expert interviews
- Idea-generation techniques, such as brainstorming, affinity diagram, and nominal group technique
- Lessons learned from other project managers and the "lessons learned" files from other projects



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Identifying Risks (Continued)
 - Identifying Risks - Question
- Analyzing Risks
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Identifying Risks

Question

Which of the following would you use to help identify risks? (Select all that apply.)

- A. Contractual requirements or statements of work (SOWs)
- B. Supplier contracts or customer agreements
- C. Project plan assumptions
- D. Lessons learned files from previous projects
- E. Project schedule

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- Project Estimates
- Project Schedules
- Change Management
- Project Control and Delivery
- Project Management Review
- Project Closeout
- Project Management Tool Suite
- Self-Assessment and Final Exam

Preferences

Risk Management

Analyzing Risks

The Purpose of Risk Analysis

The purpose of risk analysis is to gather data about risk events. You can then use this data to decide which risk events to mitigate.

Risk analysis is a continual process conducted throughout the life of the project. As the project progresses, the analysis for a risk event might change due to changes in the environment.

Risk analysis includes:

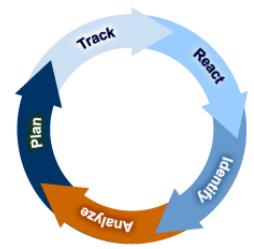
- **Evaluating.** In this phase of the process, you estimate the probability that a risk event will occur and the resulting impact. You then use these estimates to determine the severity of the risk to the project.
- **Prioritizing.** After determining risk exposure, you decide the order in which the risks require attention.

Defining Probability and Impact

To evaluate a risk event, you examine the probability of the risk occurring and the impact it will cause if it does occur. You can use either a qualitative or quantitative approach to estimating.

Estimating Probability

To estimate probability, ask yourself what the probability is that this event will occur.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
- Qualitative Analysis
- Quantitative Analysis
- Prioritizing Risks
- Analyzing Risks - Question 1
- Analyzing Risks - Question 2
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Analyzing Risks

Qualitative Analysis

Estimating Probability Using a Qualitative Analysis

Using a **qualitative** analysis to estimate probability, you assign a low, medium, or high category to the probability that the event will occur as follows:

- **Low.** The event has little chance of occurring.
- **Medium.** The event has some chance of occurring.
- **High.** The event is likely to occur.

Because low, medium, and high are relative terms, ensure that everyone on your team involved in the process of estimating probability uses these terms similarly.

To illustrate, consider an example of a person skydiving. When a person is skydiving, a parachute malfunction is a risk with a low probability.

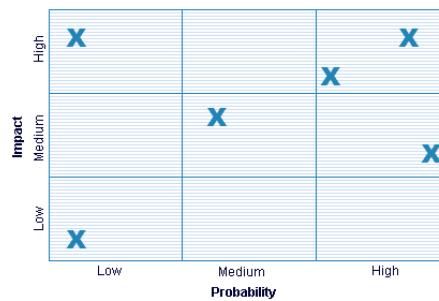
Defining the Impact Using a Qualitative Analysis

After you define the probability for each risk event, you define the impact. To do so, ask yourself, what the impact to the project will be if this risk occurs. In a qualitative analysis, impact can be categorized as low, medium, or high, as follows:

- **Low.** The event has little potential to disrupt the schedule, increase the cost, or degrade performance.
- **Medium.** The event has some potential to disrupt the schedule, increase the cost, or degrade performance.
- **High.** The event is likely to seriously disrupt the schedule, increase the cost, or degrade performance.

In the skydiving example mentioned earlier, if the parachute does not open, the impact is (no pun intended) high.

The following graphic shows the relationship between impact and probability. The vertical axis represents impact, and the horizontal axis represents probability. Each 'X' represents a specific risk; by placing the 'X' in the diagram, you can see their impact, probability and global qualitative value.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Qualitative Analysis
- Quantitative Analysis
- Prioritizing Risks
- Analyzing Risks - Question 1
- Analyzing Risks - Question 2
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Analyzing Risks

Quantitative Analysis

Estimating Probability Using a Quantitative Analysis

Another approach to estimating probability and impact is a **quantitative** analysis. A quantitative method uses a numeric scale, usually from 0 to 1, to measure the probability of an event occurring, where 0 means an event would **not** occur and 1 means it will occur. The impact is measured in the same way, where 0 means no impact and 1 means the maximum impact possible.

Using the parachute example, the risk of an FAA licensed dual-parachute (a back-up chute is required) failure as determined from US FAA data collected in 2005 is .000016 (35 incidents from over 2,000,000 jumps), but since death is the result, the impact of a dual-parachute failure is 1.0.

Assessing Risk Exposure

Impact	Probability		
	Low	Medium	High
High	Significant Risk	Major Risk	Maximum Risk
Medium	Minor Risk	Significant Risk	Major Risk
Low	Minor Risk	Minor Risk	Significant Risk

Risk exposure is a combination of the probability and the impact of the risk. The project manager is responsible for determining the risk exposure, using probability and impact estimates and the following matrix tool. Risk exposure has more than one dimension, such as cost, schedule, quality, and customer satisfaction, that should be considered.

In this matrix, the risk decreases as you move from right to left, or top to bottom. To illustrate, in the parachute example, low probability and high impact results in a medium risk exposure.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Qualitative Analysis
 - Quantitative Analysis
 - Prioritizing Risks
- Analyzing Risks - Question 1
- Analyzing Risks - Question 2
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
- WWPM
- Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Analyzing Risks

Prioritizing Risks

Prioritizing risks involves deciding whether risk events are worthy of attention. Placing one risk next to another risk enables you to achieve clarity and understanding beyond risk analysis. For example, you might have to decide between losing \$1 million on a \$40 million project or coming in a month late on a critical project with a \$40 million client. Although neither risk is good, it might not be possible to respond to both.

Prioritizing risks also highlights when you are using too fine a level of detail in your risk analysis. The process of prioritizing risks also allows you to develop a sense of your project's and organization's level of risk tolerance. Prioritization is effective only when you use defined selection criteria.

To prioritize risks, confer with team members and use the following practical approach:

- Rank evaluated risks from highest to lowest.
- Use quantitative rankings when possible; otherwise, use qualitative rankings.
- Separately rank risks with similar ratings.
- Prioritize risks as a team.

When prioritizing risks, working as a team is an important, although challenging, task. Team members might often have different opinions about the impact or probability of a risk because the risk might not have an amount of money associated with it. For many risks, the impact and probability can be expressed only in relative terms.

Avoid planning response strategies during this step.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Qualitative Analysis
 - Quantitative Analysis
 - Prioritizing Risks
- Analyzing Risks - Question 1
- Analyzing Risks - Question 2
- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Analyzing Risks

Question 1

Risk exposure is a combination of what two things?

- A. Probability and impact
- B. Impact and severity
- C. Frequency and impact
- D. Severity and frequency

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Qualitative Analysis
 - Quantitative Analysis
 - Prioritizing Risks
 - Analyzing Risks - Question 1
 - Analyzing Risks - Question 2

- Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Analyzing Risks

Question 2

What is included in a list of identified risks?

- A. Probability
- B. Impact
- C. Frequency
- D. Both probability and impact

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Risk Response Planning

What Is Risk Response Planning?

Risk response planning is deciding what, if anything, should be done with a risk. It is the assignment of actions to contain, reduce, or eliminate risks. Risk response includes:

- Assigning owners to individual risks
- Selecting options for addressing individual risks or groups of related risks
- Defining mitigation, contingency, and reserve plans
- Reviewing a risk management plan

According to WWPMM, these are the strategies that you can use to respond to risks:

- **Accept.** Risk acceptance means that you are willing to accept the consequences of the risk.
- **Transfer.** Using a transfer strategy, you transfer all or a portion of a risk to another party.
- **Use Insurance.** When you have insurance coverage, you can use it to cover the cost of a risk event.
- **Use Reserve.** Use funds previously set aside for this purpose.
- **Risk Containment**
 - **Mitigation.** When mitigating risk, you take specific action to minimize or avoid the occurrence and effect of a risk.
 - **Contingency Planning.** In this strategy, you develop a plan of action to respond to a risk if it occurs.

These strategies are presented in more detail on the next page.

The PMBOK has a similar definition of risk response strategies, but calls them Avoid, Transfer, Mitigate, and Accept.

Risk Triggers

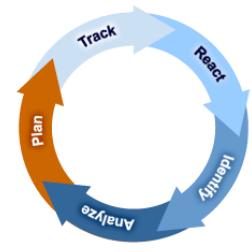
An important part of defining the risk containment plans is risk triggers. Risk triggers are indicators that specify when an action must be taken. If the trigger event happens, then initiate the action plan.

Examples of triggers and action plans include:

- If the power is out for more than 30 minutes, start using the generator.
- If the product delivery from the OEM vendor is n days late, then contact the other vendors to move their shipments back.

Effective triggers:

- Provide an early warning, which gives the team enough time to take appropriate action or focus extra attention on the risk.
- Do not initiate actions unnecessarily.
- Are easy to calculate and report.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
- Risk Response Planning (Continued)
- Risk Response Planning - Question 1
- Risk Response Planning - Question 2
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Response Planning

Risk Response Planning (Continued)

Risk Response Options

Starting with the prioritized list of risk events, you must select the best risk response option. Following is a list of the options you might use for the identified risks:

- **Transfer risk.** Determine if the accountability, responsibility, and authority for the risk belongs to the project or to another organization. Transfer implies ultimate accountability, responsibility, and the authority to expend required resources to mitigate the risk that exists outside of the delivery organization. Transfer requires the acceptance of risk by the other party. In risk transfers the risk is not removed from the project, it should still be tracked as a project risk.
Options for transfer include transferring the risk to a sponsor or supplier through terms in an agreement, to an IBM organization in a business unit not connected with the project through formal written documentation, or to an IBM organization in the same business unit as the delivery team through informal written documentation.
For risks **not** transferred, determine who will own them within the project.
- **Insurance.** When you have coverage, use it to cover the cost of the risk event.
- **Risk Reserve.** In this type of response, you make the decision to use monies set aside for risk management reserve or risk contingency reserve.
 - Using management reserves is an alternative to increasing the price of the project to the sponsoring organization. Generally, establishing and using management reserves is controlled by the delivery organization policy.
 - Contingency is a reserve held outside of the project cost baseline for future situations affecting project cost or schedule. It is not held for specific risks but at an aggregate level. The risk contingency reserve is held inside of the project cost baseline and used to address future situations affecting project cost or schedule.
- **Risk Containment.**
 - In risk mitigation, you take steps to lessen risk by lowering the probability of a risk occurrence or by reducing its effect on the project.
 - In risk contingency planning, you develop a plan for defining actions to be taken if the risk occurs.

Factors to Consider When Planning Risk Response

Many factors influence the selection of a risk mitigation strategy, including:

- Project phase and application
- Size
- Priority
- Complexity
- Expense
- Time available
- Required level of detail
- Ease of use
- Resource availability
- Contract type
- Terms and conditions
- The project manager's authority, accountability, and ability
- Commitment from the project manager and upper management
- Customer satisfaction

Impact of Different Risk Options

Some project elements can be affected by different risk options. For example:

- The transfer of a risk affects the project scope or the contract. For example, a high-risk deliverable might be transferred to a subcontractor. The scope might then change because the requirement for research and design might be decreased by the transfer, or the scope of the deliverable might not change but the project length might. If the subcontractor specializes in the particular deliverable and its support, this transfer of risk might be acceptable to the sponsor as a response for the high technical risk.
- To use an insurance policy, the policy must be accounted for in the budget, as well as the person who will find, arrange, administer, or pay for the insurance.
- Risk might not change any of the project elements. In most cases, an accepted risk indicates that no more money or time will be allocated to the risk. The consequences are accepted. What if the risk occurs? Does anything change?



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Response Planning (Continued)
 - Risk Response Planning - Question 1
- Risk Response Planning - Question 2
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Response Planning

Question 1

The primary objective of risk response planning is to:

- A. Determine what, if anything, should be done with a risk.
- B. Take the guesswork out of the risk response management process.
- C. Compare the cost of risk response to the expected monetary value.
- D. Improve the accuracy of risk assessment.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Response Planning (Continued)
 - Risk Response Planning - Question 1
 - Risk Response Planning - Question 2
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Response Planning

Question 2

Which of the following are factors that affect the selection of a risk mitigation strategy?

- A. Customer satisfaction
- B. The project manager's authority, accountability, and ability
- C. Commitment from the project manager and upper management
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
- Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Risk Management Plan and Risk Log

What Is a Risk Management Plan?

In the risk management plan, you document how you will identify, analyze and mitigate risks for the project.

What Is a Risk Log?

The risk log contains these components for every risk that is identified for the project:

- **Risk Priority.** Enter the priority rating for the risks in this column. The most severe risk (that is, the risk that poses the greatest danger to the project) is ranked number 1.
- **Risk Identification.** To help track the risks, assign each risk a risk identification number (RIN). As the project proceeds and new risks are identified, the priority ratings change but the RIN number remains the same.
- **Risk Description.** Provide a description of the risk in this column.
- **Risk Analysis/Revision.** Document the probability and the impact if the risk event were to occur.
- **Risk Management Plan Summary.** Summary of the risk mitigation plan.
- **Risk Reassessment History.** This document changes during the project as risks change, as you execute the response plans, and as conditions change.

As the project manager, you should look at this document regularly to determine whether any new risks should be added or old risks removed. You should also determine whether any of the response plans require change.

Your risk log is one of the key documents that a project reviewer checks for content and for evidence of updated activity.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
- Creating a Risk Log
- After Completing the Risk Management Plan

Preferences

Risk Management Plan and Risk Log

Creating a Risk Log

Various pieces of information exist for each risk event. In addition, a variety of formats are used to create the risk log. The following example shows a completed risk log in table form.

Rank	RIN	Description	Analysis	Management Plan	Actions
1	2	Insufficient time to perform product verification test	<ul style="list-style-type: none"> Impact H Probability H 	<ul style="list-style-type: none"> Have available personnel work overtime Plan activities Negotiate with client or project sponsor for more time 	<ul style="list-style-type: none"> PM to contact team and inform them to start working overtime PM to plan activities PM to negotiate with client or project sponsor for more time
2	4	WBS review by lead tester	<ul style="list-style-type: none"> Impact H Probability M 	<ul style="list-style-type: none"> Hire testing firm to validate open systems standards 	<ul style="list-style-type: none"> PM to hire testing firm to validate open systems standards
3	1	Incomplete UCD analysis results in user interface problems	<ul style="list-style-type: none"> Impact M Probability M 	<ul style="list-style-type: none"> Use Joint Application Design (JAD) to determine initial requirements Use task analysis to better understand potential client or project sponsor's environment Build prototype 	<ul style="list-style-type: none"> PM to use JAD to determine initial requirements PM to use task analysis to better understand potential client or project sponsor's environment PM to add a step to the project plan for build prototype
4	5	Use of new IPD methodology will delay schedule	<ul style="list-style-type: none"> Impact M Probability L 	<ul style="list-style-type: none"> Cancel annual leave, send staff to training Hire outside expert to act as coach Use on-the-job training approach-give everyone the material and tell them they must know it by a certain date 	<ul style="list-style-type: none"> PM to cancel annual leave and make arrangements to send staff to training PM to hire outside expert to act as a coach PM to gather the material and give it to each member of the staff and tell them they must know this material by a date
5	3	Elements not fully integrated into OS public build	<ul style="list-style-type: none"> Impact L Probability L 	<ul style="list-style-type: none"> Create OS development SWAT team to complete all necessary items quickly Negotiate with senior management for more time 	<ul style="list-style-type: none"> PM to create OS swat team PM to negotiate with senior management for more time

Sample Risk Log

Note: You should use the more comprehensive risk log template that WWPMM provides. This template is available on the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Creating a Risk Log
- After Completing the Risk Management Plan

Preferences

Risk Management Plan and Risk Log

After Completing the Risk Management Plan

After the risk management plan is prepared, complete the following tasks:

- Review the plan with the project team and obtain their buy-in.
- Conduct an independent review to identify items you might have missed, to validate selected strategies, and to suggest possible alternatives for selected strategies.
- Update all related documentation.
- Ensure that the risk management plan is visible in the initial project review, in the concept decision checkpoint (DCP), and to the sponsor and management.

Template and Work Product Description



To assist you in creating a risk management plan, a WWPMM risk management plan work product description and a template are available on the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
- 7: Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Estimates
- 9: Project Schedules
- 10: Change Management
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success Introduction



Risks are being mitigated



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
- Risks Are Being Mitigated
- WWPM
- Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Risks Are Being Mitigated Key

Risks Are Being Mitigated Key

This key is often misunderstood. It is not about whether a project has risks; every project has risks. Rather, this key is about determining whether a risk management plan exists, whether the plan has been communicated to team members, and whether it is being actively used. Here are some criteria for assessing the Risks Are Being Mitigated key.

- The risk management plan is fully implemented, maintained, and supported.
- Risks are appropriately sought in meetings and discussions are dutifully identified.
- Risk tracking and reporting are timely.
- Mitigations are effective.

Risks are being mitigated



So the Risk key is about whether the risk management is working properly. While other keys could be red, this key could still be green because risk management is working as it should be working. On the other hand all other keys could be green and this key could be red if this is the only key needing corrective action.

Here are the signs to look for:

Healthy Signs

- The risk plan is documented.
- Test-it-first tactics are used.

Unhealthy Signs

- The sponsor or team members ask, "What risks?"
- All-or-nothing tactics are used.

On some projects and with some companies, the idea is to go the quickest way, which is almost always the riskiest way. Do not take a risk lightly, and be prepared to mitigate your risks.

It is recommended to proactively be looking for risks in the areas of the other 6 keys using their Risk Management process to support this.

How does the risk key impact the other keys?

Risk management is about being proactive and dealing with issues before they become problems. Without risk management, all of the other keys will be affected. When creating your risk management plan, it is important to identify and analyze risks that may impact all of the keys. Use the Seven Keys as a checklist when creating and updating your risk management plan.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
- WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).



WWPMM Practices

- Risk Management

WWPMM Activities

- Build Project Organizational Unit Work Plans
- Describe Overall Approach
- Finalize Plans for Agreement
- React to Risk Occurrence

WWPMM Work Products

- Risk Log
- Risk Management Plan



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

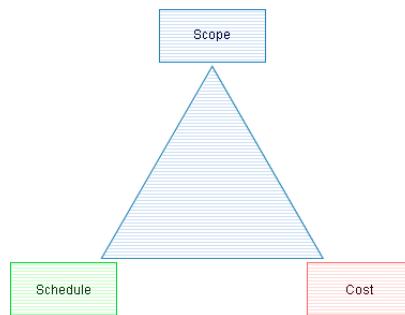
Mentor



Click the photo to listen to Marjorie talk.

Why Is Risk Management Important?

I believe there are risks associated with every project. Using risk management helps me to prevent problems from occurring or to reduce their impact on my project when they do occur. Risk management helps to prevent surprises and the need for crisis management.



The chart on this page represents the triple constraints for projects.

If one element changes due to a risk event, the other two elements are affected. Risk management helps me to reduce the impact of those risk events on each of the three constraints, helping to make my projects more successful.

The risk management plan enables me to define what needs to be done to reduce the risk of the project and to track each of those actions. Because risk management is an iterative process, it is important to look at the risk management plan at each of the major milestones or checkpoints. If you never look at the risk management plan after you initially create it, the plan will not help you.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
- 7: Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Risk Management

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

To complete the task for this module:

1. Review the project definition created in Module 2, the WBS created in Module 5, and the attached document, Interviews with Front Desk Staff.pdf.
2. Based on all the information you have about your subproject, create a risk log using the attached Word file, Module 6 Risk Log Template.doc. Identify six to eight risks for the Rest Easy Hotels training. Analyze and prioritize each risk and then document the plan for each risk. To help you get started, the template includes one identified risk.



Interviews With
Front Desk Staff



Module 6 Risk
Log Template



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
 - Case Study Solution
- + Self-Check
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- + 10: Project Control and Delivery
- + 11: Project Management Review
- + 12: Project Closeout
- + 13: Project Management Tool Suite
- + 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

Check your work on the assignment by comparing it with the solution in the attached file.



Module 6 Risk Log Solution



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check

Question 1

- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- Question 7
- Question 8
- Question 9
- Question 10
- Question 11
- Question 12
- Question 13
- Question 14

Preferences

Self-Check

Question 1 of 15

How is the project risk exposure determined?

- A. By turning it into a known risk
- B. By determining whether it is a business risk or a pure risk
- C. By analyzing its probability and impact
- D. By determining what part of the life cycle it is in

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 2 of 15

Match the type of risk with its definition.

A. Normal risk of doing business with opportunity for gain or loss. For example, the release of a new product.

Business

B. Risk that can be anticipated. These risks can be managed and controlled. For example, sales slowdown after Christmas.

Business

C. Risk that presents an opportunity for loss only. For example, an earthquake.

Business

D. Risk not planned for and not recognized. For example, release of a competitive product.

Business

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 3 of 15

_____ is a framework for the iterative process of planning, tracking, and reacting to risk.

- A. Risk analysis
- B. Risk management
- C. Project management
- D. Project analysis

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 4 of 15

Which step in the risk management process defines the probability and impact of each risk to determine the severity?

- A. Risk identification
- B. Risk analysis
- C. Risk response planning
- D. Risk tracking and control

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 5 of 15

Which of the following are responsibilities of a project manager? (Select all that apply.)

- A. Watching for each risk trigger
- B. Incorporating risk management into project management planning
- C. Facilitating the risk management process
- D. Monitoring risk on a regular basis

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 6 of 15

Which of the following is true about risk identification? (Select all that apply.)

- A. Risk events should be identified early and projects reviewed regularly to ensure that no significant risk events are missed.
- B. The risk identification process should be repeated on a regular basis as part of your key checkpoints.
- C. Be extremely detailed about possible risks, even if they do not at first seem realistic risks; this allows for coverage of all possibilities.
- D. Start a new risk register at the beginning of each project phase.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 7 of 15

You should not ask for input from other people to help determine risks.

- A. True
 B. False

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
- Question 9
- Question 10
- Question 11
- Question 12
- Question 13
- Question 14

Preferences

Self-Check

Question 8 of 15

What are the three factors that characterize project risk?

- A. Severity of impact, duration of impact, and cost of impact
- B. Identification, type of risk category, and probability of impact
- C. Risk event, risk probability, and impact
- D. Occurrence, frequency, and cost

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
- Question 10
- Question 11
- Question 12
- Question 13
- Question 14

Preferences

Self-Check

Question 9 of 15

To rate the probability of an event occurring, which of the following is the best answer?

- A. You can rate the event on a scale of 0 to 4.
- B. You can use qualitative and quantitative analysis.
- C. You can use the intersection of two mathematical equations.
- D. You can rate the event on a scale of 1 to 4.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 10 of 15

When prioritizing risks, which of the following should be done?

- A. Prioritize risks by yourself.
- B. Plan response strategies.
- C. Rank the risks from highest to lowest.
- D. Ignore risks with medium impact and probability.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- Question 11
- Question 12
- Question 13
- Question 14

Preferences

Self-Check

Question 11 of 15

Risk containment uses which of the following tools?

- A. Risk management plan
- B. Analysis
- C. Contingency plan
- D. Severity

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 12 of 15

Which of the following is done to create and implement a risk management plan?

- A. Accept that risk might not change any of the project elements.
- B. Identify risks, analyze risks, and define what, if anything, should be done about the risks.
- C. Assign the actions to project team members.
- D. Both B and C.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 13 of 15

Which of the following is true about risk management?

- A. It is an iterative process.
- B. The risk management plan is static.
- C. Old risks should not be removed from the plan.
- D. Both A and C.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14

Preferences

Self-Check

Question 14 of 15

Which of the following is true about the importance of risk management?

- A. It ensures that the project will be on budget.
- B. It helps reduce the impact of risk in a project.
- C. It eliminates the impact of all risk.
- D. It ensures that the project will be on schedule.

Submit Answer



Project Management Orientation

- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
 - Fast Points
 - Risk Management
 - Identifying Risks
 - Analyzing Risks
 - Risk Response Planning
 - Risk Management Plan and Risk Log
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14
 - Question 15

Preferences

Self-Check

Question 15 of 15

While other keys could be red, the Risks Are Being Mitigated key could still be green because risk management is working as it should be.

- A. True
 B. False

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Module 7 Objectives

This module enables you to:

- Use estimating within project management
- Understand terms and formula used within estimating
- Define what an estimate is
- Determine what should be estimated
- Recognize the difference between effort and duration
- Describe specific types and methods of estimating
- Discuss the estimating process
- Describe what is involved in generating and validating an estimate

This module takes approximately 1 hour 50 minutes to complete.

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- Fast Points
- Introduction to Estimating
- Introduction to Duration and Utilization
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Estimates

Fast Points

The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Project Estimates", which is covered in the Planning phase and about the first half of the Delivering and Controlling phase.

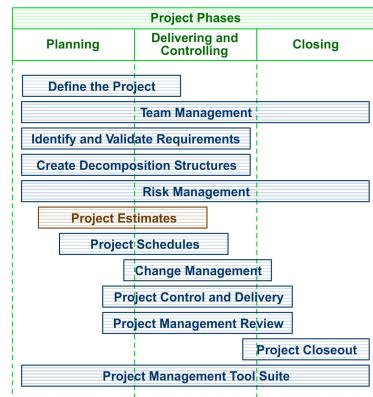
Estimating a project involves predicting the amount and cost of resources required to execute the project. Using an estimate enables you to develop an idea of the final, required budget.

When estimating, follow these guidelines:

1. Establish objectives.
Ask why the estimate is being prepared. What is the required accuracy? Who is the intended audience? When is the estimate needed?
2. Determine details.
Gather the information needed to prepare the estimate and understand how the sponsor's environment might have an impact on the estimate.
3. Select the appropriate tool.
4. Develop a strategy.
Identify the estimators, develop a detailed plan for gathering estimates, determine the type of estimating validation to be used, and review the history of similar projects.
5. Prepare the estimate.
6. Include contingencies associated with risk response planning.
7. Validate and finalize.

Ask if this is an independent estimate or if it will be developed with detailed scrutiny of every aspect of planning and estimating work.

In Agile projects, estimation is done at the start of each iteration, whereas in Waterfall the estimation is done for the entire project.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
- What Is an Estimate?
 - What Is an Estimate? (Continued)
 - Reasons for Estimating
 - Characteristics of an Estimate
 - When Should an Estimate be Completed?
 - Steps in the Estimating Process
 - Steps in the Estimating Process (contd.)
 - Estimating Considerations
 - Introduction to Estimating - Question 1
 - Introduction to Estimating - Question 2
- Introduction to Duration and Utilization
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- Project Schedules
- Change Management
- Project Control and Delivery
- Project Management Review

Preferences

Introduction to Estimating

What Is an Estimate?

WWPMM defines an estimate as an assessment of the likely quantitative result based on experience or historical data from previous projects, if any.

You will usually estimate the number of labor hours, labor costs, and other costs (material, travel, and so on.) for the project. The following terms are a key part of estimating and are used throughout this module:

- **Effort** is the number of labor units required to complete a task. It is usually measured in staff hours, or person-hours. When you think of effort, think of how much labor has to be used on the project. This is normally the first thing that you will estimate on a project.
- **Duration** is the number of work periods, excluding holidays or other nonworking periods, required to complete an activity or other project element. When you think of duration, think of how much time elapses. Later you will learn how to convert effort into duration.
- **Levels of effort** (LOE) activities support projects but are not specifically put into the schedule. For example, you might determine that you will need a half-time administrative person to support the project. You will not list every activity this person will do in the schedule, but you know you need this person's time throughout the project.

An estimate should ideally include some indication of accuracy. Early in the project planning, you won't know all the details about the project, and so your estimates will have a wide accuracy range around them, perhaps as much as 50% under to 100% over. But as you plan the project in detail, you should be able to produce estimates with a narrower range of accuracy, say 5% under to 10% over.

To summarize, an estimate **is**:

- An assessment of the likely quantitative result
- Usually applied to project cost factors and the schedule
- Used with an indication of accuracy (for example, + n%)
- Usually used with a modifier (for example, preliminary, conceptual, feasibility, or final)
- Completed at a level that is appropriate for the decisions being made with the data (for example, close-in estimates are more detailed than estimates for periods three to six months in the future)

However, an estimate **is not**:

- An accounting or marketing strategy
- A pricing approach, because the price might or might not accurately reflect the estimate
- An investment approach, because it is not worth taking a risk today to get business later
- A way to ensure sponsor satisfaction, such as arbitrarily reducing your estimate to meet some implied number (You must present reality.)
- Software or tools
- Finding the fastest way (The schedule should not unduly influence the estimate be realistic and honest.)



HONESTY is the key word when estimating. Do your best to accurately estimate what it will cost to successfully deliver the project. Your estimate can then be used to make business decisions about the price to charge the client or the marketing strategy.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - What Is an Estimate?
 - What Is an Estimate? (Continued)
 - Reasons for Estimating
 - Characteristics of an Estimate
 - When Should an Estimate be Completed?
 - Steps in the Estimating Process
 - Steps in the Estimating Process (contd.)
 - Estimating Considerations
 - Introduction to Estimating - Question 1
 - Introduction to Estimating - Question 2
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review

Preferences

Introduction to Estimating

What Is an Estimate? (Continued)

Items to Include in an Estimate

An estimate should include all of the following items:

- The scope of the work that is included in the estimate.
- The assumptions that were used, such as whether the tasks should be done contiguously or whether they are interruptible at an additional cost.
- Resources, such as staff, facilities, and material. Consider the duration. How quickly can the task be done with the skills available? What skill level is required to do the job? Project management should be included.
- Expenses, both direct and indirect. Direct expenses are labor, material, equipment, services, and fees. Indirect expenses are overhead and administrative costs.
- Risk and the cost of managing it to acceptable levels.
- Documentation, which is critically important. If an estimate is not documented, it exists only in the head of one person. The written estimate must contain the assumptions made when the estimate was developed.

An estimate must include all of the items in the previous list. If you are asked to lower your estimate because the price is too high, what are your options? To lower the price, you can reduce the scope, reduce risk and associated contingency, or possibly reduce resource at the expense of schedule. Or, management can decide to lower the profit margin.

An estimate is just that--an estimate. The only perfect estimate is the one done after the work is completed.

The degree of accuracy of an estimate improves as you proceed through the development cycle. For example, at the beginning of the project, the estimate has a lower degree of accuracy than in the middle of the project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - What Is an Estimate?
 - What Is an Estimate? (Continued)
 - Reasons for Estimating
 - Characteristics of an Estimate
 - When Should an Estimate be Completed?
 - Steps in the Estimating Process
 - Steps in the Estimating Process (contd.)
 - Estimating Considerations
 - Introduction to Estimating - Question 1
 - Introduction to Estimating - Question 2
- Introduction to Duration and Utilization
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review

Preferences

Introduction to Estimating

Reasons for Estimating

There are many reasons for estimating, including:

- To determine and evaluate the estimated costs of a project before authorizing implementation
- To provide a basis for tracking and managing expenditures
- To establish a managerial baseline against which to measure actual expenditures during the execution of the project
- To provide a tool for evaluating routine project decisions
- To provide factual information to support investment analysis
- To establish resources required and the resulting schedule
- To provide a basis for tracking progress



Many cost and schedule overruns can be traced back to a poorly developed estimate. Even when the overrun is the result of poor execution, a good estimate should have included allowances for this. For example, suppose you estimate the project at a low cost by using fewer resources and shorter durations than required, and then the project is authorized and you are the project manager. You find yourself committed to the project with insufficient resources and insufficient time. The probability of completing a successful project is very low. However, if you had done the estimate had been done correctly, it would have included sufficient resources and an appropriate schedule.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - What Is an Estimate?
 - What Is an Estimate? (Continued)
 - Reasons for Estimating
 - Characteristics of an Estimate
- When Should an Estimate be Completed?
- Steps in the Estimating Process
- Steps in the Estimating Process (contd.)
- Estimating Considerations
- Introduction to Estimating - Question 1
- Introduction to Estimating - Question 2
- Introduction to Duration and Utilization
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review

Preferences

Introduction to Estimating

Characteristics of an Estimate

The characteristics of a good estimate are the approximate judgments of the effort, cost, and time to perform a task or a project. Specifically, an estimate:

- Is **not** a budget. Cost budgeting allocates the cost estimates to individual project components so that they can be measured and managed. Cost estimating determines the approximate costs of resources needed to complete the project activities. You must have your resources planned and costs assessed before you can build a budget.
- Is **not** a price but a cost factor. An estimate contains all the elements related to the cost of the project. It is not just effort in hours or pricing. You must estimate all cost items and factors such as staff, materials, facilities, and duration of tasks. Cost is internal; pricing is what the sponsor is charged.
- Must be documented. The documentation must contain the assumptions made while developing the estimate.
- Is affected by the duration of the project in terms of how quickly and in what sequence tasks are to be done, and whether they are contiguous or interruptible. Some tasks can be interrupted and have breaks as needed. Ask whether a task is dependent on a fixed completion time, regardless of the number of resources applied, or whether it is effort-based so that with additional effort, it can be completed much faster. Make sure you know what information is needed to determine both the effort and the duration.

In **Agile**, we estimate for the next iteration at the start of the iteration.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - What Is an Estimate?
 - What Is an Estimate? (Continued)
 - Reasons for Estimating
 - Characteristics of an Estimate
 - When Should an Estimate be Completed?
- Steps in the Estimating Process
- Steps in the Estimating Process (contd.)
- Estimating Considerations
- Introduction to Estimating - Question 1
- Introduction to Estimating - Question 2
- Introduction to Duration and Utilization
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review

Preferences

Introduction to Estimating

When Should an Estimate Be Completed?

As noted previously, there are different points in a project when an estimate should be prepared, reviewed, or revised. These include:

- When building the project organizational work plans for the project (at this point you create the estimate.)
- When finalizing the project plan with updated work plans (at this point you update the estimate.)
- When you take over a project
- When you move to the next phase of the project
- When evaluating change requests
- When there are authorized changes in resources, materials, and services

You must develop the WBS before preparing an estimate, even if it is only the preliminary version.

If you take over a project, you should prepare a new estimate or validate an existing estimate. Review staffing and skill levels stipulated in the project proposal and assumptions. Questions you should ask include:

- Are the skill levels correct?
- Are the hours assigned for tasks realistic?
- Do the hours include time for holidays, vacation, and any other downtime?

The estimate should also be reviewed or reworked if an assumption becomes invalid. Always document your assumptions as part of the estimate. This helps explain an incomplete set of data and also helps make your estimate more credible and complete.



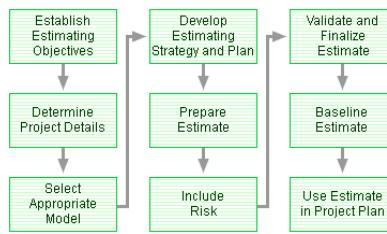
Project Management Orientation
1: Getting Started
2: Define the Project
3: Team Management
4: Identify and Validate Requirements
5: Create Decomposition Structures
6: Risk Management
7: Project Estimates
Fast Points
Introduction to Estimating
What Is an Estimate?
What Is an Estimate? (Continued)
Reasons for Estimating
Characteristics of an Estimate
When Should an Estimate be Completed?
Steps in the Estimating Process
Steps in the Estimating Process (contd.)
Estimating Considerations
Introduction to Estimating - Question 1
Introduction to Estimating - Question 2
Introduction to Duration and Utilization
Estimation Techniques
Cost Estimating and Cost Budgeting
Seven Keys
WWPMM
Mentor
Case Study
Self-Check
8: Project Schedules
9: Change Management
10: Project Control and Delivery
11: Project Management Review
12: Project Closeout

Preferences

Introduction to Estimating

Steps in the Estimating Process

The steps in the estimating process are the following:



Click each tab to read a description of the corresponding step.

▼ Step 1: Establish estimating objectives

1. Establish estimating objectives

Ask the following questions:

- Why is the estimate being prepared?
- What is the required accuracy?
- Who is the intended audience?
- When is the estimate needed?

▼ Step 2: Determine project details

2. Determine project details

- Identify the information needed to prepare the estimate.
- Understand how the sponsor's environment might have an impact on the estimate.
- Remember, technical and political factors can affect estimates.
- Recognize what is unique about this project.

▼ Step 3: Select the appropriate model

3. Select the appropriate model

- Consider a top-down model for high-level tasks or a proposal.
- Consider a bottom-up, task-by-task approach for a detailed, accurate estimate.
- Both top-down and bottom-up models are detailed in the section Estimation Methods.

▼ Step 4: Develop an estimating strategy and plan

4. Develop an estimating strategy and plan

- Identify the estimators.
- Develop a detailed plan for gathering estimates.
- Determine the type of estimating validation to be used
- Review the history of similar projects.

▼ Step 5: Prepare the estimate

5. Prepare the estimate

- For top-down, use a selected model.
- For bottom-up, generate detailed estimates, estimate administrative support and project management effort, and determine team size and duration.

▼ Step 6: Include Risk

6. Include Risk

- Include contingencies associated with risk response planning.

► Step 7: Validate and finalize the estimate

► Step 8: Baseline the estimate

► Step 9: Use the estimate baseline to develop the project plan

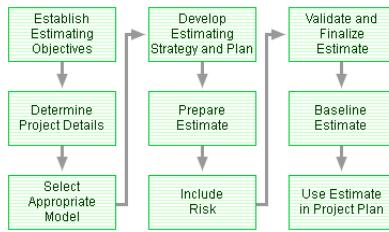


Project Management Orientation
+ 1: Getting Started
+ 2: Define the Project
+ 3: Team Management
+ 4: Identify and Validate Requirements
+ 5: Create Decomposition Structures
+ 6: Risk Management
+ 7: Project Estimates
<input checked="" type="checkbox"/> Fast Points
<input checked="" type="checkbox"/> Introduction to Estimating
<input checked="" type="checkbox"/> What Is an Estimate?
<input checked="" type="checkbox"/> What Is an Estimate? (Continued)
<input checked="" type="checkbox"/> Reasons for Estimating
<input checked="" type="checkbox"/> Characteristics of an Estimate
<input checked="" type="checkbox"/> When Should an Estimate be Completed?
<input checked="" type="checkbox"/> Steps in the Estimating Process
<input type="checkbox"/> Steps in the Estimating Process (contd.)
<input type="checkbox"/> Estimating Considerations
<input type="checkbox"/> Introduction to Estimating - Question 1
<input type="checkbox"/> Introduction to Estimating - Question 2
+ 8: Introduction to Duration and Utilization
+ 9: Estimation Techniques
+ 10: Cost Estimating and Cost Budgeting
<input type="checkbox"/> Seven Keys
<input type="checkbox"/> WWPMM
<input type="checkbox"/> Mentor
+ 11: Case Study
+ 12: Self-Check
+ 13: Project Schedules
+ 14: Change Management
+ 15: Project Control and Delivery
+ 16: Project Management Review
+ 17: Project Closeout
Preferences

Introduction to Estimating

Steps in the Estimating Process

The steps in the estimating process are the following:



Click each tab to read a description of the corresponding step.

► Step 1: Establish estimating objectives

► Step 2: Determine project details

► Step 3: Select the appropriate model

► Step 4: Develop an estimating strategy and plan

► Step 5: Prepare the estimate

► Step 6: Include Risk

▼ Step 7: Validate and finalize the estimate

7. Validate and finalize the estimate

- How will you validate the estimate?
 - With an independent validation?
 - With a detailed scrutiny of every aspect of planning and estimating work?
 - By comparing or checking with similar projects?
 - With a sampling scrutiny in selected areas of most risk?
- It is important to get a workable estimate.
- Have someone outside the project validate your method and assumptions.

▼ Step 8: Baseline the estimate

8. Baseline the estimate

1. You, as the project manager, need to declare the estimate as a baseline and use it in your project planning.
2. You then track how the project actuals compare to the estimate baseline during the execution of the project.

▼ Step 9: Use the estimate baseline to develop the project plan

9. Use the estimate baseline to develop the project plan

Estimates affect the schedule, cost, and profit, as well as sponsor satisfaction.



Project Management Orientation

1: Getting Started
2: Define the Project
3: Team Management
4: Identify and Validate Requirements
5: Create Decomposition Structures
6: Risk Management
7: Project Estimates
Fast Points
Introduction to Estimating
What Is an Estimate?
What Is an Estimate? (Continued)
Reasons for Estimating
Characteristics of an Estimate
When Should an Estimate be Completed?
Steps in the Estimating Process
Steps in the Estimating Process (contd.)
Estimating Considerations
Introduction to Estimating - Question 1
Introduction to Estimating - Question 2
Introduction to Duration and Utilization
Estimation Techniques
Cost Estimating and Cost Budgeting
Seven Keys
WWPMM
Mentor
Case Study
Self-Check
8: Project Schedules
9: Change Management
10: Project Control and Delivery
11: Project Management Review
12: Project Closeout

Preferences

Introduction to Estimating

Estimating in Agile projects.

The agile approach:

- a. Breaking the requirement down into User Stories.
- b. Expert Opinions — Asking the people with experience of the assigned tasks or solutions.
- c. The use of collaborative estimation tools such as Planning Poker to estimate the size of a User Story.
- d. As the team completes successive iterations, calibrating how many User Stories the team can deliver in an iteration.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - What Is an Estimate?
 - What Is an Estimate? (Continued)
 - Reasons for Estimating
 - Characteristics of an Estimate
 - When Should an Estimate be Completed?
 - Steps in the Estimating Process
 - Steps in the Estimating Process (contd.)
 - Estimating Considerations
 - Introduction to Estimating - Question 1
 - Introduction to Estimating - Question 2
- Introduction to Duration and Utilization
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Introduction to Estimating

Estimating Considerations

When you prepare estimates, be sure you know the language used in estimating (for example, if you are talking about elapsed time, ensure that the sponsor is not talking about work time). This can make a major difference in the resulting costs. Estimates vary, depending on whether the task is based on effort or duration.

Most tasks that have work to be done as a criterion for completion are considered.

The task has a total amount of effort that must be completed in order to finish the task. This might also be referred to as **staff effort** and is generally expressed in person hours. As a rule, the more resources assigned to the task, the shorter its duration.

Some tasks are duration-based. The duration is constant regardless of how many resources are assigned to the task. (For example, the duration required for a slab of concrete to dry is the same regardless of the number of people watching it happen).

Another key difference is elapsed time as opposed to working time. **Elapsed time** is the total number of days over which the task occurs. This is also called calendar time, and is usually expressed in calendar days, weeks, or months. Working time is the actual amount of time available for work. **Working time** takes into account the working hours or time available for project team members. It does not include time away from the job such as vacation or holidays. Working time is usually measured in working hours divided by days or weeks.

Availability is the time a staff person is available and willing to work. This is usually measured in work hours per day or working days.

Productivity is a relative measure of work in a time unit. Different skill levels have different productivity rates. You must determine which productivity should be used for the estimate. The safest approach is to use an average productivity of 80%.

Keep in mind that the time it takes to complete a task depends on both availability and productivity.

Estimating Guidelines

Estimating enables you to determine effort and duration for the elements in the WBS. Some guidelines for preparing estimates are:

-  • Effort should be based on average skill. If team members or experts are assisting you in preparing an estimate, remind them to estimate based on average skill level. An example is to start a software development project with a senior programmer who moves on and is replaced by a junior programmer. Using average skill level when estimating ensures that the task can still be completed as estimated.
- Duration is determined by estimated effort divided by a utilization factor.
- Cost is calculated based on an assumed labor rate resulting in a cost estimate.



Project Management Orientation

1: Getting Started
2: Define the Project
3: Team Management
4: Identify and Validate Requirements
5: Create Decomposition Structures
6: Risk Management
7: Project Estimates
Fast Points
Introduction to Estimating
What Is an Estimate?
What Is an Estimate? (Continued)
Reasons for Estimating
Characteristics of an Estimate
When Should an Estimate be Completed?
Steps in the Estimating Process
Steps in the Estimating Process (contd.)
Estimating Considerations
Introduction to Estimating - Question 1
Introduction to Estimating - Question 2
Introduction to Duration and Utilization
Estimation Techniques
Cost Estimating and Cost Budgeting
Seven Keys
WWPMM
Mentor
Case Study
Self-Check
8: Project Schedules
9: Change Management
10: Project Control and Delivery
11: Project Management Review
12: Project Closeout
Preferences

Introduction to Estimating

Question 1

What questions should be answered when creating an estimate? (Select all that apply.)

- A. When are these people needed and for how long?
- B. Who can we get to do the work?
- C. How much can we bill the client for this work?
- D. Can resources be shared across tasks?

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - What Is an Estimate?
 - What Is an Estimate? (Continued)
 - Reasons for Estimating
 - Characteristics of an Estimate
 - When Should an Estimate be Completed?
 - Steps in the Estimating Process
 - Steps in the Estimating Process (contd.)
 - Estimating Considerations
 - Introduction to Estimating - Question 1
 - Introduction to Estimating - Question 2
- Introduction to Duration and Utilization
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Preferences

Introduction to Estimating

Question 2

Select the true statements about preparing estimates.

- A. Estimates must be prepared before developing the OBS, PBS, and WBS.
- B. Estimates are prepared after bidding on opportunities.
- C. Estimates should be created when you take over a project.
- D. All of the above.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimating Terms

 What Is Utilization? Example of Utilization Guidelines Example of a Duration Formula Introduction to Duration and Utilization - Question Introduction to Duration and Utilization - Question Estimation Techniques Cost Estimating and Cost Budgeting Seven Keys WWPMM Mentor Case Study Self-Check 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Introduction to Duration and Utilization

Estimating Terms

The following terms are used in estimating and productivity measurement. Click each tab to read a description of the corresponding term.

Effort

Effort is the number of labor units required to complete a task. It is usually measured in staff hours or person-hours. When the number of staff and their working time or availability is taken into account, the duration in working days can be calculated. As stated previously, an **average** productivity should be assumed.

Level of Effort (LOE)

Level of Effort describes the activities that are necessary to support a project that cannot be scheduled. These activities, which are characterized by a uniform rate of activity, are difficult to measure in terms of discrete accomplishments. LOE activities are usually measured in staff hours for the duration of the activity. This results in an average load: for example, 20 hours per week. For scheduling and resource-loading reasons, this time might be spread evenly over appropriate periods.

Duration

Duration is the number of work periods, excluding holidays or other nonworking periods, required to complete an activity or other project element. Duration is usually expressed in work days or work weeks. There are two types of duration: contiguous (work time that is not interrupted) and interruptible (work time that might be interrupted). Duration is determined by first establishing the estimated effort required for a task, then dividing by a utilization factor (for example, 80%).

It is very important that you, as the project manager, estimate your time and share with your team the LOE estimates you have made concerning their work. This work should consist of items such as preparing procedures, meeting attendance, preparing status, obtaining equipment, and so on. Most project managers add 10% to the total effort for administrative items that team members must accomplish in addition to their WBS tasks. If you show the team your estimates for LOE and assure them that time has been added to the estimate for these items, you are in a better position to defend the estimate to management and to explain why 10% is a required amount of time in addition to the WBS items. You can also request help from team members and assure them that they have time to do this task because 10% LOE was built into the schedule.



The difference between effort and duration is that effort relates to the number of labor units required to complete a project activity, whereas duration relates to the number of work periods required to complete it. When you are preparing a schedule, specific resource availability and productivity might affect actual duration.

If the work you are estimating is repeatable and historical data is available to support the productivity of the various groups you are using on your project, then you can use the historical data to project reliable and accurate productivity factors for your current project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimating Terms
 - What Is Utilization?
 - Example of Utilization Guidelines
 - Example of a Duration Formula
 - Introduction to Duration and Utilization - Question
 - Introduction to Duration and Utilization - Question
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Introduction to Duration and Utilization

What Is Utilization?

Utilization is the amount of time a full-time equivalent (FTE) can be used on a project. An FTE is not necessarily a specific individual but can be the combining of two or more individuals whose efforts equal one work day (for example, eight hours) or a portion of a work day. In reality, personnel are not available full time, eight hours per day, 40 hours per week, 52 weeks per year.

Utilization rates are affected by the time required for education, vacation, holidays, administration, personal time off, travel, and sick leave. Utilization is usually expressed as hours per day, but can be expressed as a percentage of duration: for example, 50% of the time during a two-week task.

Availability indicates whether the resource can be used during a particular period on your project. Remember, good people are usually in high demand. When creating an estimate, you need to determine the impact that vacation time has on a task to which key personnel are assigned.

What Are Utilization Factors?

Utilization factor describes the amount of time a full-time equivalent (FTE) can be used for the length of the project. An FTE can be a specific person or a combination of different people's hours to equal a work day. You should rely on utilization factors to arrive at high-level planning estimates. Estimates should constantly be refined based on assumption validations, changes to requirements, and use of actuals.

The following is an example of how the utilization factor is calculated and the effect it has on your project:

- Duration is determined by estimated effort divided by a utilization factor of 80%.
- In the U.S., eight hours per day is standard for determining utilization rate.
- The working hours available for a year = 2080 (52 weeks x 5 days x 8 hours).
- Education = 80 hours.
- Vacation and holidays = 160 hours.
- Administration = 80 hours.
- Personal time off = 90 hours.
- Other (travel, sickness) = 70 hours.
- Total nonproject hours = 480 hours.
- Total project hours (2080 minus 480) = 1600 hours.
- 1600 divided by 2080 = 77% utilization.
- 1600 divided by 12 = 134 hours per month.

Therefore, for this example, the effective utilization factor is 77%, or 134 hours per month.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimating Terms
 - What Is Utilization?
 - Example of Utilization Guidelines
- Example of a Duration Formula
- Introduction to Duration and Utilization - Question
- Introduction to Duration and Utilization - Question
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- Project Schedules
- Change Management
- Project Control and Delivery
- Project Management Review
- Project Closeout
- Project Management Tool Suite
- Self-Assessment and Final Exam

Preferences

Introduction to Duration and Utilization

Example of Utilization Guidelines

The following table shows the approximate percentage of time that an FTE is available, based on project length and hours per month. Generally, the shorter the project, the higher the utilization level.

Project Length	Hours/Month	Utilization (Approx. Percentage)
3-6 months	176	100
6-12 months	130-140	75-80
>12 months	120-130	70-75

Utilization Guidelines



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimating Terms
 - What Is Utilization?
 - Example of Utilization Guidelines
 - Example of a Duration Formula
 - Introduction to Duration and Utilization - Question
 - Introduction to Duration and Utilization - Question
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Introduction to Duration and Utilization

Example of a Duration Formula

If you have a task that is estimated to take 120 hours. However, the person is available only 75% of the time. Over a 6- to 12-month project, the project manager must allow for vacation, holidays, sickness, training, and so on. Assuming an average productivity of 80%, the duration is calculated as follows:

$$\text{Duration} = \frac{\text{Effort/Productivity}}{\text{Availability}}$$

$$= \frac{120/.80}{.75} = \frac{150}{.75} = 200 \text{ hours}$$

$$= \frac{200 \text{ hours}}{8 \text{ hours/day}}$$

$$= 25 \text{ days (versus the original 15 days (120/8))}$$

Note: The formula to calculate the duration is the following: Duration equals effort divided by the average productivity and then divided by the availability of the person.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimating Terms
 - What Is Utilization?
 - Example of Utilization Guidelines
 - Example of a Duration Formula
 - Introduction to Duration and Utilization - Question
 - Introduction to Duration and Utilization - Question
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Introduction to Duration and Utilization

Question 1

Match each term used in estimating and measuring with its respective definition.

A. The number of labor units required to complete a task B. The number of work periods required to complete an activity or another project element C. Activities necessary to support a project that cannot be scheduled

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimating Terms
 - What Is Utilization?
 - Example of Utilization Guidelines
 - Example of a Duration Formula
 - Introduction to Duration and Utilization - Question
 - Introduction to Duration and Utilization - Question
- Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Introduction to Duration and Utilization

Question 2

What effect does the length of the project have on the utilization level?

- A. In general, the longer the project, the higher the utilization level.
- B. In general, the shorter the project, the higher the utilization level.
- C. In general, the shorter the project, the lower the utilization level.
- D. The length of the project has little to no effect on utilization.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Estimates

Estimation Techniques

Estimates are developed with a number of techniques or a combination of techniques as follows:

- **Top-down.** A top-down estimate (defined in detail later in this section) is used in the initial stages of a project. A top-down estimate compares historical data with experience. This is sometimes called a guesstimate.
- **Bottom-up.** A bottom-up cost estimate (defined in detail later in this section) involves receiving estimates from all estimators and then summarizing them into a cost estimate for the project. This technique could involve inflated pricing as estimators add contingency to their estimate. Ask the estimators what contingency they used to prepare the estimate. If any estimator used utilization or availability factors, then you do not apply these techniques again.
- **Parametric.** This measures the effort of a task. Parametric is defined in detail later in this section.
- **Analogy or comparison.** This describes the comparison of similar projects.
- **Expert judgment.** This is the information provided by a group or a person with specialized knowledge and training.

It is important to know the type of estimate and its level of precision so that you are not overconfident or underconfident when you present your estimate to management. As stated earlier, estimating for a project is not done just once. It is done throughout the life of the project. You must determine the level of accuracy needed for your estimate. A plus-or-minus precision indicator is required to best ensure that the recipient knows the level of validity (for example, that the project will cost U.S. \$1 million, plus or minus 25%). Each estimating technique and type of estimate is used at different times in your organization.

Click each tab to read a description of the corresponding term.

▼ Top-Down Estimating

Top-Down Estimating

Top-down estimating results in high-level estimates of projects or their summary tasks based on parametric, analogy or comparison, or expert judgment. This approach is based on collecting judgments, past experiences, and on evaluating past data concerning similar activities. It is commonly used and is considered to be less costly though less accurate than other techniques. A top-down estimate is more reliable if the previous projects are similar in appearance and fact, and the individuals or groups preparing the estimate have the required expertise.

Top-down estimates are generally given to lower-level managers. These managers then break the estimate down for specific tasks that comprise subprojects, so the approach feeds other estimates.

Top-down estimating is considered a good approach to use during a proposal phase or when estimating a phase that is months or years away. If you lack detailed information or time, the top-down approach might be the preferred technique. Documentation of the appropriate assumptions is critically important.

Remember that personal feelings can negatively influence a top-down estimate. Therefore, keep in mind that when you use this technique, it is very easy to create an estimate that matches the results you have in mind.

▼ Bottom-Up Estimating

Bottom-Up Estimating

Bottom-up estimates are the cost and duration of individual work items in hours, which is summarized or combined, resulting in a project total. The cost and accuracy are driven by the size of the individual work items. Smaller work items increase both cost and accuracy to the project estimate.

Bottom-up estimates are considered to be the most accurate and allow for the integration of activities that occur within an organization. A good bottom-up estimate demonstrates a detailed understanding of the work to be done on a project.

A key challenge of these estimates is that people providing the estimates might add reserve to individual activities. That is why a project manager must explain to the team that the LOE, availability, and productivity have been included in the estimate for individual tasks. The bottom-up approach is the financial equivalent of the scientific method of discovery. Where the scientific method takes the whole and decomposes it to its smallest parts, the bottom-up technique assigns estimates to the smallest parts and then composes them back to the whole.

▼ Parametric Estimate

Parametric Estimate

The parametric estimate uses specific measures to estimate the effort required to complete a task or to produce a work product. Examples are dollars per square foot, hours per lines of code, dollars per gallon, and dollars per function point.

The **estimating unit (EU)** is the unit defined by the team that can be measured and estimated. The EU can apply to more than one task, but these tasks should be similar. Different factors can affect the task and can increase or decrease the effort and therefore, the EU. Too many EUs can result in a technique that estimates individual items rather than a large group of similar items. Examples of estimating units are lines of code, pages in a chapter, or number of lessons in a class.

► Analogy or Comparison Estimating

► Expert Judgment Estimating



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
- Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Estimates

Estimation Techniques

Estimates are developed with a number of techniques or a combination of techniques as follows:

- **Top-down.** A top-down estimate (defined in detail later in this section) is used in the initial stages of a project. A top-down estimate compares historical data with experience. This is sometimes called a guesstimate.
- **Bottom-up.** A bottom-up cost estimate (defined in detail later in this section) involves receiving estimates from all estimators and then summarizing them into a cost estimate for the project. This technique could involve inflated pricing as estimators add contingency to their estimate. Ask the estimators what contingency they used to prepare the estimate. If any estimator used utilization or availability factors, then you do not apply these techniques again.
- **Parametric.** This measures the effort of a task. Parametric is defined in detail later in this section.
- **Analogy or comparison.** This describes the comparison of similar projects.
- **Expert judgment.** This is the information provided by a group or a person with specialized knowledge and training.

It is important to know the type of estimate and its level of precision so that you are not overconfident or underconfident when you present your estimate to management. As stated earlier, estimating for a project is not done just once. It is done throughout the life of the project. You must determine the level of accuracy needed for your estimate. A plus-or-minus precision indicator is required to best ensure that the recipient knows the level of validity (for example, that the project will cost U.S. \$1 million, plus or minus 25%). Each estimating technique and type of estimate is used at different times in your organization.

Click each tab to read a description of the corresponding term.

► Top-Down Estimating

► Bottom-Up Estimating

► Parametric Estimate

▼ Analogy or Comparison Estimating

Analogy or Comparison Estimating

Analogy or comparison estimating is also called **analogous estimating**. It uses the actual cost of a previous, similar project as the basis for estimating the cost of the current project. Adjustments must be made to account for differences in performance, design, technology, and operational characteristics.

It is very important to consider the source and quality of analogous data. When considering the source, ask the following questions: Is it plan data? Is it actual data? How old is the data? What were the assumptions behind the data?

The following figure shows the steps for estimating using the analogy or comparison technique.



▼ Expert Judgment Estimating

Expert Judgment Estimating

Expert judgment estimating is used to assess input to the estimating process. Expertise is provided by any group or individual with specialized knowledge, training, or hands-on experience. Expert judgment might be used to some extent in any of the other estimating techniques. Remember that you should know the track record and the experience of the expert to assess the validity of his or her estimates. You should provide the expert with as much data as possible about your specific project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Estimate Characteristics
 - Validating Estimates
 - Rules of Estimating
 - Estimation Techniques - Question 1
 - Estimation Techniques - Question 2
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Estimation Techniques

Estimate Characteristics

The following table illustrates the characteristics of the types of estimates and the various techniques of estimating.

Type	Accuracy	Use	Techniques
Order of Magnitude	-25% / +75%	Initial Concept entry	Analogy / Comparison Parametric Expert judgement Top-down
Budget	-10% / +25%	Concept DCP, CRM-RFI, preliminary response to RFP	Analogy / Comparison Parametric Expert judgement
Definitive	-5% / +10%	Plan DCP CRM-Proposal	Analogy / Comparison Parametric Expert judgement Bottom-Up

Estimate Characteristics

Key points to remember about estimate characteristics are:

- Order of magnitude is a top-down estimate. It is used during the formation of the project for initial evaluation and during the IPD concept phase. It is also called concept, preliminary, or feasibility estimate. Order of magnitude should provide estimating accuracy of minus 25% to plus 75%. It usually errs on the plus side.
- Budget is a more detailed analysis. It is a mixture of firm and unit costs for labor, materials, and equipment. Budget is developed from more detailed project analyses and is used in the concept Decision Checkpoint (DCP). Budget is also called the design, control, or appropriation estimate. Budget should provide estimating accuracy of minus 10% to plus 25%.
- Definitive is a detailed, bottom-up estimate used for proposals and evaluations. It is prepared from well-defined data and specifications, and is used in the IPD plan and DCP exit phases. Definitive should provide an estimating accuracy of minus 5% to plus 10%.
- DCPS are structured project reviews with specific entry and exit criteria, used to measure the progress of a project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Estimate Characteristics
 - Validating Estimates
 - Rules of Estimating
 - Estimation Techniques - Question 1
 - Estimation Techniques - Question 2
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Estimation Techniques

Validating Estimates

Validate all estimates before you consider them complete. Use the following checklist to validate an estimate:

- Review the definition of the project to understand what is being estimated. Be aware that you might be given separate targets for cost and expense.
- Study the ground rules, constraints, and assumptions of the project, and understand the project environment.
- Focus on data sources. Determine the source of the estimates and statistics, determine whether the data has resulted from guesses, and look for omissions. The best estimates are those that are provided by people responsible for the work and approved by people with accountability. Challenge assumptions, such as asking why one technical solution is to be used instead of another, or why a supplier is to be used instead of an internal organization.
- Compare the estimate with established standards. Ask if standards exist. If they do, what are they and what drives them? Be cautious with standards because they might be out of date (for example, software development standards).
- Determine whether the technique is acceptable. Ask if cost-estimating relationships apply and whether you have accounted for all costs. An example is whether it is appropriate to use a top-down estimate based on the project phase. If your project is in a delivery phase, you should be preparing a bottom-up estimate. However, if you are in a concept phase, then you could use a top-down or range estimate.
- Look for cost drivers, which are major factors, and determine whether they are reasonable. An example is that, if you have three programmers, you need to determine whether they each need one computer or two for coding and testing. You would also need to ask if they each need their own telephone or if they could share one. Other questions to ask are whether, when the programmers' tasks are complete, they should be retained, rented equipment should be returned, or offices should be moved to eliminate overhead for office space. Determine the costs of project elements and pay close attention to keeping those costs down.
- Determine whether the estimate meets the objective. In review and validation, there are often changes to the estimate, and you must allow time to rework the estimate.
- Use a different approach to validate the estimate. If possible, use an independent reviewer and provide him or her with all of the necessary data.
- Ensure that all risk response contingency and assumptions are included in the estimate.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Estimate Characteristics
 - Validating Estimates
 - Rules of Estimating
 - Estimation Techniques - Question 1
 - Estimation Techniques - Question 2
- 8: Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- 9: Case Study
- 10: Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Estimation Techniques

Rules of Estimating

The rules of estimating focus on honesty. If you want an honest estimate, each element of this list has to be honest.

The rules of estimating are:

- Use the most appropriate approach and the most accurate technique. When building an estimate, even if it is high-level, you must follow the rules. Each rule is crucial to successful estimating.
- Communicate the level of accuracy. The level of precision is the level of accuracy and trust that a project manager puts in an estimate (for example, if it is a broad estimate, don't claim total accuracy).
- Involve the on-board project team members that are on board in the estimating process so that they can provide insight and can become vested in the process.
- Base estimates on history. Determine whether the team members have a history of developing poor estimates. If the software estimators are usually correct, then their estimates should have greater credence.
- Use standards, if available.
- When developing estimates, avoid starting with a presumed result and then working backward to justify this result. Making estimates fit the available dollars does not generate an honest estimate. If your estimates are not aligned with the targeted cost or schedule, address the problem and resolve it through trade-offs of scope, schedule, and cost.
- Do not undervalue estimates. Undervalued estimates that might win business usually result in cost overruns that might be invisible at the time of contracting. As the project manager, you will be held accountable for that overrun.
- Recognize that estimating takes time. On average, it can take up to 2% of the total technical time to determine an estimate.
- Document your assumptions. This is a mandatory step in the process. An estimate is not an estimate unless it is written down, including both assumptions and approach, in addition to numerical values.

Remember that these rules are fundamental to estimating. You must follow them if you want to develop a valid estimate.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Estimate Characteristics
 - Validating Estimates
 - Rules of Estimating
 - Estimation Techniques - Question 1
 - Estimation Techniques - Question 2
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Estimation Techniques

Question 1

Check the box beside each true statements about the characteristics of the techniques of estimating. (Select all that apply.)

- A. Analogy or comparison. Can be used throughout the life of a project.
- B. A guess is an order of magnitude type of estimate that is used during the formation of a project.
- C. Expert judgment is usually a definitive type of estimate.
- D. Supplier is a definitive estimate used for proposals.
- E. A parametric estimate is a budget type of estimate used only for the Concept DCP.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Estimate Characteristics
 - Validating Estimates
 - Rules of Estimating
 - Estimation Techniques - Question 1
 - Estimation Techniques - Question 2
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Estimation Techniques

Question 2

The top-down estimating approach:

- A. Is based on collecting judgments and past experiences
- B. Is used to assess input into the estimating process
- C. Is driven by the size of the individual work items
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
- Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Estimates

Cost Estimating and Cost Budgeting

Estimating a project involves predicting the amount and cost of resources required to successfully execute the project. Many approaches can be used to estimate. Because each approach has advantages and disadvantages, you might need to combine approaches to obtain the best estimate for the project. By using the estimate, you can develop a better understanding of the budget required.

Estimating is done as early in the project life cycle as possible and is normally repeated a number of times throughout the life of the project as changes in the project dictate. Estimating is initially done during the planning process after which a budget is agreed to as the baseline for the project plan. Estimates can be redone or refined throughout the project based on performance or on the need for redefining and replanning that results from project change requests.

Estimating is the process of identifying the "should cost" for each project task and activity. If estimating is performed at the higher levels in the WBS, this higher-level estimate must eventually be broken down to the task and activity level to effectively manage the project execution. These tasks and activities then combine to form the "should cost" for the project's life cycle. Although the estimate is **not** the project management schedule, it is used as input to the project management schedule when finalizing the project plan.

Budgeting is the allocation of the "should cost" over the time period required to do the work. The estimate provides the "should cost" for the task or activity, but further analysis is necessary to determine the specific time period needed to perform. Time periods can be hours, days, weeks, or months depending upon the complexity of the task, activity, or work product. After the "should costs" have been spread out over time according to when the work is to be performed, the project manager must develop a time-phased cost baseline that becomes the plan-of-record cost to a work package. It uses the estimate to determine how much money is allocated to each work package. This enables project managers to develop a financial measurement baseline that is then used to track and control the execution of the project.

Documenting your estimates and assumptions about the estimates is a very critical and mandatory part of the project. It is the sole responsibility of the project manager to ensure that it is done.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
- Cost Estimating and Cost Budgeting (Continued)
 - Cost Estimating and Cost Budgeting - Question

Preferences

Cost Estimating and Cost Budgeting

Cost Estimating and Cost Budgeting (Continued)

Cost Estimating and Cost Budgeting Defined

As stated earlier, estimating is determining the resources (labor, equipment, and facilities) needed to complete the project. One reason for creating a project budget estimate is to provide a basis for tracking and managing project costs. Specific tasks within the estimating process are cost estimating and cost budgeting.

When approved, the budget is placed under change control and is the basis for establishing the financial measurement baseline of the project.

- **Cost estimating** consists of determining the cost of all of the elements needed to complete the project.
- **Cost budgeting** is the allocation of the determined cost estimates to individual project components so that those costs can be measured and managed as the project is executed.

When all of your costs have been defined and the project budget has been approved, all of the costs should be input into the WWPMM Financial Plan work product. The description and template for this work product can be found, along with descriptions for all WWPMM work products and templates, on the [WWPMM Web site](#).

Terms Used within Cost Estimating and Cost Budgeting

Become familiar with the following terms, which are used within the cost estimating and cost budgeting processes:

- **Costs** are the funds that a company spends to produce products or establish an infrastructure to provide services. Examples are labor, raw materials, third-party software or hardware, and subcontracted work.
- **Direct costs** are incurred for the benefit of a specific project. Project managers can usually control direct costs.
- **Indirect costs** are incurred for the joint benefit of multiple projects and are applied through an allocation process. Project managers usually have less control over indirect costs and frequently overlook them.
- **Fixed costs** occur regardless of the complexity of the project. An example of a fixed cost is plant maintenance.
- **Variable costs** vary in relationship to related activities within the project. An example of a variable cost is the price of a piece of copper.
- **Brand costs** are the expenditures made to manufacture, distribute, and support a product or offering. Examples are warranty, software manufacturing, direct labor, and factory overhead.

Questions to Ask When Cost Estimating

When you are preparing a cost estimate, ask the following questions:



- What are the differences between fixed and variable costs?
- How do fixed and variable costs affect your project?
- What is the difference between direct and indirect cost?
- What are examples of costs that you incur on projects?
- What are the types of these incurred costs?



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Cost Estimating and Cost Budgeting (Continued)
 - Cost Estimating and Cost Budgeting - Question
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Cost Estimating and Cost Budgeting

Question

What is the definition of cost estimating?

- A. The relative measure of work in a time unit
- B. The amount of time a full-time equivalent can be used on a project
- C. The determination of the cost of elements needed to complete the project
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Estimates

Seven Keys to Success™

Not taking the time to make good estimates can affect several of the keys. First, work and schedule will not be predictable, as deadlines will be missed. The delivery organization benefits key will likely go red as spending increases and the project goes over budget. How do the sponsor and key stakeholders react when the project is late and over budget? Now your stakeholders lose their commitment. And at the end, the project will not be successful and deliver the business benefits that were expected.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
- WWPMM

Mentor

- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Estimates

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).

**WWPMM Practices**

- Estimating Governance (Supplemental Practice)
- Financial Management
- Schedule Management
- Scope Management
- Technical Environment Management (Supplemental Practice)

WWPMM Activities

- Build Project Organizational Unit Work Plans
- Finalize Plans for Agreement

WWPMM Work Products

- Estimating Considerations Checklist
- Estimating Management Plan
- Estimation Report



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor

 Case Study Self-Check 8: Project Schedules 9: Change Management 10: Project Control and Delivery 11: Project Management Review 12: Project Closeout 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Project Estimates

Mentor



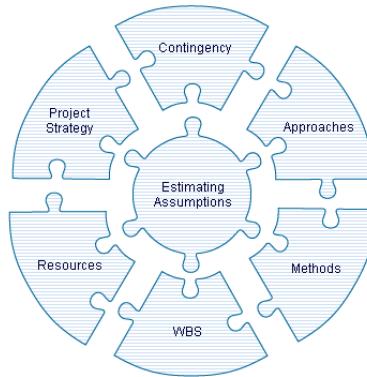
Click the photo to listen to Marjorie talk.

Why Are Estimates Important?

Think about your own project experiences. Have you worked on a project where the estimates were not prepared properly? Can you recall what effect poor estimates had on stakeholders and the project staff?

Estimates are important because they establish the basis for planning and a baseline for tracking. I have learned that almost every overrun of cost and schedule can be traced back to the failure of an estimate. Without a good estimate, it is almost impossible for you to have a good project.

Estimating is more than determining a magic number. Estimates combine all of the elements of the puzzle that comprise the total project, as shown in the graphic. If any one of these elements is not considered, the resulting estimate is invalid, and an invalid estimate leads to a difficult or, potentially, a failed project.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Estimates

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

You now need to estimate the work effort in hours and compute the durations and labor costs associated with each of the subtasks.

Table 1 shows the activities, tasks, subtasks, and the estimate assigned to the subtasks, and the cost per hour of the resource assigned to the subtasks.

Activity	Task	Subtask	Task Estimate (in days)	Cost per Hour/Day	Who
1.1 Develop a training course	1.1.1 Design the course	1.1.1.1 Establish goals for the course	6	\$200/\$1600	Project Manager
		1.1.1.2 Identify objectives for the course	9	\$160/\$1280	Subject Matter Experts
		1.1.1.3 Create high level design	9	\$140/\$1120	Designer
		1.1.1.4 Validate high level design	6	\$140/\$1220	Designer
		1.1.1.5 Create technical design	9	\$140/\$1220	Designer
		1.1.1.6 Validate technical design	6	\$140/\$1220	Designer
	1.1.2 Develop the course	1.1.2.1 Create content	30	\$125/\$1000	Writer
		1.1.2.2 Create Media	15	\$150/\$1200	Writer
		1.1.2.3 Review and edit content	9	\$150/\$1200	Writer
		1.1.2.4 Create kitting profile for student handout	9	\$125/\$1000	Writer
		1.1.2.5 Create kitting profile for instructor handout	9	\$125/\$1000	Writer
	1.2 Conduct pilot	1.2.1 Train the instructors	6	\$200/\$1600	Project Manager
		1.2.1.2 Train the instructors	9	\$200/\$1600	Project Manager

Table 1

Table 2 shows the duration of the "Develop the Course" activity for the project at 100% availability and at 75% availability with 80% productivity. It also shows the labor costs at 100% productivity and 80% productivity. Notice how the duration and the costs increase as the availability and the productivity decrease.

Task	Subtask	Task Estimate (in days)	Cost per Hour/Day	Resource	Duration 100% Available	Duration 75% Available 80% Prod	Cost (Labor) 100% Prod	Cost (Labor) 80% Prod
1.1.2 Develop the course	1.1.2.1	30	\$125/\$1000	Writer	30 days	50 days	\$30,000	\$37,500
	1.1.2.2	15	\$150/\$1200	Writer	15 days	25 days	\$18,000	\$22,500
	1.1.2.3	9	\$150/\$1200	Editor	9 days	15 days	\$10,800	\$13,500
	1.1.2.4	9	\$125/\$1000	Writer	9 days	15 days	\$9,000	\$11,250
	1.1.2.5	9	\$125/\$1000	Writer	9 days	15 days	\$9,000	\$11,250

Table 2

The formula used for duration at 75% availability and 80% productivity is:

$$\text{Duration} = \frac{\text{Task estimate}/\text{Productivity}}{\text{Availability}} = \frac{\text{Task estimate}/80}{.75}$$

The formula used for the labor cost at 80% productivity is:

$$\text{Cost} = \frac{\text{Task estimate} \times \text{Unit Cost}}{\text{Productivity}} = \frac{\text{Task estimate}}{.80} \times \text{Cost per day}$$

Note: If you only pay people for the hours they work, the availability is 100% and is not taken into account when calculating cost.

Your Assignment

Based on the information in Table 1, the examples in Table 2, and using the formulas above, calculate the durations and labor costs (as per Table 2) associated with the following subtasks:

- 1.1.1.2 Identify the objectives for the course
- 1.2.1.1 Identify the instructors

Check Your Work

After you complete this assignment, click **Next** to compare your work with the assignment solution.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study

 Case Study Solution

- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

Check your work on the assignment by comparing it with the solution in the following table.

Task	Subtask	Task Estimate (in days)	Cost per Hour/Day	Resource	Duration 100% Available	Duration 75% Available 80% Prod	Cost (Labor) 100% Prod	Cost (Labor) 80% Prod
1.1.1 Design the course	1.1.1.2 Identify objectives for the course	9	\$160/\$1280	Subject matter experts	9 days	15 days	\$11,520	\$14,400
1.2.1 Train the instructors	1.2.1.1 Identify the instructors	6	\$200/\$1600	Project manager	6 days	10 days	\$9,600	\$12,000

Case Study Solution



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- Question 1
- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- Question 7
- Question 8
- Question 9
- Question 10
- Question 11
- Question 12
- Question 13

 8: Project Schedules

Preferences

Self-Check

Question 1 of 13

Estimating means to:

- A. Define the total amount of effort that must be completed.
- B. Predict the amount and cost of resources required to execute the project.
- C. Find the fastest way to complete the project.
- D. All of the above.

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- 8: Project Schedules

Preferences

Self-Check

Question 2 of 13

Which of the following should be included in an estimate?

- A. A list of the tools to be included in an estimate
- B. The scope of tasks and work products
- C. A marketing strategy
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
- Question 4
- Question 5
- Question 6
- Question 7
- Question 8
- Question 9
- Question 10
- Question 11
- Question 12
- Question 13

8: Project Schedules

Preferences

Self-Check

Question 3 of 13

Place the following steps used to create an estimate in the correct order. Not all steps are represented.

1. Validate and finalize the estimate.
2. Establish estimating objectives.
3. Use the baseline in the project plan.
4. Create a baseline estimate.
5. Prepare the estimate.
6. Select an appropriate model.

- A. 2, 6, 5, 1, 4, 3
- B. 2, 5, 4, 3, 1, 6
- C. 4, 3, 2, 1, 6, 5
- D. 3, 6, 5, 1, 4, 2

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13

8: Project Schedules

Preferences

Self-Check

Question 4 of 13

When estimating, you need to:

- A. Base effort on the highest-level skill.
- B. Calculate cost on an assumed labor rate.
- C. Base duration on effort.
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- 8: Project Schedules

Preferences

Self-Check

Question 5 of 13

Select E to indicate that an item relates to effort or D to indicate that it relates to duration.

A. Should be estimated assuming an average skill

B. Considers how much vacation the planned resource is planning to take during the project

C. Is affected by the productivity of the person assigned to the task

D. Estimates how many labor units it will take to complete the work, not taking into account the productivity and utilization of the resource assigned to the task

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- 8: Project Schedules

Preferences

Self-Check

Question 6 of 13

Utilization is:

- A. The amount of time a full-time equivalent can be used on a project.
- B. Usually measured in staff hours or person hours.
- C. The number of labor units required to complete a task.
- D. All of the above.

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
 - Fast Points
 - + Introduction to Estimating
 - + Introduction to Duration and Utilization
 - + Estimation Techniques
 - + Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- + Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- + 8: Project Schedules

Preferences

Self-Check

Question 7 of 13

What utilization factors do you need to know to calculate duration and cost?

- A. Effort and unit cost
- B. Availability and productivity
- C. Effort and productivity
- D. All of the above

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
 - Fast Points
 - + Introduction to Estimating
 - + Introduction to Duration and Utilization
 - + Estimation Techniques
 - + Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- + Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- + 8: Project Schedules

Preferences

Self-Check

Question 8 of 13

Which of the following are the techniques of estimating? (Select all that apply.)

- A. Top-down
- B. Duration
- C. Analogy or comparison
- D. Expert judgment
- E. Parametric

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- 8: Project Schedules

Preferences

Self-Check

Question 9 of 13

Expert judgment estimates:

- A. Can be used to some extent in any of the estimating techniques.
- B. Rely on the experience of the expert.
- C. Are used to assess input to the estimating process.
- D. All of the above.

[Submit Answer](#)



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
 - Fast Points
 - + Introduction to Estimating
 - + Introduction to Duration and Utilization
 - + Estimation Techniques
 - + Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- + Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- + Question 11
- + Question 12
- + Question 13

8: Project Schedules

Preferences

Self-Check

Question 10 of 13

What should you do when validating an estimate? (Select all that apply.)

- A. Give stakeholders one day to review the estimates
- B. Ensure that all risk response tasks are included in the estimate
- C. Determine if the technique is acceptable
- D. Determine if the estimate meets the objective

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- 7: Project Estimates
 - Fast Points
 - + Introduction to Estimating
 - + Introduction to Duration and Utilization
 - + Estimation Techniques
 - + Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
- Question 11
- Question 12
- Question 13

+ 8: Project Schedules

Preferences

Self-Check

Question 11 of 13

What do the rules of estimating include?

- A. Backing into estimates
- B. Using standards, if they are available
- C. Padding estimates
- D. All of the above

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
 - Fast Points
 - + Introduction to Estimating
 - + Introduction to Duration and Utilization
 - + Estimation Techniques
 - + Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- + 8: Project Schedules

Preferences

Self-Check

Question 12 of 13

The difference between cost estimating and cost budgeting is that cost estimating determines all the costs whereas cost budgeting allocates the cost estimates to project components.

- A. True
 B. False

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
 - Fast Points
 - Introduction to Estimating
 - Introduction to Duration and Utilization
 - Estimation Techniques
 - Cost Estimating and Cost Budgeting
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- + Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
- + 8: Project Schedules

Preferences

Self-Check

Question 13 of 13

Why is it important to do a good job at estimating?

- A. Estimates establish the basis for planning and pricing a project.
- B. Almost every cost and schedule overrun can be traced back to the failure of an estimate.
- C. Without a good estimate, it is almost impossible to have a good project.
- D. All of the above.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 8 Objectives

You can use a project schedule to:

- Track the planned versus actual progress of your project and show your team and your sponsor how the project is progressing
- Evaluate the planned versus actual progress of your project, and determine whether to revise the project to meet major milestones and completion tasks
- Communicate task interdependencies to the project team, project sponsor, and other stakeholders
- Determine whether to accept or reject a change based on how it affects the sequence of tasks, resources needed, staff responsibilities, major milestones, and project completion date

This module takes approximately 1 hour 45 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- Fast Points
- Project Schedules
- Project Network Diagrams
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

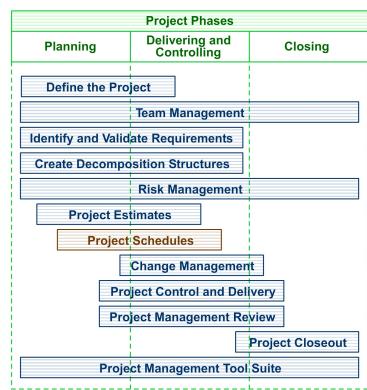
Fast Points

The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Project Schedules", which is covered in the second half of the Planning phase and during the first half of the Delivering and Controlling phase.

A schedule is any plan structured on a time dimension, including a project management schedule, financial plan, and staff schedule.

Schedules are key management tools for tracking and communicating the progress of a project.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

What Is a Schedule?

A schedule is any plan structured on a time dimension, including a project management schedule, financial plan, operational schedule, and staff schedule. Schedules are key management tools for tracking and communicating the progress of a project.



A project management schedule defines the planned start and finish dates for, and the dependencies between, all the work units for which the project organizational unit is responsible. A project management schedule contains all the technical work and all the project management work being done by any reporting organizational unit one level below the unit in the organizational breakdown structure (OBS). It is composed of estimates, work products, activities, and tasks from the WBS, and resource information. A schedule also contains the planned dates for performing activities and meeting milestones and defines how the current project interlocks with other projects.

A project management schedule can be represented in a variety of ways. Three of the most common are precedence diagrams, Gantt chart, and milestone chart. These are detailed later in this lesson.

Using a Project Schedule

As the project manager, you use a project schedule to:

- Track the planned versus actual progress of your project and show your team and your sponsor how the project is progressing
- Evaluate the planned versus actual progress of your project, and determine whether to revise the project to meet major milestones and completion dates
- Communicate task interdependencies to the project team, project sponsor, and other stakeholders
- Determine whether to accept or reject a change based on how it affects the sequence of tasks, resources needed, staff responsibilities, major milestones and project completion date



Project Management Orientation

[+]	1: Getting Started
[+]	2: Define the Project
[+]	3: Team Management
[+]	4: Identify and Validate Requirements
[+]	5: Create Decomposition Structures
[+]	6: Risk Management
[+]	7: Project Estimates
[+]	8: Project Schedules
[+]	Fast Points
[+]	Project Schedules
[+]	Scheduling Terminology
[+]	Including Level-of-Effort Tasks in the Schedule
[+]	Displaying the Schedule
[+]	Project Schedules - Question 1
[+]	Project Schedules - Question 2
[+]	Project Network Diagrams
[+]	Precedence Diagram
[+]	Free Float and Total Float
[+]	The Critical Path
[+]	Finalize the Schedule
[+]	Seven Keys
[+]	WWPMM
[+]	Mentor
[+]	Case Study
[+]	Self-Check
[+]	9: Change Management
[+]	10: Project Control and Delivery
[+]	11: Project Management Review
[+]	12: Project Closeout
[+]	13: Project Management Tool Suite
[+]	14: Self-Assessment and Final Exam

Preferences

Project Schedules

Scheduling Terminology

This section lists terms and definitions used in project scheduling:

- An **activity** is an element of work performed over a period of time within the project. It is a specific piece of work in the WBS. An activity has a measured beginning and a measured end.
- A **task** is a subdivision or portion of an activity; it describes the lowest level of the WBS.
- Starting points and ending points of activities are known as **events**. An example of an event might be Begin Code Development.
- A **milestone** is an achievement or a significant event in the project or subproject, such as a major decision or completion of an important activity. It is an activity that has zero duration and zero resources.
- A **precedence relationship** is a dependency between two activities, or between a project activity and a milestone. For example, when creating a driveway, the concrete must be mixed before it is poured; therefore, the task "Pour Concrete" has a precedence relationship with the task "Mix Concrete."
- The **precedence diagramming method (PDM)** is a means of constructing a project network diagram using nodes to represent activities and connecting them with arrows to show the dependencies. This method is also referred to as an activity-on-node (AON). It is the method used by most project management software, and it can be done manually or on a computer.
- A **project network diagram** is any schematic display of the dependencies among project activities.



Project Management Orientation

- 1: Getting Started
 - 2: Define the Project
 - 3: Team Management
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Scheduling Terminology
 - Including Level-of-Effort Tasks in the Schedule
 - Displaying the Schedule
 - Project Schedules - Question 1
 - Project Schedules - Question 2
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Including Level-of-Effort Tasks in the Schedule

You must include all project management and technical tasks in the schedule. Some of these are level-of-effort (LOE) tasks, which are activities that are not easily measured in terms of discrete accomplishments. LOE tasks that should be listed in the project schedule include, but are not limited to:

- Change management
- Risk management
- Communications management
- Vendor or customer liaison
- Progress management
- Contract management
- Project management
- Supplier agreement management
- Technical environment management
- Engineering management

As you schedule these LOE tasks, you must validate your estimates to ensure that you have included enough time. In doing this, you might find that you need additional time; if so, you must include it. If you do not, and the contract is a fixed-price contract, the cost will be higher in the end.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Scheduling Terminology
 - Including Level-of-Effort Tasks in the Schedule
 - Displaying the Schedule
- Project Schedules - Question 1
- Project Schedules - Question 2
- Project Network Diagrams
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- Change Management
- Project Control and Delivery
- Project Management Review
- Project Closeout
- Project Management Tool Suite
- Self-Assessment and Final Exam

Preferences

Project Schedules

Displaying the Schedule

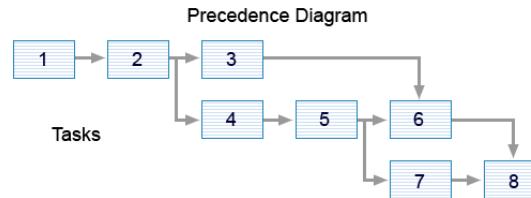
Precedence diagrams, Gantt charts, and milestone charts are ways of displaying the project schedule. They can be created with most project management software tools.

Click the tab to view each type of diagram:

Precedence Diagram

Gantt Chart

Milestone Chart



A **precedence diagram** is one type of project network diagram. It shows the relationships between activities.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Scheduling Terminology
 - Including Level-of-Effort Tasks in the Schedule
 - Displaying the Schedule
- Project Schedules - Question 1
- Project Schedules - Question 2
- Project Network Diagrams
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Displaying the Schedule

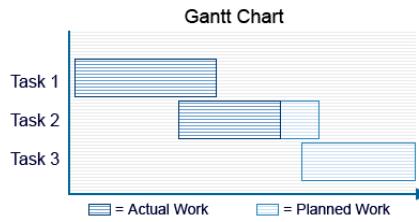
Precedence diagrams, Gantt charts, and milestone charts are ways of displaying the project schedule. They can be created with most project management software tools.

Click the tab to view each type of diagram:

Precedence Diagram

Gantt Chart

Milestone Chart



A **Gantt chart** is useful for viewing planned project activity versus actual activity.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Scheduling Terminology
 - Including Level-of-Effort Tasks in the Schedule
 - Displaying the Schedule
- Project Schedules - Question 1
- Project Schedules - Question 2
- Project Network Diagrams
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Displaying the Schedule

Precedence diagrams, Gantt charts, and milestone charts are ways of displaying the project schedule. They can be created with most project management software tools.

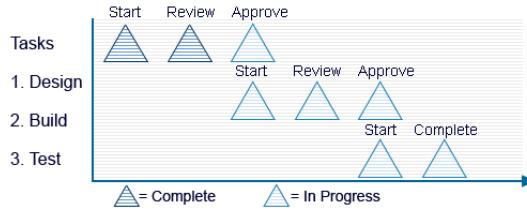
Click the tab to view each type of diagram:

Precedence Diagram

Gantt Chart

Milestone Chart

Milestone Chart



A milestone chart is often used for communicating with upper management.

Note that, until resources are actually assigned, these views are only estimates, not actual schedules. The project manager must use the right view for the right purpose.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Scheduling Terminology
 - Including Level-of-Effort Tasks in the Schedule
 - Displaying the Schedule
 - Project Schedules - Question 1
- Project Schedules - Question 2
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Question 1

Why do project managers use project schedules?

- A. To communicate task interdependencies to the project team
- B. To track the progress of the project
- C. To evaluate the actual progress with respect to the plan
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Scheduling Terminology
 - Including Level-of-Effort Tasks in the Schedule
 - Displaying the Schedule
 - Project Schedules - Question 1
 - Project Schedules - Question 2
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Question 2

What is an activity?

- A. A method of constructing a project network diagram
- B. A subdivision or portion of a task
- C. An element of work performed over a period of time within the project
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
- Description of a Project Network Diagram
- From WBS to Project Network Diagram
- Elements of a Project Network Diagram
- Guidelines for Creating a Project Network Diagram
- Project Network Diagrams - Question
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

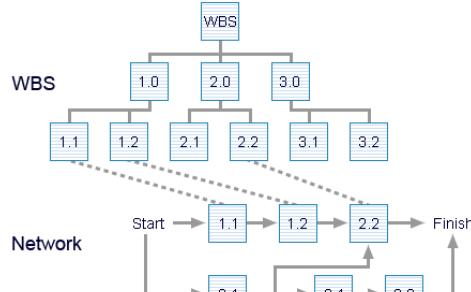
Preferences

Project Network Diagrams

Description of a Project Network Diagram

A project network diagram consists of a series of project tasks arranged in a logical flow. It is the basis for a project schedule and provides a consistent framework for planning, monitoring, and controlling the project. Every task from the WBS is represented in the network diagram. All tasks represented in the diagram must be in the WBS.

The precedence diagram includes only the tasks from the lowest level of the WBS. It does not include rollup activities (1.0, 2.0, and so on.).





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Description of a Project Network Diagram
 - From WBS to Project Network Diagram
 - Elements of a Project Network Diagram
 - Guidelines for Creating a Project Network Diagram
 - Project Network Diagrams - Question
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Network Diagrams

From WBS to Project Network Diagram

The WBS contains all of the activities necessary to complete the project, but it is not a scheduling tool. The project network diagram is a scheduling tool that shows the predecessor and successor relationships between activities from the WBS.

One difference between a project network diagram and a WBS is that a project network diagram contains start and finish nodes. Nodes are essential because they provide anchors for the software algorithms for team members who use software packages such as Microsoft Project.

When you combine all of the products and activities from the WBS, the project network diagram, estimates, and resource requirements, you will have a clear road map of the what, when, how, and who of the project.

To create a project network diagram, list the activities or tasks for the project. These become the activity nodes in your project network diagram. Ask the project team if they have activities that need to be finished before other activities can start. Record the order in which activities need to be completed. Working in this way, continue identifying and then drawing the dependency relationships to create a network diagram of the project.

Remember that a project network diagram is built only from the level or levels in the WBS in which work is assigned and accomplished. WBS activities are represented as a sequence flowing from left to right on the diagram. An arrow going into the left side of a node indicates the start of a task. An arrow leaving the right side of the node indicates the end of a task.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
- Project Network Diagrams
 - Description of a Project Network Diagram
 - From WBS to Project Network Diagram
 - Elements of a Project Network Diagram
 - Guidelines for Creating a Project Network Diagram
 - Project Network Diagrams - Question
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

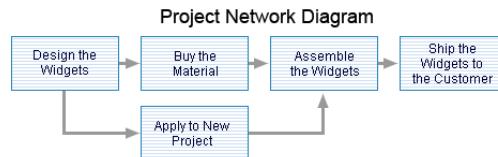
Project Network Diagrams

Elements of a Project Network Diagram

The elements included in a project network diagram are:

- Intuitive start and end points
- Boxes that represent an activity at the task level
- Arrows that denote data about the relationship between tasks
- Predecessors and successors

Here is a simple project network diagram.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
- Project Network Diagrams
 - Description of a Project Network Diagram
 - From WBS to Project Network Diagram
 - Elements of a Project Network Diagram
 - Guidelines for Creating a Project Network Diagram
- Project Network Diagrams - Question
- Precedence Diagram
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Network Diagrams

Guidelines for Creating a Project Network Diagram

Follow these guidelines for creating a project network diagram:

- The project network diagram starts with a task or milestone.
- The project network diagram ends with a task or milestone.
- There are predecessors or successors for all activities - no dangle, or separate, unrelated tasks without connecting arrows.
- The network logic must be kept up-to-date. You must go back and check the relationships as the project progresses. Project changes might mean relationship changes, and the project network diagram must reflect them.
- There are no loops. Circular relationships do not allow definition of an end date. Some sophisticated software tools allow loops, but the default settings must be adjusted and the number of loops specified.

An example of a loop is as follows:

1. Development sends code to Test.
2. Test returns code to Development with defects marked.
3. Development fixes the defects.
4. Development sends code back to Test.

With the fourth step, the process starts to repeat itself.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
- Project Network Diagrams
 - Description of a Project Network Diagram
 - From WBS to Project Network Diagram
 - Elements of a Project Network Diagram
 - Guidelines for Creating a Project Network Diagram
- Project Network Diagrams - Question

[Preferences](#)

Project Network Diagrams

Question

Which of the following are elements of a project network diagram?

- A. Schedules
- B. Boxes that represent an activity at the task level
- C. Arrows that contain data about the relationships between tasks
- D. Estimates and work products
- E. Predecessors and successors
- F. Intuitive start and end points

[Submit Answer](#)



Project Management Orientation

<input checked="" type="checkbox"/>	1: Getting Started
<input checked="" type="checkbox"/>	2: Define the Project
<input checked="" type="checkbox"/>	3: Team Management
<input checked="" type="checkbox"/>	4: Identify and Validate Requirements
<input checked="" type="checkbox"/>	5: Create Decomposition Structures
<input checked="" type="checkbox"/>	6: Risk Management
<input checked="" type="checkbox"/>	7: Project Estimates
<input checked="" type="checkbox"/>	8: Project Schedules
<input checked="" type="checkbox"/>	Fast Points
<input checked="" type="checkbox"/>	Project Schedules
<input checked="" type="checkbox"/>	Project Network Diagrams
<input checked="" type="checkbox"/>	Precedence Diagram
<input checked="" type="checkbox"/>	Creating a Precedence Diagram
<input type="checkbox"/>	PDM Network Relationships
<input type="checkbox"/>	Lead Time and Lag Time
<input type="checkbox"/>	Precedence Diagrams - Question
<input type="checkbox"/>	Using the Precedence Diagram Method
<input type="checkbox"/>	Documenting the Values in Each Node
<input type="checkbox"/>	Calculating Start and Finish Dates
<input type="checkbox"/>	Applying the Backward Pass
<input type="checkbox"/>	Lag and Lead Time in the Forward and Backward Pass
<input type="checkbox"/>	Free Float and Total Float
<input type="checkbox"/>	The Critical Path
<input type="checkbox"/>	Finalize the Schedule
<input type="checkbox"/>	Seven Keys
<input type="checkbox"/>	WWPMM
<input type="checkbox"/>	Mentor
<input type="checkbox"/>	Case Study
<input type="checkbox"/>	Self-Check
<input type="checkbox"/>	9: Change Management
<input type="checkbox"/>	10: Project Control and Delivery

Preferences

Precedence Diagram

Creating a Precedence Diagram

Three common methods of creating project network diagrams are the precedence diagram method (PDM), the project evaluation and review technique (PERT), and the critical path method (CPM).

Many project managers use the PDM to create a specific type of project network diagram. In a PDM diagram:

- Activities are represented by boxes or nodes.
- Activities are linked by one of three common types of precedence relationships.
- The logical relationships of project activities are displayed.
- A time line is drawn running from left (earlier) to right (later).
- The start and finish dates for each activity are shown.

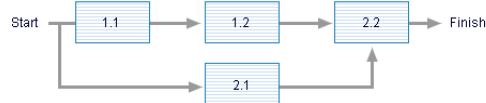
Although a precedence diagram has specific information, such as predecessor, successor, and duration, written on each box, it is different from a conventional flow diagram. It cannot, for example, contain loops, because this would require moving backward in time.

Each box in a precedence diagram represents an activity at the WBS task level; these boxes are called nodes. Nodes are linked by arrows that show the nature of the relationship between predecessor and successor activities.

In the following chart, notice that activity 1.1 is the predecessor to activity 1.2. This means that activity 1.1 must be completed before activity 1.2 can start. Following this logic, activity 2.2 cannot start until activities 1.2 and 2.1 are both completed. Note that there is no precedence relationship between 1.2 and 2.1, so there is no arrow connecting them.

PDM diagrams are frequently confused with PERT charts. You can tell them apart because PERT charts contain multiple time estimates for each node, whereas PDM networks have a single time estimate for each work package. PERT charts also use activity on arrow (AOA), where the arrow represents the activity and the node is the event; for example, the start or finish of an activity.

Precedence Diagram Method Example





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Creating a Precedence Diagram
- PDM Network Relationships
 - Lead Time and Lag Time
 - Precedence Diagrams - Question
 - Using the Precedence Diagram Method
 - Documenting the Values in Each Node
 - Calculating Start and Finish Dates
 - Applying the Backward Pass
 - Lag and Lead Time in the Forward and Backward Passes
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

PDM Network Relationships

The activities in a PDM network diagram have one of three types of precedence relationships.

Click each tab to read a description of that type of relationship.

 Finish-to-start (FS)
 Finish-to-finish (FF)
 Start-to-start (SS)

Finish-to-Start Relationships

The FS relationship is the most common precedence relationship. In an FS relationship, one activity must finish before another activity begins. In this example, activity 1.2 cannot start until activity 1.1 is finished.

Examples of FS relationships might include:

- Pour the concrete; remove the frame.
- Define requirements; write the code.
- Set the budget; buy the product.

Finish-to-Start Relationship





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Creating a Precedence Diagram
- PDM Network Relationships
 - Lead Time and Lag Time
 - Precedence Diagrams - Question
 - Using the Precedence Diagram Method
 - Documenting the Values in Each Node
 - Calculating Start and Finish Dates
 - Applying the Backward Pass
 - Lag and Lead Time in the Forward and Backward Passes
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

PDM Network Relationships

The activities in a PDM network diagram have one of three types of precedence relationships.

Click each tab to read a description of that type of relationship.

 Finish-to-start (FS)

 Finish-to-finish (FF)

 Start-to-start (SS)

Finish-to-Finish Relationships

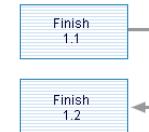
In an FF relationship, the predecessor activity must be completed at the same time as the successor activity is scheduled to finish. You might need to know how to build FF relationships if your sponsor is operating on a just-in-time basis or if you have no warehousing capabilities.

FF relationships are important when two tasks must finish at the same time;

For example:

- Bake the turkey; bake the yams.
- Develop the product; develop the user guide.
- Test the code; validate the documentation.

Finish-to-Finish Relationship





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Creating a Precedence Diagram
- PDM Network Relationships
 - Lead Time and Lag Time
 - Precedence Diagrams - Question
 - Using the Precedence Diagram Method
 - Documenting the Values in Each Node
 - Calculating Start and Finish Dates
 - Applying the Backward Pass
 - Lag and Lead Time in the Forward and Backward Passes
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

PDM Network Relationships

The activities in a PDM network diagram have one of three types of precedence relationships.

Click each tab to read a description of that type of relationship.

 Finish-to-start (FS)
 Finish-to-finish (FF)
 Start-to-start (SS)

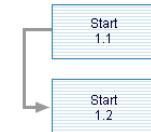
Start-to-Start Relationships

SS precedence relationships are used in situations where one or more key activities must be started at the same time so that a project can remain on schedule. An SS dependency requires that the predecessor activity be scheduled to start before or simultaneously with the successor activity. In this example, activity 1.2 cannot start until activity 1.1 has started.

These are examples of SS relationships:

- Write text; revise text.
- Install plumbing; install wiring.
- Select a design; select vendors.

Start-to-Start Relationship





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules

 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram

 - Creating a Precedence Diagram
 - PDM Network Relationships
 - Lead Time and Lag Time

- Precedence Diagrams - Question
- Using the Precedence Diagram Method
- Documenting the Values in Each Node
- Calculating Start and Finish Dates
- Applying the Backward Pass
- Lag and Lead Time in the Forward and Backward Passes
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

Lead Time and Lag Time

Lead time and lag time are changes in precedence relationships that direct a delay or acceleration in the successor task. Both are formal ways to adjust the schedule.

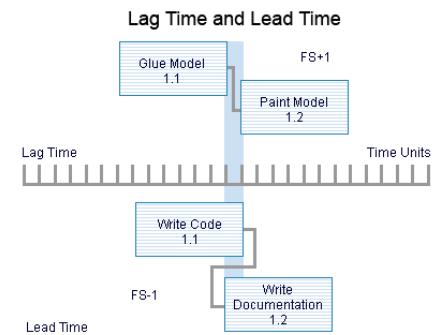
Lag time is a delay imposed on the relationship between two activities. For example, in a finish-to-start dependency with a 10-day lag, the successor activity cannot start until 10 days after the predecessor has finished. Lag time is generally expressed as a positive number because lag time adds to the overall duration of a series of activities. Lag time must be counted when computing your schedule duration.

Lead time is an acceleration of the successor activity. For example, in a finish-to-start dependency with a 10-day lead, the successor activity can start 10 days before the predecessor has finished. Lead time is usually expressed as a negative number because it subtracts from the overall duration of a series of activities.

An example of the use of lag time is adding one day to a six-day model airplane project schedule. After the first three-day activity, Glue Model (activity 1.1), is complete, one day of lag time is added to enable the glue to dry. Then the remaining three-day activity, Paint Model (activity 1.2), can be accomplished. The result is an overall schedule duration of seven days.

Lag time is not counted as part of an activity's duration. Lag represents a fixed delay between the start or finish of one activity and the start or finish of another.

An example of the use of lead time is the subtraction of a week from an overall six-week schedule for creating a software program. The first activity, Write Code, does not necessarily need to be completed before the second activity, Write Documentation, begins. By overlapping these two activities by one week, the overall schedule can be reduced to five weeks.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Creating a Precedence Diagram
 - PDM Network Relationships
 - Lead Time and Lag Time
- Precedence Diagrams - Question
 - Using the Precedence Diagram Method
 - Documenting the Values in Each Node
 - Calculating Start and Finish Dates
 - Applying the Backward Pass
 - Lag and Lead Time in the Forward and Backward Pass
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

Question

Select the statements that correctly describe lag time and lead time. (Select all that apply.)

- A. Lag time is a delay between two activities.
- B. They require that the predecessor activities be scheduled to start simultaneously.
- C. They require that the predecessor activities be completed before the successor activity is scheduled to finish.
- D. Lag is a relationship that directs a delay in a successor task.
- E. Lead time is an acceleration of the successor activity.
- F. They are formal ways to adjust the schedule.

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Creating a Precedence Diagram
 - PDM Network Relationships
 - Lead Time and Lag Time
 - Precedence Diagrams - Question
 - Using the Precedence Diagram Method
 - Documenting the Values in Each Node
 - Calculating Start and Finish Dates
 - Applying the Backward Pass
 - Lag and Lead Time in the Forward and Backward Pass
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

Using the Precedence Diagramming Method

The first step in drawing a precedence diagram is to determine the dependencies among the activities in your WBS. A good way to do this is to put the title of each activity on a small piece of note paper. Take all the notes and stick them on a large piece of paper or on a wall. Along with members of the project team, work through all the dependencies, putting them in their correct order. You will probably change your mind several times and move the notes around. When the activities are in the correct order, draw arrows between them denoting the dependencies. This gives you the basic layout of your precedence diagram. Take the time to ensure that the project team agrees on the layout of the project activities.

When you have the basic layout of the diagram, write the estimated duration of each activity in the middle of its box under the title.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
- Creating a Precedence Diagram
- PDM Network Relationships
- Lead Time and Lag Time
- Precedence Diagrams - Question
- Using the Precedence Diagram Method
- Documenting the Values in Each Node
- Calculating Start and Finish Dates
- Applying the Backward Pass
- Lag and Lead Time in the Forward and Backward Passes
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

Documenting the Values in Each Node

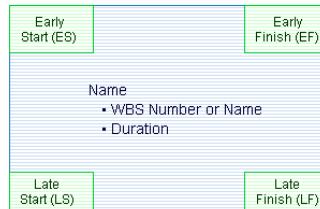
The boxes you created in the preceding paragraph are part of the standard format for the nodes in a precedence diagram. The activity name, WBS number, and activity duration are placed in the middle of the box. Four other values are placed in the corners of the box. These four values are:

- The early start (ES), which is the earliest time the activity can start
- The early finish (EF), which is the earliest time the activity can finish
- The late start (LS), which is the latest time the activity can start
- The late finish (LF), which is the latest time the activity can finish

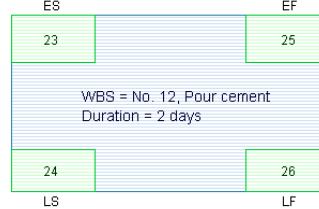
The first image is an activity node before it has been completed.

The second is an activity node after it has been completed. The activity for this node is Pour Cement; its WBS number is 12; and its duration is two days. The ES is day 23 of the project; the EF is day 25; the LS is day 24; and the LF is day 26.

Example Activity



Pour Cement



Example activity node

Example activity represented with a box. Inside the box is the text "Name, WBS Number or Name, and Duration"

In each corner of the box there is a small box with text inside.

At the top left corner is the value for Early Start (ES) for the activity.

At the bottom left corner is the value for Late Start (LS) for the activity.

At the top right corner is the value for Early Finish (EF) for the activity.

At the bottom right corner is the value for Late Finish (LF) for the activity.

Example activity node: Pour Cement

This graphic shows the activity named "Pour Cement" represented with a box. Inside the box is the text "WBS = No. 12, Pour Cement, and Duration = 2 days"

In each corner of the box there is a small box with a value inside.

At the top left corner is the value for Early Start (ES) for the activity which in this case is 23.

At the bottom left corner is the value for Late Start (LS) for the activity which in this case is 24.

At the top right corner is the value for Early Finish (EF) for the activity which in this case is 25.

At the bottom right corner is the value for Late Finish (LF) for the activity which in this case is 26.

So we have the values: ES=23, EF=25, LS=24, LF=26.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Creating a Precedence Diagram
 - PDM Network Relationships
 - Lead Time and Lag Time
 - Precedence Diagrams - Question
 - Using the Precedence Diagram Method
 - Documenting the Values in Each Node
 - Calculating Start and Finish Dates
 - Applying the Backward Pass
 - Lag and Lead Time in the Forward and Backward Pass
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

Calculating Start and Finish Dates

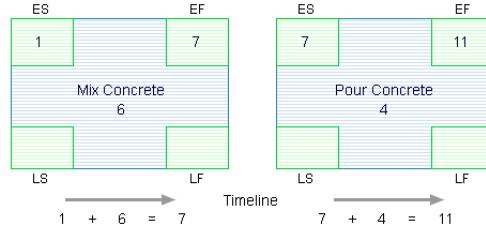
Part of creating a precedence diagram is calculating the start and end dates for each activity. Two processes that help you do this are the forward pass and the backward pass.

Applying the Forward Pass

The **forward pass** is used to calculate the ES and EF dates of all network activities. Here are the steps to follow.

The first activity starts on day 1 of the project; therefore that is the ES date for that activity. In the following example, the first activity is Mix Concrete. Its ES is day 1, the first day of the project.

Example of Forward Pass



Now you can calculate the EF for the first activity by adding the activity's duration to the ES. In this case, the duration is 6 days, so the EF is 7.

The ES for the next activity is the EF of the preceding activity. In our example, the ES for Pour Concrete is the EF for Mix Concrete, 7. Add this to the duration of the second activity, 4, to get its EF, 11.

By going through the entire diagram in this way, you will arrive at the project's EF, the earliest date the project can finish.

The formula for the forward pass is $ES + \text{duration} = EF$.

One point to keep in mind is that some activities have multiple predecessors. The ES is the earliest date that all the dependencies have been satisfied.

Example of Forward Pass

The graphic shows an example of a Forward Pass.

It shows two consecutive activities represented by boxes. The first one on the left is for Mix Concrete with duration of 6 units and the one on the right is for Pour Concrete with a duration of 4 units.

The values for the first activity are $ES=1$ and $EF=7$.

The values for the second activity are $ES=7$ and $EF=11$.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Creating a Precedence Diagram
 - PDM Network Relationships
 - Lead Time and Lag Time
 - Precedence Diagrams - Question
 - Using the Precedence Diagram Method
 - Documenting the Values in Each Node
 - Calculating Start and Finish Dates
 - Applying the Backward Pass
- Lag and Lead Time in the Forward and Backward Pass
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery

Preferences

Precedence Diagram

Applying the Backward Pass

The **backward pass** is used to calculate the LS and LF dates of all network activities. These are the latest dates these events can take place without affecting the finish date of the project.

For this example, assume that the LF of the activity following Pour Concrete is 15. To calculate the LS of Pour Concrete, take 15 and subtract 4, the duration of the activity, to get 11.

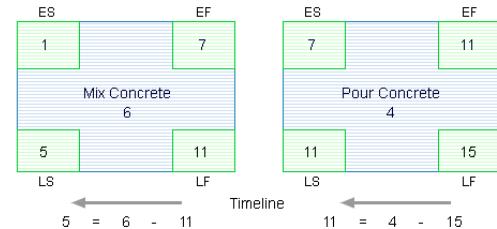
The LS of Pour Concrete is the LF for Mix Concrete. To calculate the LS for Mix Concrete, subtract the duration from the LF: $11 - 6 = 5$. This means that Mix Concrete can start as late as day five without affecting the finish date of the project.

The LS calculation is $LS = LF - \text{duration}$.

Note that in the last activity of the project the EF is the same as the LF. Using that LF, you can start the backward pass.

Also note that the LS and LF numbers do not equal the ES and EF on the bottom path.

Example of Backward Pass



Example of Backward Pass

The graphic shows an example of a Backward Pass.

It shows two consecutive activities represented by boxes. The first one on the left is for Mix Concrete with a duration of 6 units and the one on the right is for Pour Concrete with a duration of 4 units.

The values for the first activity are ES=1 and EF=7.
The values for the second activity are ES=7 and EF=11.

The remaining values are calculated from right to left.

The values for the second activity are LF=15 and LS=11.
The values for the first activity are LF=11 and LS=5.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
- Creating a Precedence Diagram
- PDM Network Relationships
- Lead Time and Lag Time
- Precedence Diagrams - Question
- Using the Precedence Diagram Method
- Documenting the Values in Each Node
- Calculating Start and Finish Dates
- Applying the Backward Pass
- Lag and Lead Time in the Forward and Backward Pass

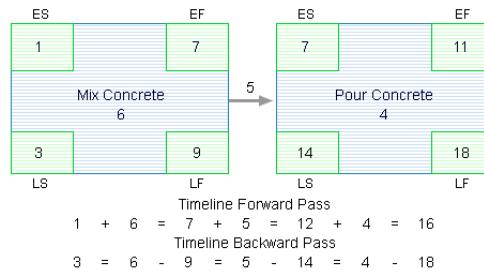
- Free Float and Total Float
- The Critical Path
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- Change Management

Preferences

Precedence Diagram

Lag and Lead Time in the Forward and Backward Pass

Example of Lag Time



Whereas lag time adds to the schedule, lead time subtracts from it. In this example, it has been decided that Pour Concrete can start while Mix Concrete is being done. Again, notice the arrow. Using the forward pass, 2 days would be subtracted from the EF of Mix Concrete to calculate the ES of Pour Concrete. The formula is $EF - lead\ time = ES\ of\ the\ next\ activity$.

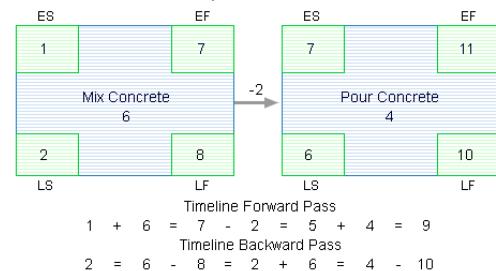
Using the backward pass in this example, you would add the 2 days of lead time from the LS of Pour Concrete, 6, to get the LF of Mix Concrete, 8.

You might recall that lag time adds time to the schedule and lead time subtracts it. An example of lag time is waiting until the glue dries before painting a model. An example of lead time is doing two activities in parallel rather than in sequence to save time in a development project. You must take lag time and lead time in a schedule into account when calculating using the forward or backward pass to calculate.

In this example, the EF for Mix Concrete is 7. Using the forward pass, and with no lag time, that would also be the ES for Pour Concrete as well. However, if you decided to add 5 days to allow the concrete to cure (notice the arrow), the ES for Pour Concrete becomes 12. The formula is $EF + lag\ time = ES\ of\ the\ next\ activity$.

Using the backward pass in the following example, you would subtract the 5 days of lag time from the LS of Pour Concrete to get the LF of Mix Concrete.

Example of Lead Time



Example of Lag Time

The graphic shows an example of Lag Time.

It shows two consecutive activities represented by boxes. The first one on the left is Mix Concrete (Duration=6, ES=1, EF=7, LS=3, LF=9). The one on the right is Pour Concrete (Duration=4, ES=7, EF=11, LS=14, LF=18).

There is a lag of 5 units between both activities shown by a number above the arrow that points from the activity on the left to the one on the right.

The calculations for the Timeline Forward Pass are:
 $1 (ES1) + 6 = 7 (EF1) + 5 (\text{lag time}) = 12 (ES2) + 4 = 16 (EF2)$

The calculations for the Timeline Backward Pass are:
 $18 (LF2) - 4 = 14 (LS2) - 5 (\text{lag time}) = 9 (LF1) - 6 = 3 (LS1)$

Example of Lead Time

The graphic shows an example of Lead Time.

It shows two consecutive activities represented by boxes. The first one on the left is for Mix Concrete with a duration of 6 units and the one on the right is for Pour Concrete with a duration of 4 units.

There is a lead of -2 units between both activities shown by a number above the arrow that points from the activity on the left to the one on the right.

The calculations for the Timeline Forward Pass are:
 $1 (ES1) + 6 = 7 (EF1) - 2 (\text{lead time}) = 5 (ES2) + 4 = 9 (EF2)$

The calculations for the Timeline Backward Pass are:
 $10 (LF2) - 4 = 6 (LS2) + 2 (\text{lead time}) = 8 (LF1) - 6 = 2 (LS1)$



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
- Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Free Float and Total Float

What Is Float?

There are two kinds of float. Free float, or slack, is the amount of time a single activity can be delayed without delaying the ES of any subsequent activities. Free float determines the pressure that one activity puts on the next activity.

Total float is the sum of free float for each activity in a particular path. It is also the amount of time an activity can be delayed from its ES date without delaying the project finish date. Total float often changes as the project progresses and changes are made to the project plan.

Project managers use total float to adjust schedules and resource allocations. When it is used to adjust resource allocations, the process is called resource leveling.

Total float is an important indicator of project status. If total float is greater than 0, then slack time is available. If total float is 0, then the situation is critical. If total float is less than 0, then the project is already behind schedule or critically late.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
- Calculating Free Float and Total Float
 - Total Float and Free Float Example
 - Free Float and Total Float - Question
- The Critical Path
- Finalize the Schedule
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Free Float and Total Float

Calculating Free Float and Total Float

Click each tab to read the description and calculations.

Free Float

Total Float

How to Determine Free Float

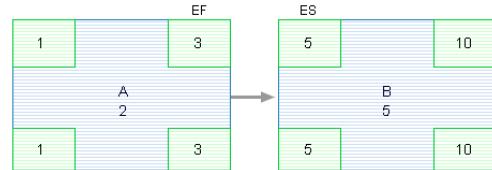
Calculations for float time use ES, EF, LS, and LF values.

The calculation for free float, which again is the amount of time an activity can be delayed without affecting the early start date of the successor activity, is:

$$\text{Free Float} = \text{ES} (\text{successor task}) - \text{EF} (\text{predecessor task})$$

In this example, the calculation for free float between activity A and activity B is $\text{FF} = 5 - 3 = 2$. This means that task A can finish as late as day 5 without affecting task B.

Free Float Example



Free Float Example

The graphic shows an example of Free Float.

It shows two consecutive activities represented by boxes.

For Activity A, ES=1, EF=3, LS=1, LF=3, Duration=2.

For activity B, ES=5, EF=10, LS=5, LF=10, Duration=5.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
- Calculating Free Float and Total Float
 - Total Float and Free Float Example
 - Free Float and Total Float - Question
- The Critical Path
- Finalize the Schedule
- Seven Keys
- WWPM
- Mentor
- Case Study
- Self-Check

Preferences

Free Float and Total Float

Calculating Free Float and Total Float

Click each tab to read the description and calculations.

Free Float

Total Float

How to Determine Total Float

The calculation for total float , which again is the time an activity can be delayed without affecting the final end date of the project, is:

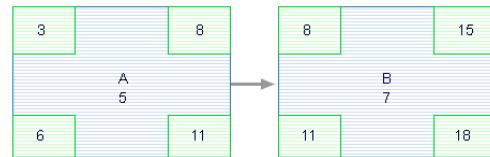
$$\text{Total Float} = \text{LS} - \text{ES} \text{ or } \text{LF} - \text{EF}$$

In this example, the calculations for total float for tasks A and B are:

$$\text{Total Float(A)} = 6 - 3 \text{ or } 11 - 8 = 3$$

$$\text{Total Float(B)} = 11 - 8 \text{ or } 18 - 15 = 3$$

Total Float Example



Total Float Example

The graphic shows an example of Total Float.

It shows two consecutive activities represented by boxes.

For Activity A, ES=3, EF=8, LS=6, LF=11, Duration=5.

For activity B, ES=8, EF=15, LS=11, LF=18, Duration=7.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - Calculating Free Float and Total Float
- Total Float and Free Float Example
- Free Float and Total Float - Question
- The Critical Path
- Finalize the Schedule
- Seven Keys
- WWPPM
- Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

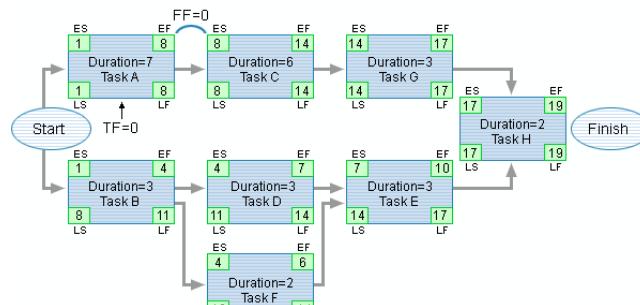
Free Float and Total Float

Total Float and Free Float Example

Float Example

Total Float = LS-ES or LF-EF

Free Float = ES (Successor) - EF (Predecessor)



Calculate the total float and free float for this example. Remember that you must complete the forward pass and then the backward pass before you can calculate float.

The total float for tasks A, C, G, and H is 0. The total float for tasks B, D, and E is 7: 8 - 1, 11 - 4, or 14 - 7. The total float for task F is 8: 12 - 4.

The free float for tasks A, C, G, H, B, and D is 0. The free float for task F is 1: 7 - 6, and for task E, 7: 17 - 10.

Remember that free float is time available between activities, and total float is time available within an activity. Float can be used to determine whether a project might be finished earlier by using resources that have time available within a task or between tasks to aid those tasks with 0 float. The tasks with 0 float are critical and must start on the ES date and finish on the EF date, or your project will be late.

Float Example

The graphic shows an example of float.

There is a series of activities with two paths from start (Tasks A and B) to finish (Task H).

Path 1: Tasks: A, C, G, and H.

Path 2: Tasks: B, D, E, and H.

Task F is performed concurrently with D.

The values for each task are:

- A: ES=1, EF=8, LS=1, LF=8, Duration=7
- B: ES=1, EF=4, LS=8, LF=11, Duration=3
- C: ES=8, EF=14, LS=8, LF=14, Duration=6
- D: ES=4, EF=7, LS=11, LF=14, Duration=3
- E: ES=7, EF=10, LS=14, LF=17, Duration=3
- F: ES=4, EF=6, LS=12, LF=14, Duration=2
- G: ES=14, EF=17, LS=14, LF=17, Duration=3
- H: ES=17, EF=19, LS=17, LF=19, Duration=2

The formulas to calculate Float are:

Total Float = LS - ES or LF - EF

Free Float = ES (Successor) - EF (Predecessor)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - Calculating Free Float and Total Float
 - Total Float and Free Float Example
 - Free Float and Total Float - Question
- The Critical Path
- Finalize the Schedule
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Free Float and Total Float

Question

How is total float calculated?

- A. Total Float = Late Start - Early Start
- B. Total Float = Late Finish - Early Finish
- C. Either A or B
- D. Neither A nor B

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
- Characteristics of the Critical Path
 - The Critical Path - Question
- Finalize the Schedule
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

The Critical Path

Characteristics of the Critical Path

As the project manager, you want to make the best use of your time. The critical path method helps you do that by focusing your attention on the activities that must start and finish on time or else the project will be late. All the activities that have zero total float are on the critical path. If any of them starts or finishes late, then the whole project will be late. Every project will have at least one critical path that runs from the Start node to the Finish node.

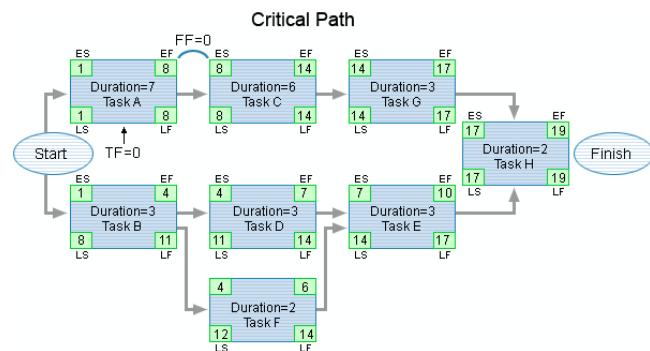
The **critical path** of a project is the longest path in the network; therefore, it determines the earliest completion date of the project. In this example, the critical path runs through tasks A, C, G, and H. This path is the one with no float, and it is the longest path through the project. It represents the shortest time period in which the project can be completed: 19 days.

The critical path might change as your project progresses; for example, if another path within your project has a total float of 1 day and is delayed by 2 days, that path might now become the critical path.

Sometimes a project has multiple critical paths. This can increase the risk of missing the project's completion date because there is more than one path that has no float in the schedule. If you do not know where the critical paths are, the risk is much higher that you will not meet your schedule.

In summary, the critical path is:

- The longest path through the project
- The path with 0 float or slack time
- The shortest time to complete the project



Example of critical path

The graphic shows an example of critical path.

There is a series of activities with two paths from start (Tasks A and B) to finish (Task H).

Path 1: Tasks: A, C, G, and H.
 Path 2: Tasks: B, D, E, and H.
 Task F is performed concurrently with D.

The values for each task are:
 A: ES=1, EF=8, LS=1, LF=8, Duration=7
 B: ES=1, EF=4, LS=8, LF=11, Duration=3
 C: ES=8, EF=14, LS=8, LF=14, Duration=6
 D: ES=4, EF=7, LS=11, LF=14, Duration=3
 E: ES=7, EF=10, LS=14, LF=17, Duration=3
 F: ES=4, EF=6, LS=12, LF=14, Duration=2
 G: ES=14, EF=17, LS=14, LF=17, Duration=3
 H: ES=17, EF=19, LS=17, LF=19, Duration=2



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
- The Critical Path
 - Characteristics of the Critical Path
 - The Critical Path - Question
- Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

The Critical Path

Question

What is the critical path?

- A. The longest path in the network
- B. The path with activities having float or slack time
- C. The longest time to complete the project
- D. All of the above



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
- Finalize the Schedule
 - Validating the Precedence Diagram
 - How to Create a Schedule from a Precedence Diagram
 - Checking the Schedule
 - If Your Schedule Is Constrained by Time or Resources
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Finalize the Schedule

Validating the Precedence Diagram

So far you have been making mathematical calculations, and now you need to make sure the results are going to work in the real world.

Before you translate the precedence diagram into a schedule, you must do one final validation.

The validation steps are:

Precedence Diagram

Become familiar with your network and analyze it

Ensure that your objectives can be met

- Have you correctly identified your critical path?
- Should any tasks with large amounts of float be rescheduled?
- Are there any danglelers?



Project Management Orientation

<input checked="" type="checkbox"/> 1: Getting Started
<input checked="" type="checkbox"/> 2: Define the Project
<input checked="" type="checkbox"/> 3: Team Management
<input checked="" type="checkbox"/> 4: Identify and Validate Requirements
<input checked="" type="checkbox"/> 5: Create Decomposition Structures
<input checked="" type="checkbox"/> 6: Risk Management
<input checked="" type="checkbox"/> 7: Project Estimates
<input checked="" type="checkbox"/> 8: Project Schedules
<input checked="" type="checkbox"/> Fast Points
<input checked="" type="checkbox"/> Project Schedules
<input checked="" type="checkbox"/> Project Network Diagrams
<input checked="" type="checkbox"/> Precedence Diagram
<input checked="" type="checkbox"/> Free Float and Total Float
<input checked="" type="checkbox"/> The Critical Path
<input checked="" type="checkbox"/> Finalize the Schedule
<input checked="" type="checkbox"/> Validating the Precedence Diagram
<input type="checkbox"/> How to Create a Schedule from a Precedence Diagram
<input type="checkbox"/> Checking the Schedule
<input type="checkbox"/> If Your Schedule Is Constrained by Time or Resources
<input checked="" type="checkbox"/> Seven Keys
<input type="checkbox"/> WWPMM
<input type="checkbox"/> Mentor
<input checked="" type="checkbox"/> Case Study
<input type="checkbox"/> Self-Check
<input checked="" type="checkbox"/> 9: Change Management
<input checked="" type="checkbox"/> 10: Project Control and Delivery
<input checked="" type="checkbox"/> 11: Project Management Review
<input checked="" type="checkbox"/> 12: Project Closeout
<input checked="" type="checkbox"/> 13: Project Management Tool Suite
<input checked="" type="checkbox"/> 14: Self-Assessment and Final Exam

Preferences

Finalize the Schedule

Validating the Precedence Diagram

So far you have been making mathematical calculations, and now you need to make sure the results are going to work in the real world.

Before you translate the precedence diagram into a schedule, you must do one final validation.

The validation steps are:

Precedence Diagram

Become familiar with your network and analyze it

Ensure that your objectives can be met

- What risks are on the critical path?
- Are there near-critical paths?
- How much float is available?
- What types of float exist on which tasks?



Project Management Orientation

<input checked="" type="checkbox"/> 1: Getting Started
<input checked="" type="checkbox"/> 2: Define the Project
<input checked="" type="checkbox"/> 3: Team Management
<input checked="" type="checkbox"/> 4: Identify and Validate Requirements
<input checked="" type="checkbox"/> 5: Create Decomposition Structures
<input checked="" type="checkbox"/> 6: Risk Management
<input checked="" type="checkbox"/> 7: Project Estimates
<input checked="" type="checkbox"/> 8: Project Schedules
<input checked="" type="checkbox"/> Fast Points
<input checked="" type="checkbox"/> Project Schedules
<input checked="" type="checkbox"/> Project Network Diagrams
<input checked="" type="checkbox"/> Precedence Diagram
<input checked="" type="checkbox"/> Free Float and Total Float
<input checked="" type="checkbox"/> The Critical Path
<input checked="" type="checkbox"/> Finalize the Schedule
<input checked="" type="checkbox"/> Validating the Precedence Diagram
<input type="checkbox"/> How to Create a Schedule from a Precedence Diagram
<input type="checkbox"/> Checking the Schedule
<input type="checkbox"/> If Your Schedule Is Constrained by Time or Resources
<input checked="" type="checkbox"/> Seven Keys
<input type="checkbox"/> WWPMM
<input type="checkbox"/> Mentor
<input checked="" type="checkbox"/> Case Study
<input type="checkbox"/> Self-Check
<input checked="" type="checkbox"/> 9: Change Management
<input checked="" type="checkbox"/> 10: Project Control and Delivery
<input checked="" type="checkbox"/> 11: Project Management Review
<input checked="" type="checkbox"/> 12: Project Closeout
<input checked="" type="checkbox"/> 13: Project Management Tool Suite
<input checked="" type="checkbox"/> 14: Self-Assessment and Final Exam

Preferences

Finalize the Schedule

Validating the Precedence Diagram

So far you have been making mathematical calculations, and now you need to make sure the results are going to work in the real world.

Before you translate the precedence diagram into a schedule, you must do one final validation.

The validation steps are:

Precedence Diagram

Become familiar with your network and analyze it

Ensure that your objectives can be met

- Do you need to add any milestones?
- Which tasks involve external deliverables?
- Can the work be completed in the desired time frame?
- Is delivery possible within the time frames and durations you have set?



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Validating the Precedence Diagram
 - How to Create a Schedule from a Precedence Diagram
 - Checking the Schedule
 - If Your Schedule Is Constrained by Time or Resources
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Finalize the Schedule

How to Create a Schedule from a Precedence Diagram

The following diagram indicates that there are numerous inputs to the project schedule in addition to the precedence diagram.

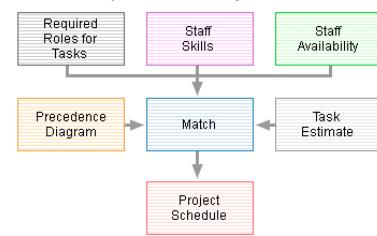
Other areas you need to consider include:

- Identifying required roles: What roles are required for each activity?
- Assessing staff skills: Who has the correct skills to do the work?
- Estimating staff availability: Are the staff available during the required time frame?
- Estimating tasks: How long will it really take to perform each task?

As the project manager, you first determine what must be done to complete each task; this means identifying the necessary roles and the needed skills. Then you determine who has the required skills and assign them to the appropriate roles. The people assigned must have the skills necessary to fulfill these roles. If they do not, you might need to add more people or change the schedule to allow time for training.

The challenge is to coordinate all of these inputs to develop a schedule that satisfies all the stakeholders.

The Inputs to the Project Schedule



You must also ensure that the assigned individuals are available when required. Consider vacation and holiday time, nonproject work, and education and training time. Because of these factors, you might need to reschedule around nonavailable time, change the utilization, change the duration, add resources, or negotiate for new resources to be assigned to the project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
- Finalize the Schedule
 - Validating the Precedence Diagram
 - How to Create a Schedule from a Precedence Diagram
 - Checking the Schedule
 - If Your Schedule Is Constrained by Time or Resources
- Seven Keys
- WWPM
- Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Finalize the Schedule

Checking the Schedule

After generating the schedule, you must check each input and assumption one more time to ensure that nothing has been overlooked. Consider involving an outside person in the checking process.



The following questions will help you check the schedule:

- Is there a complete set of roles for each task? If not, add roles where needed.
- Are there people assigned to these roles? If not, assign staff where needed.
- Do the assigned staff possess the needed skills? If not, add or change people, or re-estimate the duration to allow for training time. Arrange for training and add the training tasks to the schedule and the WBS.
- Will the people really be available when needed? If not, reschedule around nonavailable time, change utilization assumptions to adjust the duration, or add more staff.

Checking the schedule usually requires several iterative passes.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
- Finalize the Schedule
 - Validating the Precedence Diagram
 - How to Create a Schedule from a Precedence Diagram
 - Checking the Schedule
- If Your Schedule Is Constrained by Time or Resources

Preferences

Finalize the Schedule

If Your Schedule Is Constrained by Time or Resources

If your schedule is constrained by time or resources, consider the following options:

- **Crash the schedule.** This means applying more resources to reduce the overall project duration. Resources are usually applied to the activities with the least float until the desired project duration is achieved. Crashing usually increases project cost and risk, but it reduces overall project duration.
- **Fast-track the schedule.** This means compressing the project schedule by overlapping activities that normally would be done in sequence; for example, design and construction. Fast-tracking might change the relationships among tasks and shorten the critical path. Fast-tracking usually increases project cost and risk, but it reduces overall project duration.
- **Change the approach.** Changing your approach to the work might create a different set of interrelated activities with a shorter critical path. This might also require changing the WBS.
- **Re-evaluate dependencies.** Determine whether any FS start relationships can be changed to FF relationships.
- **Revisit hard constraints.** If any of these hard constraints affect a task on the critical path, that task might start or end sooner.
- **Use float.** Consider using the float you have available to adjust the schedule.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success Introduction





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys

 Work and Schedule Are Predictable Key

- WWPM
- Mentor
- Case Study
- Self-Check

 9: Change Management

- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Work and Schedule Are Predictable Key

This key covers estimating and scheduling, and is often the first key to become unhealthy on a project. Sometimes problems in this key are due to poor estimation and scheduling during the planning phase. But the root cause for work and schedule problems are often found in other keys, such as the stakeholders lose their commitment or the scope is not well understood.

Here are some criteria for assessing the Work and Schedule Are Predictable key:

- The project plan is accepted and maintained.
- Interim and final milestone and deliverable acceptance criteria and roles are accepted.
- The approach is appropriate, adequate, and followed; resources have been scheduled.
- Confidence in the accuracy of progress reports and estimates to complete is high.

Work and
schedule are
predictable



Healthy Signs

- Everyone gives the same definition of finished.
- Good evidence of control is available.
- Slippage, when it happens, is predicted

Unhealthy Signs

- Stakeholders and project team members cannot describe what finished means.
- Controls are not evident, including poor plans and tracking mechanisms.
- Slippage is a surprise.

This key is the traditional project management indicator of project health. It is otherwise known as "on time and on budget." The project team uses this early project health indicator to implement a correction in the course of the project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
- WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).

WWPMM Practices

- Schedule Management

WWPMM Activities

- Build Project Organizational Unit Work Plans
- Expand Work Plans
- Integrate Project Organizational Unit Work Plans
- Shape Project

WWPMM Work Products

- Project Management Schedule





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Mentor**What's the Value of a Precedence Diagram?**

A precedence diagram is a terrific tool that helps me understand my project, make sure I have all the activities identified, and understand how they all relate to each other and to the external dependencies. As I'm going through the process, I always find additional activities that I had missed, and I go back and add them to the WBS. By working through the dependencies, it becomes clear what needs to be done first and what can be done later.

A precedence diagram is essential so that I can see how long it's really going to take to finish this project. The critical path is the key element here. That defines the longest path. If any of those activities miss their targets, the schedule starts slipping. I have to have that data to create my schedules and understand which activities have the highest priority. Otherwise, I'm just guessing.

Why Check the Schedule So Thoroughly?

When the schedule is approved by the stakeholders, it becomes one of the project's constraints, along with cost and scope. That means that it has to be as accurate as possible. If the schedule is incorrect but the scope is correct, I'm going to miss the dates, and the customer will not be happy. In most cases, the project will also go over budget at the same time.

A great precedence diagram doesn't guarantee a great schedule. I find that I need to carefully recheck the assumptions that went into the precedence and the schedule after I create them. I ask myself, Is this schedule based on reality? Can we really do it?



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Schedules

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

To complete the task for this unit, follow these steps:

1. Read the attached files, *Module 5 WBS Solution.pdf* and *Rest Easy Hotel Estimate.doc*.
2. Based on all the information you have about your subproject, add the missing information to the precedence diagram contained in the attached file *Module 8 PDM Exercise.ppt*.



Module 5 WBS
Solution.pdf



Rest Easy Hotel
Estimate.doc



Module 8 PDM
Exercise.ppt



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

 Case Study Solution

- Self-Check
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

Check your work on the assignment by comparing it with the solution in the attached file.



Module 8 PDM Solution.pdf

Module 8 solution alternative text

Module 8 PDM Solution.pdf

List of tasks, with duration, early start, early finish, late start, and late finish

- Task 1.1.1.1: Duration = 10 ES = 1 EF = 11 LS = 1 LF = 11
- Task 1.1.1.2: Duration = 15 ES = 11 EF = 26 LS = 11 LF = 26
- Task 1.1.1.3: Duration = 15 ES = 26 EF = 41 LS = 26 LF = 41
- Task 1.1.1.4: Duration = 10 ES = 41 EF = 51 LS = 41 LF = 51
- Task 1.1.1.5: Duration = 15 ES = 51 EF = 66 LS = 51 LF = 66
- Task 1.1.1.6: Duration = 10 ES = 66 EF = 76 LS = 66 LF = 76
- Task 1.1.2.1: Duration = 50 ES = 76 EF = 126 LS = 76 LF = 126
- Task 1.1.2.2: Duration = 25 ES = 126 EF = 151 LS = 126 LF = 151
- Task 1.1.2.3: Duration = 15 ES = 151 EF = 166 LS = 151 LF = 166
- Task 1.1.2.4: Duration = 15 ES = 166 EF = 181 LS = 166 LF = 181
- Task 1.1.2.5: Duration = 15 ES = 181 EF = 196 LS = 201 LF = 216
- Task 1.2.1: Duration = 10 ES = 166 EF = 176 LS = 176 LF = 186
- Task 1.2.2: Duration = 15, ES = 76, EF = 91, LS = 186, LF = 201
- Task 1.4.2: Duration = 5, ES = 191, EF = 196, LS = 201, LF = 206, Lag = 10
- Task 1.3: Duration = 10, ES = 166, EF = 176, LS = 166, LF = 176
- Task 1.4.3.1: Duration = 5, ES = 176, EF = 181, LS = 176, LF = 181
- Task 1.4.3.2: Duration = 5, ES = 181, EF = 186, LS = 181, LF = 186
- Task 1.4.4.1: Duration = 5, ES = 186, EF = 191, LS = 186, LF = 191
- Task 1.4.4.2: Duration = 10, ES = 191, EF = 201, LS = 191, LF = 201
- Task 1.4.4.3: Duration = 5, ES = 201, EF = 206, LS = 201, LF = 206, Lag = 10
- Deliver the Class: ES = 216, LS = 216



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 1 of 15

What is the definition of a task?

- A. A subdivision or portion of an activity
- B. A dependency between two project activities
- C. A schematic of the dependencies among project activities
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 2 of 15

What is the definition of precedence relationships as it relates to scheduling?

- A. A dependency between two project activities, or between a project activity and a milestone
- B. A list of the starting and ending points of activities
- C. The method of constructing a project network diagram using nodes to represent activities
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 3 of 15

Project schedules can be displayed graphically as:

- A. Gantt charts
- B. Precedence diagrams
- C. Milestone charts
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 4 of 15

The method used to create project network diagrams:

- A. Shows loops for repetitive tasks
- B. Uses a technique in which project activities are represented by boxes, or nodes
- C. Is sometimes referred to as a Gantt chart
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 5 of 15

Finish-start precedence relationships:

- A. Include activities where predecessor activities must be completed before the successor activities are completed
- B. Show acceleration of successor activities
- C. Are the most common type of precedence relationships
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 6 of 15

Select the statements that correctly describe finish-to-finish precedence relationships.

- A. The predecessor activity must be completed at the same time as the successor activity is scheduled to finish.
- B. They require that the predecessor activity be completed before the successor activity is scheduled to finish.
- C. An example is that by the time a product is developed, the user's guide must be completed.
- D. A and C.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 7 of 15

Start-to-start precedence relationships:

- A. Include one or more key activities that must be started at the same time so that a project can remain on schedule
- B. Require that a predecessor activity be completed before the successor activity is scheduled to finish
- C. Finish one activity before another activity begins
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 8 of 15

Place the following steps for creating a precedence diagram in the correct order.

A. Place the activities in order.

First

B. Determine the estimated duration for each activity.

First

C. Draw arrows between the activities to denote the dependencies.

First

D. Write each activity on a sheet of paper.

First

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - + Project Schedules
 - + Project Network Diagrams
 - + Precedence Diagram
 - + Free Float and Total Float
 - + The Critical Path
 - + Finalize the Schedule
- + Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 9 of 15

Match each term used in creating precedence diagrams with its definition.

A. The latest time an activity can start.

Early start

B. The earliest time an activity can finish.

Early start

C. The earliest time an activity can start.

Early start

D. The latest time an activity can finish.

Early start

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

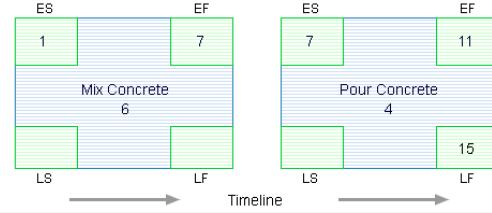
Preferences

Self-Check

Question 10 of 15

The late start (LS) for Mix Concrete is:

- A. 5
- B. 6
- C. 11
- D. It cannot be calculated with the information provided.



Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11

Preferences

Self-Check

Question 11 of 15

What is the definition of free float?

- A. The amount of time a single activity can be delayed without delaying the early start of any subsequent activity
- B. The time added to the precedence diagram
- C. Extra time built into the schedule
- D. All of the above

Submit Answer



Project Management Orientation

 5: Create Decomposition Structures 6: Risk Management 7: Project Estimates 8: Project Schedules Fast Points Project Schedules Project Network Diagrams Precedence Diagram Free Float and Total Float The Critical Path Finalize the Schedule Seven Keys WWPM Mentor Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 Question 11 Question 12 Question 13 Question 14 Question 15

Preferences

Self-Check

Question 12 of 15

Identify the methods that can be used to adjust schedules.

- A. Determine whether any hard constraints can be changed.
- B. Apply more resources to reduce the overall project duration.
- C. Determine the utilization.
- D. Consider using float to adjust the schedule.
- E. Fast-track.
- F. Crash the schedule.



Project Management Orientation

 5: Create Decomposition Structures 6: Risk Management 7: Project Estimates 8: Project Schedules Fast Points Project Schedules Project Network Diagrams Precedence Diagram Free Float and Total Float The Critical Path Finalize the Schedule Seven Keys WWPM Mentor Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 Question 11 Question 12 Question 13 Question 14 Question 15

Preferences

Self-Check

Question 13 of 15

The value of precedence diagrams is that they help project managers understand the project, identify all the activities, and understand how the activities relate to each other and to the external dependencies.

- A. True
 B. False

Submit Answer



Project Management Orientation

 5: Create Decomposition Structures 6: Risk Management 7: Project Estimates 8: Project Schedules Fast Points Project Schedules Project Network Diagrams Precedence Diagram Free Float and Total Float The Critical Path Finalize the Schedule Seven Keys WWPM Mentor Case Study Self-Check Question 1 Question 2 Question 3 Question 4 Question 5 Question 6 Question 7 Question 8 Question 9 Question 10 Question 11 Question 12 Question 13 Question 14 Question 15

Preferences

Self-Check

Question 14 of 15

It is important to review the schedule to be sure it is realistic because the schedule:

- A. Is based on precedence diagrams
- B. Shows the status of projects
- C. Becomes one of the triple constraints of projects
- D. All of the above



Project Management Orientation

- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
 - Fast Points
 - Project Schedules
 - Project Network Diagrams
 - Precedence Diagram
 - Free Float and Total Float
 - The Critical Path
 - Finalize the Schedule
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13
 - Question 14
 - Question 15

Preferences

Self-Check

Question 15 of 15

The Work and Schedule key is often the first key to become unhealthy on a project. But the root causes for these problems are often found in two other keys:

- A. Stakeholders Are Committed
- B. Business Benefits Are Being Realized
- C. Scope Is Realistic and Managed
- D. Team Is High Performing
- E. Risks Are Being Mitigated
- F. Delivery Organization Benefits Are Being Realized

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 9 Objectives

This module enables you to:

- Manage change on projects
- Identify, quantify, and make informed decisions about changes in the context of the overall project
- List the required baselines for managing a project
- Describe the change management process
- Discuss why change management is so important in project management
- Identify types of changes and typical follow-up actions to change requests

This module takes approximately 1 hour 40 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management

 Fast Points

- Change Management and Project Baselines
- The Change Management Process
- Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management

Fast Points

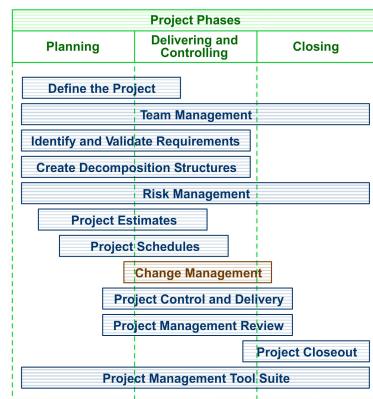
The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Change Management", which is covered mainly during the Delivering and Controlling phase.

Changes occur and cannot be ignored. Managing change is critical to the success of a project. Change management helps protect projects against scope creep, which occurs when the requirements baseline changes. As additional requirements are added to the project, the cost of the project increases and the schedule moves out.

When managing change on projects, remember the following steps:

- **First, identify the change.** Be sure to clarify the scope of the change and document it on a change request form. Estimate the complexity and the cost of investigating the change. The Change Control Board (CCB) will approve, reject, or defer the change request.
- **Second, investigate the change.** This step might be performed by the CCB. The change is investigated for its impact, as well as for the costs and benefits of the change. Alternatives might need to be developed. The cost of the change request must be estimated and submitted to the CCB.
- **Third, implement the change.** The change order provides instruction for implementing the change. Be sure to communicate impact assessment to stakeholders, including the originator of the change request.
- Change is encouraged in **Agile**, but it still needs agreeing with the client (as part of each iteration) and where change causes contractual change, it must be rigorously managed.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - What Is Change Management?
 - Types of Change
 - Baselines
 - Required Baselines for Managing a Project
 - Baselines and Change Management
 - Change Management and Project Baselines - Quiz
- The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Change Management and Project Baselines

What Is Change Management?

Change management includes the procedures required to control all of the changes that inevitably arise during the course of a project, changes that might jeopardize cost, revenue, quality, or deadlines.

Managing change is critical to the success of a project. As stated previously, executing change management might result in changes to one or more of the project baselines.

A **change request** is defined as a request to change some document or aspect of the project that has been placed under change control, or baselined.

Change management:

- Analyzes each change to ensure that it is beneficial to the project
- Determines that a change has occurred
- Manages changes when they do occur

Change management contains the following:

- Procedures for managing and controlling the baseline
- Procedures for managing a change request to completion
- Formally documented procedures for defining how to manage change
- The established documentation, tracking systems, and approval levels necessary to authorize change

Some tracking systems might include procedures for addressing changes that can be approved without prior review. If this is the case, these changes must still be documented and addressed so that they do not cause problems later in the project.

Preferences



Project Management Orientation

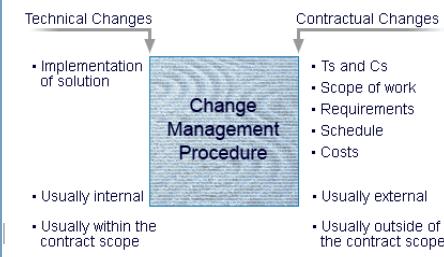
- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - What Is Change Management?
 - Types of Change
 - Baselines
 - Required Baselines for Managing a Project
 - Baselines and Change Management
 - Change Management and Project Baselines - Q
- The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management and Project Baselines

Types of Change

Changes might be technical or contractual as shown in the following figure.



Technical changes. Technical changes result from the implementation of the solution. Normally, the changes are generated internally and are within the scope of the project. An example of a technical change is implementing a program that automates test cases. This program helps improve the quality of the testing.

Contractual changes. Contractual changes result from changes in the terms and conditions, the scope of work, the requirements, schedule, and costs. Normally, contractual changes are externally generated and out of the project scope. For example, the sponsor might ask IBM to include maintenance of a system as part of a purchase agreement for the system with IBM.

For both technical and contractual changes, a formal change management procedure must be established.

Change Management and Project Baselines



A WWPMM practice addressing change management is available at the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - What Is Change Management?
 - Types of Change
 - Baselines
 - Required Baselines for Managing a Project
 - Baselines and Change Management
 - Change Management and Project Baselines - Q
- 10: The Change Management Process
- 11: Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- 12: Case Study
- 13: Self-Check
- 14: Project Control and Delivery
- 15: Project Management Review
- 16: Project Closeout
- 17: Project Management Tool Suite
- 18: Self-Assessment and Final Exam

Preferences

Change Management and Project Baselines

What Is a Baseline?

WWPMM defines a baseline as the reference data by which execution of project activities are planned and controlled. A baseline consists of elements of the agreement and the project management plans. A baseline might also be considered as the original plan, plus or minus approved changes.

A baseline becomes formal after the involved stakeholders review and approve it, then sign off in writing. After it is established, the baseline is under change control.

Why Establish Baselines?

Changes occur in almost every project. Experience has shown that without baselines, managing change is very difficult, if not impossible. Unmanaged change can cause the scope to increase to the point where the project is out of control.

Establishing a baseline helps you determine boundaries for the project, including what is being developed, when it is scheduled to be delivered, and how much it is projected to cost.

Due to the fluid nature of **Agile projects**, the planning in agile projects is done in detail one iteration or sprint at a time. Unlike the Waterfall Model a detailed end to end project plan is not created in the agile approach.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management

Fast Points

- Change Management and Project Baselines
 - What Is Change Management?
 - Types of Change
 - Baselines

 Required Baselines for Managing a Project

- Baselines and Change Management
- Change Management and Project Baselines - Q
- The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management and Project Baselines

Required Baselines for Managing a Project

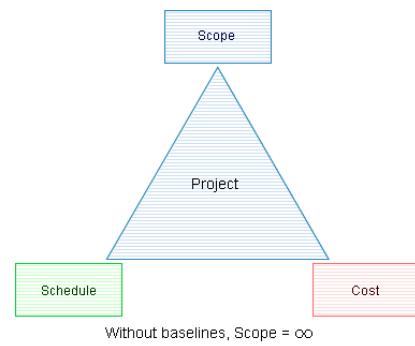
Although many types of baselines are possible, the three types that must be set for each project are:

- Scope, which includes the requirements
- Schedule
- Cost

Scope, cost, and schedule are known as the **triple constraints**. They are interdependent; a change in one of the three has an impact on the other two. Changes to these baselines must be carefully monitored and controlled.

The scope baseline includes the requirements baseline that is established after all project requirements have been defined and documented and then reviewed and approved by the appropriate stakeholders on the project, including the project sponsor, who then must sign off in writing.

- The scope/requirements baseline serves as the critical baseline for the project's technical requirements. Any requirement changes must be carefully monitored and controlled.
- The schedule baseline is established after project planning has been completed and the project schedule has been reviewed and approved. Again, all appropriate stakeholders, including the project sponsor, must sign off in writing.
- The cost baseline is established after all cost items on the project have been estimated and the price for the project has been reviewed and approved by the project sponsor.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - What Is Change Management?
 - Types of Change
 - Baselines
 - Required Baselines for Managing a Project
 - Baselines and Change Management
- Change Management and Project Baselines - Quiz
- The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management and Project Baselines

Baselines and Change Management

Changes do occur. Change management ensures that all changes are documented and everyone is aware of the impact they will have on all the baselines. Change management provides discipline regarding who can provide or modify the baselines. Without this control, changes could come from almost anywhere, such as senior management, sponsors, users, suppliers, and technical personnel, and the project team might be expected to implement them without regard for the impact on the project. Uncontrolled baselines can lead to late products, low quality, and cost overruns.

Changes must be reviewed and approved before they are added to the baseline. This process ensures that any potential problems are identified before the change is implemented and that the change request is complete, consistent, and feasible.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - What Is Change Management?
 - Types of Change
 - Baselines
 - Required Baselines for Managing a Project
 - Baselines and Change Management
 - Change Management and Project Baselines - Q
- The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
 - Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Change Management and Project Baselines

Question

What is a formal baseline?

- A. A baseline that has a stakeholder, an approval, and a sign-off
- B. The reference data on which execution of project activities is planned and controlled
- C. The requirements baseline
- D. All of the above

Submit Answer

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
- 10: The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Control and Delivery
- 12: Project Management Review
- 13: Project Closeout
- 14: Project Management Tool Suite
- 15: Self-Assessment and Final Exam

Preferences

Change Management

The Change Management Process

What Is Included in a Change Management Process

Many projects have encountered serious difficulties because a formal change management process was not established and enforced. Without a doubt, change management is one of your key responsibilities as the project manager. Even a one-line change could be extremely significant. That is why you always need to be careful when managing change.

Given the importance of change management, you, as the project manager, must ensure that the process for managing changes is clearly documented and understood by all project stakeholders, suppliers, and the IBM delivery team. This process must then be strictly enforced whenever the need for a change occurs.

Change management includes a:

- Change management process
- Change request
- Change control board (CCB)

You must identify what baselines you will control, at what level of detail, how, and by whom. Each change to any of these baselines should be documented and follow the defined change management process. Many projects use a CCB for accepting, rejecting, or deferring change requests. The powers and responsibilities of a CCB should be well defined and agreed upon by key stakeholders and included in the change management plan. On some large, complex projects, multiple CCBs might have different responsibilities.

Establishing and enforcing a formal change management process is key to project success.

The Change Management Process



A WWPMM work product description and associated template exist to assist you in creating the change request. An additional source of help is the WWPMM activity, Handle Change Request, in the Handling Exceptions activity. This resource can be found, along with descriptions for all WWPMM work products and templates, on the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - The Change Management Process Illustrated
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

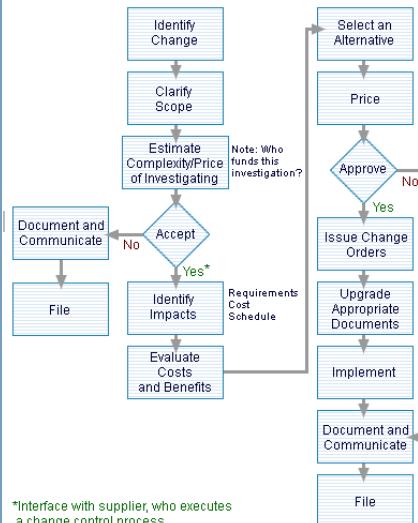
Preferences

The Change Management Process

The Change Management Process Illustrated

The following figure shows the process that should be used to manage changes.

The Change Management Process



Steps in the Change Management Process

The major steps in the change management process are:

- Identify the change.** The first step in the change management process is identification of a change by someone on the project. This change must be documented in a change control form and submitted for consideration to either the project manager or the CCB.
- Clarify the scope.** The change request is reviewed and, if necessary, discussed with its originator to clarify what is being proposed, and the rationale and scope of the proposal. A small change might be immediately accepted. An example of a small change is a proposed change to the name of a future deliverable in the requirements. However, keep in mind that even small changes require some amount of coordination and communication.
- Estimate the complexity and the cost of investigating.** For large changes, a quick assessment of their complexity and an estimate of the cost of investigating is done.
- Approval or rejection.** The change request is then reviewed by the CCB and is approved for a full impact assessment, rejected, or deferred. If the change request is rejected or deferred, it is logged, the reasons for the rejection or deferral are documented, and the change request is filed for possible future reconsideration. All interested stakeholders are informed of this decision.

Change Investigation

The following steps are performed when investigating any change:

- Identify impacts and evaluate costs and benefits.** If the change request is accepted for investigation, it is turned over to the appropriate project personnel to do a full impact assessment on baselined requirements, cost, and schedule, plus an evaluation of the benefits.
- Select an alternative.** It might be appropriate to develop several alternatives to the change request for consideration by the change control board.
- Estimate the cost.** The cost of the change request and its alternative, if any, is then estimated and submitted to the change control board.

The change request is reviewed by the change control board and approved for implementation, rejected, or deferred.

If the change request is rejected or deferred, the result is logged, the reasons for rejection or deferral are documented, and the change request is filed for possible future reconsideration. All interested stakeholders are informed of this decision.

Change Implementation

If the change request is accepted for implementation, a change order is generated instructing the appropriate project personnel, including suppliers, to implement the approved change request or its alternative. In addition, all appropriate baselined documents are updated to reflect the change, including the possible revision of the contract with the sponsor and the supplier. The result is logged and filed, and all interested stakeholders are informed.

Generally, your approval signature and that of the project sponsor are needed before the change request proceeds to impact assessment.

You must ensure that the impact assessment considers the impact on scope, schedule, costs, resources (hardware and software), personnel (including suppliers), documentation, logistics support, and the contract terms and conditions and performance.

Communicate the decision for each change request to those who need to know, including the originator of the change request.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - The Change Request
 - Typical Follow-Up Actions for Change Requests
 - Guidelines for Managing Change
 - Change Requests - Question
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Requests

The Change Request

Whoever wants changes, either the project team or sponsors, must submit the request using a change request. The change request describes the impact of the change on the project, including the cost of the investigation and the cost of the change. The purpose of the change request is to minimize frivolous changes.

The Change Request (Detail)

The Change Request (Detail) is used on both large and small projects and represents the minimum documentation.

The Change Request (List)

Use a Change Request (List) to list all changes, the owner or originator, and the status.

Refer to the [WWPMM Web site](#) for the latest templates.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - The Change Request
- Typical Follow-Up Actions for Change Requests
 - Guidelines for Managing Change
 - Change Requests - Question
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Requests

Typical Follow-Up Actions for Change Requests

If a change is:

- **Accepted and considered to be in-scope**, it should be incorporated into the system. Note that the baselines might need to be changed. You must prepare a schedule to incorporate the change along with the resources allocated to handle the change.
- **Accepted and considered to be out-of-scope**, prepare a proposal that includes the price of the change to the project sponsor. Do not implement the change until the contractual agreement is reached and the contract is revised.
- **Rejected**, regardless of whether it is considered to be an in-scope or out-of-scope change, ensure that the originator of the change understands why the request was rejected.
- **Deferred**, regardless of whether it is considered to be an in-scope or out-of-scope change, direct the project team to perform further analysis, consider alternatives, or hold the request until a specified time and then consider it.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - The Change Request
 - Typical Follow-Up Actions for Change Requests
 - Guidelines for Managing Change
 - Change Requests - Question
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Requests

Guidelines for Managing Change

Follow these guidelines for managing project changes:

- Introduce change control early in the project. Make it part of the project kick-off.
- Encourage the customer to fund a reasonable number of hours to be used to implement approved changes and to investigate change requests.
- Determine how changes are to be introduced and processed with a documented procedure and change management plan that are part of the project management system.
- Use a change request to document proposed changes.
- Ensure that changes are approved in writing by the authorized representatives.
- Update the baselines and all appropriate documentation after each change is approved.
- Communicate the decision on each change request to all those who need to know, including the originator of the change request.
- Early in the project, use the change control process to authorize a change that has no cost or schedule impact. The customer is much more agreeable to signing a change authorization if it does not cost them anything. By executing a no-cost change order, you and the customer will have set a precedent for approving changes.

How to Implement the Guidelines for Managing Change

IBM's policy is that all projects have change management procedures in place.

You, as the project manager, must implement these guidelines on every project in a strict and conscientious way. The change management process must be executed and strictly enforced in order to maintain control of your project.

The process of managing change should not be complex. Problems arise, however, when project managers, in an attempt to reduce bureaucracy, adopt an informal process to handle change requests. Misunderstandings often result from informality. As project manager, you might find that, because the project is committed to deliver a changed output, you have to absorb the added cost involved and scramble to meet the old schedule. Changes to your project might also affect projects managed directly by the customer or other organizations. For these reasons, change control is an important part of the project manager's job on every project.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - The Change Request
 - Typical Follow-Up Actions for Change Requests
 - Guidelines for Managing Change
- Change Requests - Question

[Seven Keys](#)[WWPMM](#)[Mentor](#)[Case Study](#)[Self-Check](#)[10: Project Control and Delivery](#)[11: Project Management Review](#)[12: Project Closeout](#)[13: Project Management Tool Suite](#)[14: Self-Assessment and Final Exam](#)[Preferences](#)

Change Requests

Question

What are the elements of a change request? (Select all that apply.)

- A. Effect on related projects
- B. Change request number
- C. Description of the change
- D. Time limitation on investigation
- E. Authorization to proceed

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
- Seven Keys
 - WWPM&M
 - Mentor
 - Case Study
 - Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management

Seven Keys to Success™

Think of all the bad things that can happen to a project if changes are not managed. And then think of how the Seven Keys will be negatively impacted. Scope will be unknown. Work will not be completed on time and on budget. Team members will not know what they are supposed to be doing. New risks will arise and existing risks will become more severe. And finally, stakeholders will be surprised when the deliverables do not match their expectations.

When analyzing each change request, determine how the change will impact each of the Seven Keys.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPM
 - Mentor
- Case Study
- Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).

WWPMM Practices

- Change Management
- Sponsor Agreement Management

WWPMM Activities

- Handling Exceptions
- Handle Change Request

WWPMM Work Products

- Agreement
- Change Management Plan
- Change Request





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management

Mentor



Click the photo to listen to Marjorie talk.

Why It Is Important to Manage Change

Have you ever been on a project where change was not managed well? Think about what the project manager should communicate to the stakeholders in order to successfully control the change management process.

Managing change is a critical factor in the success of a project. Without a sound, well-understood, and enforced change management process, the project will be out of control soon after it starts.

Change is inevitable. It will happen. You, as the project manager, must be prepared for it and manage it appropriately. Your focus should be on controlling the amount of change by ensuring that all changes that are of benefit to the project are appropriately analyzed (including assessing impacts), approved, communicated, and implemented in a timely, cost-effective manner. At the same time, ensure that any proposed changes that are of little or no value to the project are rejected.

The Project Management Body of Knowledge states that a project manager will spend about 90% of their time communicating. Change management is an area where it is vital to gather input from stakeholders and communicate the decision about the change, whether it is approved or not, back to the stakeholders.

In all but the simplest of projects, some change is essential. In projects with an external sponsor or customer, changes can be an important source of additional revenue and improved or enhanced deliverables. However, too much change can impact productivity and ultimately can lead to the project becoming out of control. You, as the project manager, must ensure that this does not happen and that change is a positive, well-managed process.

I encourage you to review the document *Prevention Measures to Avoid Troubled Projects*, which includes a number of items relating to project baselines and change management. This document is available at the [Quality Assurance Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Change Management

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and finding out what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

The Rest Easy Hotels chain has acquired two extra hotels. These hotels must be included with the other 20 hotels in the same computer system rollout. Pat DiPesto, Rest Easy Hotels executive director, has asked IBM to add these two new hotels to the project. In turn, the project executive asks you what impact this change could have on your course development activity. Your assignment is to create a list of impacts.

To begin, ask yourself the following questions:

- What is the impact if this training is used in 22 hotels rather than 20 hotels?
- What, if anything, is unique about these two additional hotels that needs to be added to the training?
- Will the training for the two hotels be different than the training for the other hotels?
- Will new employee training have to be incorporated into the course you are developing? Does this training currently exist? Or should both courses be taught?
- Do the employees in the two new hotels have experience levels that differ from the experience levels of the employees in the other 20 hotels?
- Does the inclusion of employees of the two new hotels create an additional native language requirement?

To complete the task for this unit:

1. Save the memo from Pat DiPesto, Change Request From Pat DiPesto.doc, to a directory of your choice.
2. Review the content of the memo against the previous list of questions. Based on your answers to the questions, make a list of all the additional work required to include the two additional hotels in the project.
3. Reread the list of requirements to help you think of impacts this might have on your project.



Change Request From Pat DiPesto.doc



Project Management Orientation

- 1: Getting Started
 - 2: Define the Project
 - 3: Team Management
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Case Study Solution
 - Self-Check
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Check Your Work

Check your work on the assignment by comparing it with the solution in the attached file. This document contains some of the possible impacts. Your work might contain additional ones.



Module 9 Change Control Solution.pdf



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check

- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12

 10: Project Control and Delivery

Preferences

Self-Check

Question 1 of 12

Select the three baselines that must be set for every project.

- A. Formal
- B. Schedule
- C. Cost
- D. Scope
- E. Project management plans

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 2 of 12

What happens when baselines are not set for projects?

- A. The baseline will not become formalized.
- B. Changes will be reviewed by different people.
- C. The project will be uncontrolled, which leads to late projects, low quality, and cost overruns.
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 3 of 12

How does change management cause updates to current baselines?

- A. Changes are reviewed, approved, and added to the baseline.
- B. Change management ensures that changes are documented.
- C. Change management provides boundaries for projects.
- D. All of the above

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 4 of 12

What are the types of changes in a project?

- A. Procedural or managerial
- B. Technical or contractual
- C. Analytical or formal
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 5 of 12

Change management is a(n) _____ process. Every time a change is approved, the project manager must update all project documents that are affected.

- A. Iterative
- B. Cumbersome
- C. Effective
- D. Costly

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 6 of 12

The project manager's role in change management includes which of the following? (Select all that apply.)

- A. Communicate the results of change management
- B. Implement change management procedures
- C. Design and establish the change management procedure
- D. Make the accept/reject decision
- E. Revise the baselines

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 7 of 12

Which of the following can authorize change on a project?

- A. Authorized representatives, designated in writing
- B. Any project stakeholder
- C. Any affected party
- D. Any member of management

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 8 of 12

The change management procedure includes which of the following? (Select all that apply.)

- A. A change request
- B. Cost tracking
- C. Issue tracking
- D. A change management process
- E. A Change Control Board

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- 10: Project Control and Delivery

Preferences

Self-Check

Question 9 of 12

What are typical follow-up actions to change requests?

- A. Prepare a schedule to incorporate the change if the change is accepted
- B. Require additional analysis if the change is rejected
- C. Prepare a proposal if the change is deferred
- D. All of the above

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
 - Fast Points
 - Change Management and Project Baselines
 - The Change Management Process
 - Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- + 10: Project Control and Delivery

Preferences

Self-Check

Question 10 of 12

Which of the following is a guideline for managing change?

- A. Communicate the decision on each change request to all those who need to know.
- B. Introduce the change management process early in the project.
- C. Update baselines and appropriate documentation after each change is approved.
- D. All of the above.

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
 - Fast Points
 - + Change Management and Project Baselines
 - + The Change Management Process
 - + Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- + 10: Project Control and Delivery

Preferences

Self-Check

Question 11 of 12

To manage change, a project manager must:

- A. Choose which projects should include change management procedures
- B. Implement an informal process to handle change requests on smaller projects
- C. Execute and strictly enforce the change management process
- D. All of the above

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- 9: Change Management
 - Fast Points
 - + Change Management and Project Baselines
 - + The Change Management Process
 - + Change Requests
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
- + 10: Project Control and Delivery

Preferences

Self-Check

Question 12 of 12

Why is it important to manage change?

- A. All changes proposed by the sponsor must be implemented.
- B. It is critical to the success of the project.
- C. The amount of change must be minimized.
- D. All of the above.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 10 Objectives

This module enables you to:

- Create a project control book that contains all the data you need to conduct a project review
- Analyze the status of project deliverables so that deviations can be recognized and controlled
- Prepare an assessment of project status that includes financial status and corrective actions taken
- Create an earned value report that shows to-date and projected financial data
- Prepare a Seven Keys Assessment Worksheet
- Describe the criteria and healthy and unhealthy signs for the Delivery Organization Benefits Are Being Realized key

This module takes approximately 40 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- Fast Points
- Controlling and Delivering Projects
- Using the Project Control Book
- Tracking and Executing Risk Management
 - Project Metrics
- Earned Value
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Control and Delivery

Fast Points

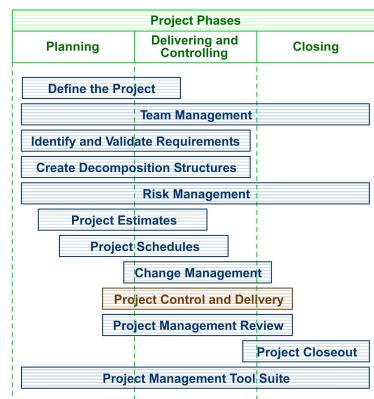
The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Project Control and Delivery", which is covered mainly during the Delivering and Controlling phase.

Project management is about planning, organizing, monitoring, and controlling all aspects of a project continuously. Project control is an aspect of project management. Its focus is to define and execute appropriate actions to ensure the success of the project. Without good project control, the scope, costs, and risks increase and cause deadlines to be missed.

With project control, remember the following:

- Start with clear objectives that are based on the project's goals.
- The project control process has four steps, and it's an iterative process.
- The Project Control Book should contain all the data required to control the project.
- You can analyze the status of the work using the outputs from project baselines.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- Fast Points
- Controlling and Delivering Projects
- Project Management and Project Control
- Four Steps of Project Control
- If You Do Not Control the Project
- Controlling and Delivering Projects - Question
- Using the Project Control Book
- Tracking and Executing Risk Management
- Project Metrics
- Earned Value
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Controlling and Delivering Projects

Project Management and Project Control

ISO 10006 defines project management as the planning, organizing, monitoring, and controlling of all aspects of the project in a continuous process to achieve the project's objectives. Project control, an aspect of project management, is defined as the process required to define and execute appropriate actions to ensure the success of the project. The focus of project control is monitoring, analyzing, and comparing planned results with actual results for the purpose of predicting what might happen if current conditions continue.

Project control begins with clear objectives and emphasizes the achievement of the project goals. It involves continuous monitoring of individual project events and elements such as budgets and schedules. Without good project control, the scope, costs, and risk increase and deadlines are missed.

The Key Elements Required to Control the Project

Although tracking and controlling a project's overall performance is addressed directly in the WWPMM Schedule Management practice, you must also focus on plans and procedures in the following key practices:

- Change Management
- Communications Management
- Event Management
- Financial Management
- Human Resource Management
- Quality Management
- Risk Management
- Scope Management
- Sponsor Agreement Management
- Supplier Management
- Technical Environment Management



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Project Management and Project Control
 - Four Steps of Project Control
 - If You Do Not Control the Project
 - Controlling and Delivering Projects - Question Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Controlling and Delivering Projects

Four Steps of Project Control

The project control process, like many other project management activities, is an iterative process repeated many times throughout the life cycle of a project. Click each of the following tabs to read about the four steps in project control.

Establish Standards

Observe Performance

Compare Planned with Actual Performance

Take Corrective Action

You are responsible for establishing the standards by which the project will be measured as well as the plans that define how the project will be executed. This involves establishing key project plans and the procedures within each of the WWPMM practices. Remember, these are iterative plans that you need to continually update.

As the project manager, you are responsible for executing these four steps. Regardless of the business processes that you follow, the project management processes are the same.

In the traditional (waterfall) approach to monitoring projects, the project managers track how much effort has been spent on each task and monitor progress against the end to end plan.

Under Agile, various techniques or 'Ceremonies' are used, typically including:

- Iteration or Sprint Planning before the iteration starts.
- A daily team review of progress during the iteration ('Stand-up').
- The Review – in which the team review the content built during the iteration with the stakeholders.
- The Retrospective – in which the team review how they are working together and identify ways to improve during the next iteration.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Project Management and Project Control
 - Four Steps of Project Control
 - If You Do Not Control the Project
 - Controlling and Delivering Projects - Question
 - Using the Project Control Book
- Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Controlling and Delivering Projects

Four Steps of Project Control

The project control process, like many other project management activities, is an iterative process repeated many times throughout the life cycle of a project. Click each of the following tabs to read about the four steps in project control.

Establish Standards
Observe Performance
Compare Planned with Actual Performan
Take Corrective Action

After you establish the plans, procedures, and standards, you observe how the project is progressing. In this step, performance information is collected from several sources, including meetings, reports, briefings, letters, audits, and observations.

As the project manager, you are responsible for executing these four steps. Regardless of the business processes that you follow, the project management processes are the same.

In the traditional (waterfall) approach to monitoring projects, the project managers track how much effort has been spent on each task and monitor progress against the end to end plan.

Under Agile, various techniques or 'Ceremonies' are used, typically including:

- Iteration or Sprint Planning before the iteration starts.
- A daily team review of progress during the iteration ('Stand-up').
- The Review – in which the team review the content built during the iteration with the stakeholders.
- The Retrospective – in which the team review how they are working together and identify ways to improve during the next iteration.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Project Management and Project Control
 - Four Steps of Project Control
 - If You Do Not Control the Project
 - Controlling and Delivering Projects - Question
 - Using the Project Control Book
- Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Controlling and Delivering Projects

Four Steps of Project Control

The project control process, like many other project management activities, is an iterative process repeated many times throughout the life cycle of a project. Click each of the following tabs to read about the four steps in project control.

Establish Standards

When you have collected appropriate performance data on your project, you compare its current status with your standards and expectations.

Observe Performance

This step answers two questions:

Compare Planned with Actual Performance

How is the project doing? And, if deviations from the original project plan have occurred, what caused the deviations?

As the project manager, you are responsible for executing these four steps. Regardless of the business processes that you follow, the project management processes are the same.

In the traditional (waterfall) approach to monitoring projects, the project managers track how much effort has been spent on each task and monitor progress against the end to end plan.

Under Agile, various techniques or 'Ceremonies' are used, typically including:

- Iteration or Sprint Planning before the iteration starts.
- A daily team review of progress during the iteration ('Stand-up').
- The Review – in which the team review the content built during the iteration with the stakeholders.
- The Retrospective – in which the team review how they are working together and identify ways to improve during the next iteration.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Project Management and Project Control
 - Four Steps of Project Control
 - If You Do Not Control the Project
 - Controlling and Delivering Projects - Question Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Controlling and Delivering Projects

Four Steps of Project Control

The project control process, like many other project management activities, is an iterative process repeated many times throughout the life cycle of a project. Click each of the following tabs to read about the four steps in project control.

- | |
|---|
| Establish Standards |
| Observe Performance |
| Compare Planned with Actual Performance |
| Take Corrective Action |

Finally, you decide what if any corrective action should be taken. This step involves activities such as revising plans, reallocating resources, and changing the way the project is organized or managed.

As the project manager, you are responsible for executing these four steps. Regardless of the business processes that you follow, the project management processes are the same.

In the traditional (waterfall) approach to monitoring projects, the project managers track how much effort has been spent on each task and monitor progress against the end to end plan.

Under Agile, various techniques or 'Ceremonies' are used, typically including:

- Iteration or Sprint Planning before the iteration starts.
- A daily team review of progress during the iteration ('Stand-up').
- The Review – in which the team review the content built during the iteration with the stakeholders.
- The Retrospective – in which the team review how they are working together and identify ways to improve during the next iteration.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Project Management and Project Control
 - Four Steps of Project Control
 - If You Do Not Control the Project
 - Controlling and Delivering Projects - Question
- Using the Project Control Book
- Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Controlling and Delivering Projects

If You Do Not Control the Project

If you do not control the project, the scope of the project will increase. This almost always adds cost to the budget and time to the schedule. In addition, you will not know whether your project is on schedule.

It is generally more difficult to meet a schedule than to move a schedule. As a result, if you do not know that you are on schedule and are not focused on staying on schedule, chances are you will not be on schedule.

Poor control often also results in:

- Under- or over-allocating team members' work assignments
- Supplier deliverables not being available when needed
- Dramatic decreases in quality
- Increased risk of failure





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Project Management and Project Control
 - Four Steps of Project Control
 - If You Do Not Control the Project
 - Controlling and Delivering Projects - Question
- Using the Project Control Book
- Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Controlling and Delivering Projects

Question

Which of the following are likely to happen if you do not control a project? (Select all that apply.)

- A. Increase in scope
- B. Increase in quality
- C. Falling behind schedule
- D. Increased costs of dealing with risks

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
- Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Control and Delivery

Using the Project Control Book

What Is a Project Control Book?

The project control book (PCB) is a collection of project documentation that establishes the framework for controlling the project. WWPMM defines the PCB as "the organized folder, or set of folders, where the agreements, plans, procedures, and records supporting the project management system are kept, referenced, and cross-referenced, as appropriate, to help in retrieving the information needed at any point in time for project management purposes." In Integrated Product Development (IPD), the PCB is called the integrated project file, or IPF.

The Purposes of a Project Control Book

The PCB helps you keep the project documentation up-to-date. It is a central library of project standards and procedures and the output associated with those standards and procedures. It provides a reference document of outputs used to measure project team performance and up to date information about the progress of the project. It also defines a standard way to produce, issue, and maintain project documents. The PCB becomes useful historical information, captures intellectual capital, and is required in some business plans. The PCB can either be hard-copy or use a tool such as IPWC.



The PCB is used as a basis for reviews and audits, as an information repository for team members, and as a tool for other project managers. It is important that you have all the latest information and status in your PCB.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Using the Project Control Book (Continued)
 - Using the Project Control Book - Question 1
 - Using the Project Control Book - Question 2
- Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Using the Project Control Book

Contents of the Project Control Book

To decide what should be in the project control book (PCB), start with the list of project management plans and procedures for your project. This is an example of such a list:

- Project Tracking and Evaluation
- Financial Management
- Progress Reporting
- Risk Management
- Supplier Management
- Quality Management
- Change Management
- Issue and Problem Management
- Contract Management
- Organization and People Management
- Deliverables Management

You do not have to include all these items in the PCB; in fact, because each project is different, you might not have all these plans and procedures, or you might have others.

When you have decided which plans and procedures to include in your PCB, list the outputs from each of those plans and procedures. For example, if you include progress tracking procedures, progress reporting procedures, and financial plans in your PCB, you would also include their outputs. The outputs from progress tracking might be updated schedules and time reports; from progress reporting, they might be contractual status reports and variance analyses. From financial plans, they might be expense reports and financial reconciliation reports. By including these in the PCB, you give everyone the latest view of the project.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Using the Project Control Book (Continued)
 - Using the Project Control Book - Question 1
 - Using the Project Control Book - Question 2
- Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Using the Project Control Book

Question 1

What is the purpose of project control?

- A. To plan, organize, monitor, and control all resources on the project
- B. To keep the project control book updated
- C. To predict what might happen if current conditions continue
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Using the Project Control Book (Continued)
 - Using the Project Control Book - Question 1
 - Using the Project Control Book - Question 2
- 11: Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 12: Project Management Review
- 13: Project Closeout
- 14: Project Management Tool Suite
- 15: Self-Assessment and Final Exam

Preferences

Using the Project Control Book

Question 2

What are the consequences if a project is not controlled?

- A. The scope of the project will decrease.
- B. The risks will increase.
- C. The risks will decrease.
- D. All of the above

Submit Answer



Project Management Orientation

<input checked="" type="checkbox"/> 1: Getting Started
<input checked="" type="checkbox"/> 2: Define the Project
<input checked="" type="checkbox"/> 3: Team Management
<input checked="" type="checkbox"/> 4: Identify and Validate Requirements
<input checked="" type="checkbox"/> 5: Create Decomposition Structures
<input checked="" type="checkbox"/> 6: Risk Management
<input checked="" type="checkbox"/> 7: Project Estimates
<input checked="" type="checkbox"/> 8: Project Schedules
<input checked="" type="checkbox"/> 9: Change Management
<input checked="" type="checkbox"/> 10: Project Control and Delivery
<input checked="" type="checkbox"/> Fast Points
<input checked="" type="checkbox"/> Controlling and Delivering Projects
<input checked="" type="checkbox"/> Using the Project Control Book
<input checked="" type="checkbox"/> Tracking and Executing Risk Management
<input checked="" type="checkbox"/> Issue Management and the Issue Log
<input type="checkbox"/> How to Control the Project
<input type="checkbox"/> Tracking and Controlling Risk
<input type="checkbox"/> Tracking and Executing Risk Management - Que
<input type="checkbox"/> Project Metrics
<input type="checkbox"/> Earned Value
<input type="checkbox"/> Seven Keys
<input type="checkbox"/> WWPMM
<input type="checkbox"/> Mentor
<input type="checkbox"/> Case Study
<input type="checkbox"/> Self-Check
<input type="checkbox"/> 11: Project Management Review
<input type="checkbox"/> 12: Project Closeout
<input type="checkbox"/> 13: Project Management Tool Suite
<input type="checkbox"/> 14: Self-Assessment and Final Exam

Preferences

Tracking and Executing Risk Management

Issue Management and the Issue Log

Problems and issues can affect the control of any project. A problem is a cause for concern that is within the project manager's domain of control. The project manager has the tools to fix a problem.

An **issue** is more generic than a problem. An issue is a cause for concern on a project. Many issues arise during the course of a project. Most of them are solved by the work team as part of their daily work or by the project manager. Some issues, however, are beyond the scope of responsibility of team members and the project manager. These issues affect the project manager's area of control, but the project manager lacks the necessary authority or tools to fix them. A project manager must either escalate or delegate those issues to the area of control that can provide a solution.

Each issue should be documented in an **issue log**, a WWPMM work product that describes the issue in detail and provides a complete history of its progression through analysis and resolution. The **issue log** lists all the issues that occurred and required recording during the life of a project, including the owner, due date, and status. Here is a sample issue log.

Issue Log Template

ID	Short Description	Issue Consequences	P	Date Raised	Raised by	Owner	Target Date	St	Status Date
1	Course Developers are on other projects and no one will be available for 6 weeks.	No course developers available to do the work for 6 weeks. The schedule would slip by 6 weeks.	M	4/01/01	Mindy Jones	Gary Brown	5/01/01	O	4/14/01
2	No facilities available for the training for the hotel in Madrid, Spain for the week after the system is installed	Will not be able to meet the contractual obligations at the Madrid Hotel.	H	4/05/01	Adriano Londono	David Jones	6/15/01	O	4/14/01
3	There is no one in the Rest Easy Motel in Malaysia that speaks English	There is no one that our team can communicate with in Malaysia. Probably will cause schedule delays.	H	4/08/01	Ying Cha	Cindy Smith	8/01/01	O	4/14/01

ID: Issue Identifier

P: Priority - High / Medium / Low

St: Status - Open / Under Investigation / Working on Fix / Close

Notice that each issue has an **owner** and a target date for completion. In most cases, the best way to resolve an issue is to be sure the issue has an owner and a **target date** for completion. At each status meeting, ask the owner to report the status of the issue.

The column labeled **priority (P)** helps you to prioritize the work. Additionally, there is a date opened column. This is for reference purposes, so that you can see how long the issue has been open.

Issue control has much in common with change control. Both processes involve documenting the change or issue, assigning responsible parties, and tracking the change or issue through to resolution.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Issue Management and the Issue Log
 - How to Control the Project
 - Tracking and Controlling Risk
 - Tracking and Executing Risk Management - Que
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - 11: Project Management Review
 - 12: Project Closeout
 - 13: Project Management Tool Suite
 - 14: Self-Assessment and Final Exam

Preferences

Tracking and Executing Risk Management

How to Control the Project

Follow these general guidelines for controlling your project and monitoring your project plans on a day-to-day basis:

- Focus your analysis on one cycle back and three cycles forward. For example, look one week back and three weeks forward.
- Identify all the work that has been completed. Support the people who are doing the work, and make them feel like a valuable part of the team.
- Evaluate the work that will be starting. Ensure that the owners know and agree that their work can start on time.
- Evaluate work that is almost due for completion. Check with the owners to ensure that the work is on target.
- Evaluate trends and other data that supports the owners' opinions.
- Evaluate work that is late starting or completing. What are the effects on the schedule and budget? What actions can you take to lessen the negative effects? Who should be responsible for each action?
- Always ask for updated estimates for the completion of tasks.
- Conduct regular project status meetings with your teams to discuss the schedule, status, dependencies, issues, and concerns. Also discuss the risks, and review the risk plan periodically.
- Document the minutes of each of these meetings. Post them in the PCB.
- Track issues using issue documents and the issue log. Keep all the issue documentation in the PCB.
- Always execute the change management process if changes are requested.
- Track the actual costs against the budgeted costs on a weekly basis if possible. Keep current.
- Conduct project reviews as required.
- Communicate the overall project status regularly to your team so that they know what is happening around them.



Above all else, keep in mind that one of your main objectives in controlling the project is not simply to identify potential issues, but to identify them within a time frame that allows you to alleviate the problem or to implement a containment plan.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Issue Management and the Issue Log
 - How to Control the Project
 - Tracking and Controlling Risk
 - Tracking and Executing Risk Management - Que
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Tracking and Executing Risk Management

Tracking and Controlling Risk

After you analyze the risks and assign actions to mitigate them, you must track the risks and keep the risk plan current to control them. This might result in adding, changing, or removing containment actions.

The project manager and the team must:

- Implement and track the risk management plan.
- Communicate the risk management plan status to the team members and other stakeholders. Be sure the plan is made clear to the sponsor and to the reviewers during project reviews.
- Review the risk triggers. Have any of the risks occurred?
- Reassess risk sources on a regular basis. Are there new risks resulting from changes in the sponsor's technology, project, organization, or resources? If so, update the plan with the new risks.
- Evaluate the defined risks to decide whether they are still possible, whether they will have the same severity, and whether the tolerance is the same. Does the plan need to be updated? Does additional action need to be taken?
- Review the risk contingency reserve and ask whether the plans are still appropriate? Is any action required based on observed trends? Are backup strategies appropriate?
- Review risk mitigation strategies to determine if they are still appropriate. Determine whether backup strategies should be used or if additional actions are required to implement the strategies. Does the plan need to be updated?
- As time passes, you might need to consider that some risks, previously considered non-issues, might become issues, while others, previously deemed significant, might become insignificant. Do you need to update the plan?
- If a risk event occurs, you might need to make appropriate changes to the work breakdown structure (WBS) and the schedule.
- Maintain current, accurate, and complete documentation, and disseminate it to the appropriate stakeholders. Documentation serves as a record of lessons learned and actions taken, and as a means of communication.

For more information, refer to the WWPMM Risk Management practice, and in particular to the Continuously Assess Risks activity, on the [WWPMM Web site](#).

Reacting to Risk

Reacting to a risk includes executing the necessary risk responses and closing the risk as appropriate:

- Reacting to a risk occurrence means taking the steps that must be performed when a risk actually occurs.
- Closing a risk means reaching a final resolution concerning a risk that either has occurred or is no longer considered a significant threat to the project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Issue Management and the Issue Log
 - How to Control the Project
 - Tracking and Controlling Risk
- Tracking and Executing Risk Management - Que

Project Metrics

- Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Tracking and Executing Risk Management

Question

How do you successfully control a project?

- A. By communicating with your sponsor on a quarterly basis
- B. By collecting hourly status reports
- C. By focusing your analysis of the project status one week back and three weeks forward
- D. By communicating with your peer project managers

[Submit Answer](#)



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
- Project Metrics
- Earned Value
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Control and Delivery

Project Metrics

A **metric** is a tool for measuring the progress of a project. The primary purpose of a metric is to enable you to monitor and communicate project status.

There are no standard metrics that apply to all projects. You must determine your sponsor's preferred metrics and choose the most appropriate metrics for your project.

Metrics must relate to something that can be tracked and measured. In most cases, you will be measuring actual results and comparing them with planned results; for example, measuring test cases actually completed and comparing them with test cases planned to be completed by this time.

Good metrics must have other characteristics too. They must be planned for, they must span the life of the project, and they must be understood by the sponsor, the team, and the project manager. Some examples of metrics are:

- Planned versus actual resource utilization
- Earned value, which compares the actual work done with the planned work and the actual cost with the planned cost
- Planned versus actual defects
- Planned versus actual task starts and finishes
- Planned versus actual schedule milestones
- Planned versus actual technical control points
- Planned versus actual revenue
- Planned versus actual cost
- Planned versus actual deliverables
- Planned versus actual quality trends
- Planned versus actual consumable resources used



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
- Earned Value Analysis
- Earned Value Terminology
- A Pictorial View of the Earned Value Components
- Earned Value - Question
- Earned Value as a Status Indicator
- Earned Value as a Status Indicator - Question
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Earned Value

Earned Value Analysis

Project managers are constantly looking for methods or tools that will provide specific, timely, and accurate project information to support their decisions. **Earned value** is one of the methods for gathering such information and monitoring a project's performance. It serves as an indicator of project status, and helps determine the project's progress. The term itself refers to a specific measurement, the budgeted cost of work performed.

Earned value analysis is the process of comparing, in terms of earned value, the project's actual performance against its planned performance. It can be calculated in hours or in dollars, and it can be calculated cumulatively or used to measure subprojects individually.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Earned Value Analysis
 - Earned Value Terminology
- A Pictorial View of the Earned Value Components
- Earned Value - Question
- Earned Value as a Status Indicator
- Earned Value as a Status Indicator - Question
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Earned Value

Earned Value Terminology

Earned value has its own vocabulary. One way to understand and remember its terms is to think of them in relation to the questions that often arise in project management and review. Earned value measurements are designed to answer such questions.

The **Earned Value (EV)** is the amount of work actually accomplished, stated in terms of the budget assigned to accomplish that specific scope of work. EV answers the questions, "How much has been accomplished against plan?" or "How much work has been performed and verified?" PMI's old term for EV was Budgeted Cost of Work Performed (BCWP).

The **Planned Value (PV)** refers to the costs that should have been incurred for the work that should have been completed to date. The PV answers the question, "What is the planned cost?" The PV must be established before the EV can be meaningful. (To use earned value correctly, the PV, and therefore the dollar amounts, must be allocated across the project's WBS, with dollar amounts associated with WBS elements.) PMI's old term for PV was Budgeted Cost of Work Scheduled (BCWS).

The **Actual Cost (AC)** is the total cost incurred for the work accomplished during a given period of time. AC answers the question, "How much did it really cost to perform the work?" The AC can be higher than the EV if there are more resources applied to a task than planned, or if a task takes longer than planned. PMI's old term for AC was Actual Cost of Work Performed (ACWP).

Senior management personnel are concerned with facts and how they are interpreted. It is important to make sure the work is actually completed. Project managers often make the mistake of saying, "I'm 90% complete." By focusing on PV, EV, and AC, you can avoid such pitfalls.

The following measures are used in earned value forecasting to predict the costs at the end of the project based upon the currently available information:

Budget at Completion (BAC) is the estimated total cost of the project at completion, or what the project should cost if your planning is accurate. It answers the question, "What is the baseline cost of the project?" Notice that the BAC is the sum of the PV. Be aware that events sometimes occur that disrupt your plan and either decrease or increase the BAC.

Estimate to Complete (ETC) is the projected cost to complete the project from a specified point in time. It answers the question, "How much will it take to finish?" Establishing an ETC needs to be determined periodically after establishing a BAC. The same data, analysis, and investigation that are used to establish the BAC are required for an accurate ETC. The only differences are that the starting point for the ETC has moved forward in time and more data is probably available.

Estimate at Completion (EAC) answers the question, "What will it cost when it is finished?" Calculating the EAC requires two data points: the AC and the ETC.



Project Management Orientation

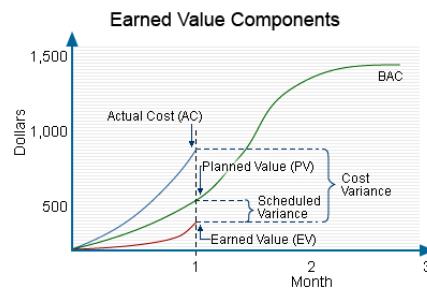
- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Earned Value Analysis
 - Earned Value Terminology
 - A Pictorial View of the Earned Value Components
- Earned Value - Question
- Earned Value as a Status Indicator
- Earned Value as a Status Indicator - Question
- Seven Keys
- WWPM
- Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Earned Value

A Pictorial View of the Earned Value Components

On the following graphic, you can see how the Planned Value curve in green compares to the Actual Cost curve in blue and the Earned Value curve in red. The goal is to have the Actual Cost curve and the Earned Value curves both match the Planned Value curve. In this example, you can see that at the end of the first month, the Earned Value (actual work completed) was below the Planned Value, and the Actual Cost was above the Planned Value. This graphic clearly shows that the project is behind schedule and over budget.





Project Management Orientation

- 1: Getting Started
 - 2: Define the Project
 - 3: Team Management
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Earned Value Analysis
 - Earned Value Terminology
 - A Pictorial View of the Earned Value Components
 - Earned Value - Question
 - Earned Value as a Status Indicator
 - Earned Value as a Status Indicator - Question
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Earned Value

Question

Which of the following statements best describes Planned Value (PV)?

- A. It answers the question, "How much will it take to finish?"
- B. It is the cost that should have been incurred on the project to date.
- C. It is a measure of the cost of work performed.
- D. All of the above.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
- Earned Value
 - Earned Value Analysis
 - Earned Value Terminology
 - A Pictorial View of the Earned Value Components
 - Earned Value - Question
- Earned Value as a Status Indicator
- Earned Value as a Status Indicator - Question
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Earned Value as a Status Indicator

Earned Value Analysis

Earned value is a key indicator of overall project status. It facilitates an objective assessment of variance between plans, budgets, and performance and enables a common understanding of the amount of work actually completed. Earned value is a moment-in-time metric.

Researchers have found that two of the components of earned value, schedule variance and cost variance, are valid indicators of performance after 20% of the project is underway. At that point, these two metrics can give you an accurate total picture of the project.

Both schedule variance (SV) and cost variance (CV) are used to pinpoint potential project problems, which can then be investigated further. Positive numbers are generally good and negative numbers are usually bad. A positive SV means the project is ahead of schedule; a positive CV means the project is under budget. Be aware, however, that these indicators cannot isolate activities on the critical path.

SV answers questions like, "What is the difference in value between what was accomplished and what was scheduled?" The formula for SV is:

$$SV = EV - PV$$

Notice that EV is used in the equation. In real life, SV is a reflection of what has been accomplished, the EV; versus what was planned, the PV. It does not, however, consider what has actually been spent.

If the SV is positive, then more work has been completed than what was scheduled, and the project is ahead of schedule.

If the SV is negative, then more work was scheduled than has been performed, and the project is behind schedule.

The Cost Variance (CV) answers the question: "What's the difference in value between what was accomplished and what was spent to do it?"

The formula for CV is:

$$CV = EV - AC$$

Again, notice that EV is used in this equation. CV is a reflection of what has been accomplished, the EV; versus what was actually spent, the AC. It does not consider what was planned to be done.

If the CV is positive, then the costs were less for the actual work than what was budgeted, and the project is under budget.

If the CV is negative, then the costs were more than budgeted for the work actually accomplished, and the project is over budget.

Percent Complete is a measurement that compares the value of the work accomplished with the total amount of work that needs to be done.

The formula for Percent Complete is:

$$\text{Percent Complete} = EV / BAC$$

Percent Spent is a measurement that compares the money that has been spent with the total amount of money available.

The formula for Percent Spent is:

$$\text{Percent Spent} = AC / BAC$$



Project Management Orientation

- 1: Getting Started
 - 2: Define the Project
 - 3: Team Management
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Earned Value Analysis
 - Earned Value Terminology
 - A Pictorial View of the Earned Value Components
 - Earned Value - Question
 - Earned Value as a Status Indicator
 - Earned Value as a Status Indicator - Question
 - Seven Keys
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Earned Value as a Status Indicator

Question

What is percent complete?

- A. The difference between the value of what has been accomplished and what was scheduled to be done
- B. The total costs incurred for the work
- C. The estimation to complete the project
- D. A measure of the amount of work completed versus the total amount of work to be done

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
- Seven Keys
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Seven Keys To Success Introduction





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
- Delivery Organization Benefits Are Being Realized
 - WWPM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Seven Keys To Success

Delivery Organization Benefits Are Being Realized Key

The delivery organization manages and completes the work on the project. It includes groups from IBM and any of the client's staff working on the project. A successful project will reflect well on the customer's staff, too, and lead to new opportunities. Profit is just one aspect of this key. Other aspects include IBM's reputation in the marketplace, the ability to perform future projects more efficiently, and staff development.

Here are some criteria for assessing the Delivery Organization Benefits Are Being Realized key.

- The project will help the delivery organization's reputation.
- The project will help financially; billing and collections are current.
- The project will help team member's careers.
- The project will contribute to the organization's knowledge and lessons learned.

Delivery organization benefits are being realized



Besides the earned value analysis, look for these signs:

Healthy Signs

- People feel they are learning.
- People are willing to invest in the project.
- Good press is being created.

Unhealthy Signs

- Good staff members are not available.
- Negative remarks about performance.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Control and Delivery

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).



WWPMM Practices

- Change Management
- Communications Management
- Event Management
- Financial Management
- Human Resource Management
- Quality Management
- Risk Management
- Schedule Management
- Scope Management
- Sponsor Agreement Management
- Supplier Management
- Technical Environment Management (Supplemental Practice)

WWPMM Activities

- Assess Estimating Basis
- Continuously Assess Risks
- Hold Internal Communication Meeting
- Reconcile Financial Data
- Track and Control Progress

WWPMM Work Products

- Communications Management Plan
- Issue Log
- Project Management Schedule
- Risk Log
- Risk Management Plan



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Control and Delivery

Mentor

**Why Is Tracking so Important?**

Methodical tracking of projects is the only way I can keep my projects on schedule. I have to know what's happening so that I can anticipate the problems before they impact my project. I have weekly status meetings where we discuss the status of the project compared to the plan and review all the issues and concerns. I document the issues and track them through resolution. That's the only way I can be sure each issue gets resolved in a satisfactory manner.

Another tool I use is earned value. I think it's difficult to know if I'm on schedule. If the project makes its first milestone on time, I know only that the milestone is on schedule. But what about all the other activities that are happening at the same time? By using financial measurements like earned value, I can see what areas are behind or ahead of schedule and where I'm overspending. I know how much money has been spent, and I can calculate how much money I should have spent. It's a great tool for getting an objective view.

As a project manager, the worst thing that can happen to me is that I get surprised. If there's a problem that I wasn't aware of and I didn't make the appropriate changes to mitigate it, it will impact the cost, scope, or schedule of the project. I need to understand what's happening on the project so that doesn't happen.

Remember, even good projects are not green on all keys all the time. But successful projects always address their project health issues promptly and effectively. On the other hand, poor projects generally have one or more keys go red early, and then stay red for the rest of the project.

Points to remember about the Seven Keys:

- Do not complicate the Seven Keys. They are meant to be a simple communication tool.
- Even a few hours implementing the Seven Keys makes a positive impact.
- With practice, everything about project or program health is related to the Seven Keys.

Points about using the Seven Keys:

- Complicated equations or templates are not needed.
- An understanding of terminology and using some simple forms is needed.
- The project manager needs to be comfortable asserting the true project status and the corrective actions needed to ensure success.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
- Case Study
- Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Control and Delivery

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and finding out what your mentor has to say. When you have finished the assignment, you can check your work with the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Your Assignment

As the project manager for the Rest Easy Hotels project, you need to track the performance of the project. Using earned value calculations, you can determine the health of your project as it relates to cost and schedule. The budget allocated for this project is \$153,520. The following provides a snapshot view of the current project status.

Work Unit	Planned Value (\$K)	Planned % Complete	Actual % Complete	Actual Cost (\$K)	Earned Value (\$K)
Design the course	54.72	100	100	59.6	
Develop the course	76.80	100	70	60	
Pilot the course	22	100	20	2	
Cost to date	153.52	100		121.6	

Project Status Summary

Your assignment is to answer the following five questions:

1. For each of the training tasks, find the to-date EV. Also calculate the project's total EV and AC. How should these results be interpreted?
2. Based on their CVs, which of the training tasks have cost more than was planned?
3. What percentage of the course development effort remains? What percentage of the money has been spent?
4. Is the training project behind schedule? (Hint: SV)
5. Based upon the answers to these questions, what action plans could you put in place?

Check Your Work

After you complete this assignment, click **Next** to compare your work with the assignment solution.



Project Management Orientation

- 1: Getting Started
 - 2: Define the Project
 - 3: Team Management
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Case Study Solution
 - Self-Check
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Case Study

Case Study Solution

Check your work by comparing it with the attached file, which contains one possible solution.



Module 10 Solution Document



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check

- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 1 of 13

Which of the following are among the many plans and procedures that should be in place in order to manage and track project performance? (Select all that apply.)

- A. Change management
- B. Schedule for end of project celebration
- C. Communications management
- D. Risk management

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- Question 1
- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- Question 7
- Question 8
- Question 9
- Question 10

Preferences

Self-Check

Question 2 of 13

What are the project manager's responsibilities in controlling projects?

- A. Execute the four steps of project control
- B. Establish the processes that define how the project will be executed
- C. Establish the standards by which the project will be measured
- D. All of the above

[Submit Answer](#)



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 3 of 13

Place the four steps of project control in the correct order.

A. Compare planned performance with actual performance

B. Establish standards

C. Observe performance

D. Take corrective action



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 4 of 13

What is the purpose of a project control book?

- A. It provides a means to create a central library of the project standards and procedures.
- B. It facilitates keeping the project documentation up-to-date.
- C. It provides a reference document of outputs used to measure project team performance.
- D. All of the above.

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - + Controlling and Delivering Projects
 - + Using the Project Control Book
 - + Tracking and Executing Risk Management
 - Project Metrics
 - + Earned Value
 - + Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 5 of 13

Which of the following statements best describes metrics?

- A. Metrics enable you to monitor and communicate project status.
- B. Metrics apply only to the project team.
- C. Different metrics should be created for each project phase.
- D. Metrics are reported occasionally.

[Submit Answer](#)



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - + Controlling and Delivering Projects
 - + Using the Project Control Book
 - + Tracking and Executing Risk Management
 - Project Metrics
 - + Earned Value
 - + Seven Keys
 - WWPMM
 - Mentor
- + Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 6 of 13

Which of the following statements best describes Earned Value?

- A. It is the amount of work actually accomplished.
- B. It answers the question, "What will it cost when it is done?"
- C. It can be calculated by comparing the work that was supposed to be done with the percentage of work actually completed.
- D. All of the above.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 7 of 13

What is the Actual Cost (AC)?

- A. The total cost incurred for the work accomplished during a given period of time.
- B. The total cost that should have been incurred.
- C. It answers the question, "What is the planned cost?"
- D. All of the above.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
- Earned Value
- Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 8 of 13

Consider the following example and answer the question. You are working on a project that requires the installation of personal computers (PCs). The details include:

- You need to install 20 PCs in one week that consists of five working days.
- Your schedule indicates that you need to install four PCs per day.
- Your labor costs are \$800 per day.
- The hardware is not part of your cost.

If all goes according to schedule, what is your actual cost (AC) at the end of day one on the project?

- A. \$0
- B. \$200
- C. \$800
- D. \$4000

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 9 of 13

What is percent spent?

- A. The estimated total cost of the project at completion
- B. Actual costs minus planned costs
- C. The total costs incurred for the work
- D. A measure of the amount of money spent versus the total amount of money available

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - Controlling and Delivering Projects
 - Using the Project Control Book
 - Tracking and Executing Risk Management
 - Project Metrics
- Earned Value
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 10 of 13

Given the following information about day three on a project, what is the cost variance for the project?

Earned Value (EV) = \$2400

Planned Value (PV) = \$2400

Actual Cost (AC) = \$2800

Budget at Completion (BC) = \$4000

- A. \$0
- B. \$400
- C. -\$400
- D. \$1200

Submit Answer



Project Management Orientation

- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - + Controlling and Delivering Projects
 - + Using the Project Control Book
 - + Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - + Seven Keys
 - WWPM
 - Mentor
 - + Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13

Preferences

Self-Check

Question 11 of 13

Which of the following colors on the Seven Keys status report means corrective action is required immediately?

- A. Red
- B. Yellow
- C. Green
- D. Blue

Submit Answer



Project Management Orientation

- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - + Controlling and Delivering Projects
 - + Using the Project Control Book
 - + Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - + Seven Keys
 - WWPMM
 - Mentor
 - + Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13

Preferences

Self-Check

Question 12 of 13

The project manager can use the Seven Keys to Success™ to:

- A. Assess the health of the project and determine if corrective action is needed
- B. Focus project steering committee members on the corrective actions
- C. Establish a consistent agenda for project team meetings
- D. All of the above

Submit Answer



Project Management Orientation

- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- 10: Project Control and Delivery
 - Fast Points
 - + Controlling and Delivering Projects
 - + Using the Project Control Book
 - + Tracking and Executing Risk Management
 - Project Metrics
 - Earned Value
 - + Seven Keys
 - WWPM
 - Mentor
 - + Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10
 - Question 11
 - Question 12
 - Question 13

Preferences

Self-Check

Question 13 of 13

Which of the following are true about the Seven Keys to Success™? (Select all that apply.)

- A. Complicated formulas are needed.
- B. The project manager must be comfortable assessing the true status of the project.
- C. Good projects are green on all the keys all the time.
- D. The project manager, team, and key stakeholders must agree on the definition of red, yellow, and green.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 11 Objectives

This module enables you to:

- Given a project control book, baselines, and the resulting data regarding the status of your project, arrange and prepare for the appropriate project management reviews required for your business unit so that the project objectives can be met with the appropriate level of support required for the success of the project

This module takes approximately 35 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review

 Fast Points

- Project Management Reviews
- Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Review

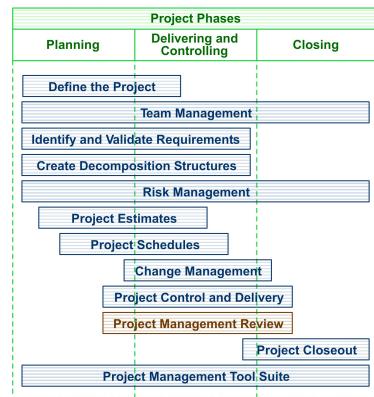
Fast Points

The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Project Management Review", which is covered mainly during the Delivering and Controlling phase.

Project management reviews help ensure that a project is progressing on schedule, and within budget, and is meeting the requirements. A project management review can indicate if and where a project is in trouble. There are different kinds of reviews, but here are the kinds of topics that are typically covered:

- Project overview
- Highlights of project accomplishments
- Plans for tracking your project
- List of project-related risks and problems
- Objective assessment of the health of the project





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- Fast Points

 Project Management Reviews

- Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Reviews

Why Conduct Project Management Reviews?

Project management reviews provide opportunities for you to report project schedule and budget status, highlight project accomplishments, identify problems, escalate issues, and elicit management support. The main purpose of a project management review is to provide general guidance to you as the project manager with an objective assessment of a project's health. Reviews should be conducted by an independent group of skilled reviewers outside of the project who can view the project objectively.

Different Types of Project Management Reviews

Different types of project management reviews are held based upon the timing of the review. Project review types are:

- **Contract Readiness Review.** Some business units hold this type of review within two to eight weeks after the contract is signed. Other organizations complete a contract readiness review later in the cycle or do not require one at all.
- **Periodic Review.** Some business units hold this type of review every three to six months.
- **Completion Review.** This is a project management review that is completed at the end of the project.
- **Special Review.** This type of review is held when there appears to be a serious problem or when the project manager has reason to request one, such as when there has been a project management turnover.
- **Compliance Review.** This review ensures that policies and procedures are being followed by the project and identifies improvements that can be made to procedures. Compliance reviews might be conducted by an IBM organization, external to the project, by the sponsor, or by an outside body.
- **Deliverable Review.** This is a review of a deliverable or key component. The review is held before the deliverable or key component is released to the sponsor to ensure that no open items remain and that delivery is appropriate.

In addition, WWPMM defines the following types of health reviews:

- **Business Reviews.** This type of review focuses on financial and business exposures.
- **Project Management Reviews.** This is a review that focuses on the planning and control aspects of the project.
- **Technical Reviews.** Technical reviews focus on the technical aspects of the project, including work products, deliverables, and subcontractor reviews. This review covers areas such as traceability of requirements, architecture, and technology competitiveness.

As the project manager, you must not rely totally on prescribed reviews but should exercise judgment in determining which reviews are necessary and when they should be held to make the project a success.

 There is a WWPMM practice (Quality Management), activity (Continuously Assess Project Health in the Monitoring activity), and work product (Quality Review Documentation) that can assist you with project reviews.

The documents, along with descriptions for all WWPMM work products and templates, are located at the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Decision Checkpoint Reviews in IPD Projects
- Reviews in the CRM Project Management Process
- Project Management Reviews - Question 1
- Project Management Reviews - Question 2

Prepare for Project Management Reviews

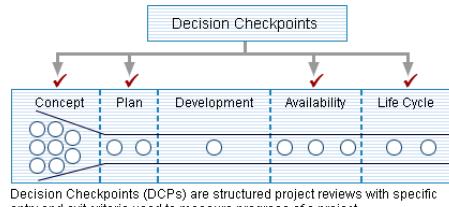
- Problems to Avoid
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Reviews

Decision Checkpoint Reviews in IPD Projects

Integrated Product Development (IPD) is part of the Decision Checkpoints (DCPs) process. Although the IPD community does not have a quality assurance (QA) organization, they are still required to execute QA tasks. DCPs are structured project reviews with specific entry and exit criteria that measure the progress of an IPD project. DCPs are held, in some cases, as a baseline review. DCPs are conducted at the following points in a project's life cycle.



Decision Checkpoints (DCPs) are structured project reviews with specific entry and exit criteria used to measure progress of a project.

IDP Process

Decision Checkpoints are structured project reviews with specific entry and exit criteria used to measure progress of a project. With the project moving from the Concept phase, to the Plan phase, to the Development phase, to the Availability phase, and to the Life Cycle phase, Decision Checkpoints are held in each phase.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Decision Checkpoint Reviews in IPD Projects

Reviews in the CRM Project Management Process

- Project Management Reviews - Question 1
- Project Management Reviews - Question 2
- Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

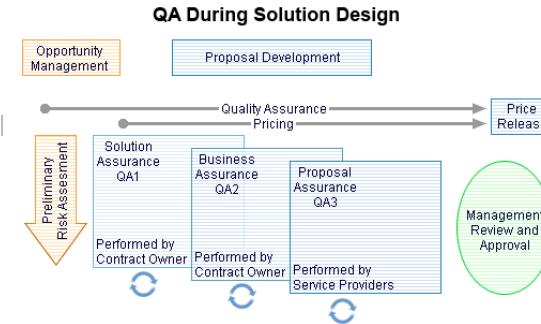
Project Management Reviews

Reviews in the CRM Project Management Process

Global Services has a QA organization that conducts project reviews at the following points in a project's life cycle.

QA Process During Solution Design

The QA process starts during opportunity management and continues through proposal development ending with price release.



The steps are:

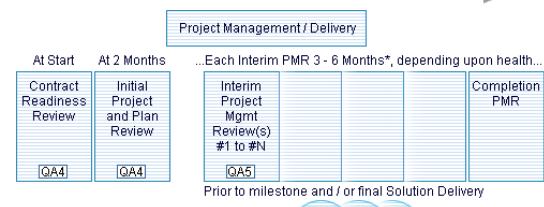
1. Preliminary Risk Assessment
2. Performed by contract owner
 - Solution Assurance QA1
 - Business Assurance QA2
3. Performed by service providers
 - Proposal Assurance QA3
4. Management Review and Approval

QA Process During Solution Delivery

Project management and delivery conduct reviews. The steps are:

1. At Start: Contract Readiness Review QA4
2. At 2 Months: Initial Project and Plan Review QA4
3. Each interim PRM 3-6 Months depending on health
4. Completion PMR
5. Solution and Deliverable Readiness Reviews #1 through #N QA6

QA During Solution Delivery



*Healthy MO projects in steady state = 12 months



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Decision Checkpoint Reviews in IPD Projects
 - Reviews in the CRM Project Management Process
 - Project Management Reviews - Question 1
 - Project Management Reviews - Question 2
- Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Reviews

Question 1

Match each type of project review with its description.

- A. A review that focuses on the financial and business exposures
- B. A review that focuses on the planning and control aspects of the project
- C. A review that focuses on the technical aspects of the project
- D. A review that is intended to ensure that policies and procedures are being followed
- E. A review of a deliverable or a key component before releasing it to the sponsor



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Decision Checkpoint Reviews in IPD Projects
 - Reviews in the CRM Project Management Process
 - Project Management Reviews - Question 1
 - Project Management Reviews - Question 2
- Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Reviews

Question 2

Decision checkpoint reviews occur at four points during the life cycle of IPD projects.

- A. True
 B. False

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
- Prepare for Project Management Reviews

Problems to Avoid

Seven Keys

WWPMM

Mentor

Case Study

Self-Check

12: Project Closeout

13: Project Management Tool Suite

14: Self-Assessment and Final Exam

Preferences

Prepare for Project Management Reviews

Topics You Should Cover in a Project Management Review

Before the review, you should make arrangements with the review team leader to set the schedule for the review. Typical activities to plan for a smooth review include: the project manager's presentation, interviews with key project members (including subcontractors), interviews with key customer project team members and the project sponsor, project documentation analysis, and review debrief with the project manager.

In the typical project management review, you have an opportunity to present your view of the project at the beginning of the review. You should cover the following topics in that overview:

- **Project overview.** This is where you can orient the review team to your project scope, objectives, major milestones, customer organization, project staffing (including subcontractors), and planning baselines.
- **Highlight project accomplishments.** This is a great opportunity for you to describe all the good things that are happening on your project.
- **Give an overview of the project management processes you are following.** This is where you can describe the plans you have created and are using to track your project and what tools and methods you are using on the project.
- **Identify project-related risks and problems.** This is your list of the risks and problems with the actions that you are taking to mitigate the risks and solve those problems. Also, report the results of any earlier project management reviews or solution or deliverable reviews and the status of their associated action plans.
- **Provide an objective assessment of the health of the project.** Here you get to tell the reviewers how you think the project is going. Be objective. Keep in mind they are going to talk to several other people and go through your documentation; they are not just going to take your word for it.

Following your presentation, the reviewers will want to see your plans and status reports and talk to the other members of your team. They want to gather as much information as possible so they can make their own assessment of the health of your project. It is important for you to have all your project plans, status reports, and other data readily available in your project control book.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
- Key Questions to Answer
- Prepare for Project Management Reviews - Questions
- Problems to Avoid
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Prepare for Project Management Reviews

Key Questions to Answer

In the project review process, the key question is, "Where are you?" The reviewers want to understand where you are today. There is also a need to look forward, to predict the future. You can do both of these by using the earned value (EV) indicators to determine where you are relative to the budget and the schedule today and where you will be at the end of the project. EV status and predicting indicators are detailed in Module 9, Change Management.

The following key questions help to determine the health of a project. The EV status indicator or EV predicting factor associated with each question is included.

- What should have been spent? This indicates the planned value (PV).
- What has been completed? This indicates the earned value (EV).
- What is the project cost as of today? This indicates the actual cost (AC).
- What will be the cost to finish the project? This indicates the estimate to complete (ETC).
- What will be the project costs when the project is completed? This indicates the estimate at completion (EAC).

Some of the other key areas that the reviewer will want to investigate are risk management and change control. Reviewers want to examine your risk management plan to be sure you are keeping it updated and implementing the mitigation plans. They will also want to examine your change control process and evidence that you are using it and following your process.

The Review Findings

After the reviewers have reviewed the documentation and talked to the team members, they will want to analyze the information and prepare a report of the findings. The reviewers might prepare the report on the same day as the review or they might leave and send you the report later. You are expected to establish a plan to address any concerns or problems noted in the report.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Key Questions to Answer
 - Prepare for Project Management Reviews - Questions
- Problems to Avoid
- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Prepare for Project Management Reviews

Question

Which questions should be asked on a regular basis to track project status? (Select all that apply.)

- A. How much will it take to finish the project?
- B. How much has the project cost as of today?
- C. Where should the project be today?
- D. What will the project cost when complete?
- E. How much has been done?

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
- Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Review

Problems to Avoid

Avoiding Problems

Troubled projects have a significant impact on IBM's profitability and extensive negative impact on the IBM reputation for high customer satisfaction and quality service. The most frequent and common denominator in troubled projects is the IBM proposal and the performance team's failure to understand and follow IBM internal processes and guidelines. Projects also break down because of failure to follow project management discipline procedures, not because of the inability to resolve the technical problems.

By following the steps in the IBM Global Services Worldwide Quality Assurance Management Discipline (WWQA/MD) procedures, you can identify and avoid many potential problems. Available documentation supporting the implementation of WWQA/MD can be found on the [Quality Assurance Web site](#).

The *Prevention Measures to Avoid Troubled Projects* white paper contains a description of root causes of troubled projects that are frequently encountered, along with suggested prevention measures. The white paper links the root causes of troubled projects to various categories or project phases, such as organizing the project or risk management. The white paper is based on the findings of project management reviews and on the analysis of troubled projects. The [Prevention Measures to Avoid Troubled Projects white paper](#) can be accessed from the Quality Assurance Web site.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Review

Seven Keys to Success™

Suppose you are asked to review two projects.

1. The first project is 11 months into a 12 month implementation, and the Seven Keys Heads up Display (HUD) is green for each key.
2. The second project has a HUD with an assortment of red, yellow and green, is only 3 months into its 12 month schedule, and is asking the Steering Committee for more funding.

Which project are you most interested in reviewing?

Answer

The first project. With its HUD all green, it is likely the HUD is not telling the whole truth and there are surprises to be revealed.

In the second project, the problems are visible and are being dealt with.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
- WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Review

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, see the [WWPMM Web site](#).

WWPMM Practices

- Quality Management

WWPMM Activities

- Participate in Audit or Review
- Continuously Assess Project Health

WWPMM Work Products

- Quality Review Documentation





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
- Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Review

Mentor



Click the photo to listen to Marjorie talk.

The Value of Independent Project Management Reviews

As a project manager, I look at project management reviews as an opportunity to show my peers what I am doing, to learn something, and to get some help where I need it. I don't have the opportunity to compare notes with my peers very often, and project management reviews give me that opportunity. When I review the project management review findings, I always learn something new.

Project management reviews are also a great opportunity to get some support to help me solve problems I might have that cannot be solved any other way. Don't wait for external QA reviews to report urgent problems! On one of my projects, I could not get the skilled resources I needed; they were not available. After QA identified the lack of resources as a problem, the priorities were changed and I was able to get the resources I needed.

Preparing for the project management review takes time. But the preparation is usually updating documents that should have already been updated, getting those final approvals, or filing the latest status reports. All of that work needs to be done anyway, and the project review just forces it to be done sooner.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Management Review

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say. When you have finished the assignment, you will have the opportunity to check your work against the assignment solution.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

The Rest Easy Hotel Improvement training project is moving ahead. As you learned in the previous module, you are behind schedule and over budget. In this case study, you do not have enough information to really determine why you are behind schedule and over budget. Unfortunately, this is a common occurrence on projects.

Your Assignment

Your assignment is to read the *Prevention Measures to Avoid Troubled Projects* white paper and document three things you find that either explain why you are having problems in your current project or that you should do differently to improve the project on which you are presently working.

You can access this white paper from the [Quality Assurance Web site](#).

There is no "Check Your Work" section for this module.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- Question 1
- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 1 of 6

What do independent project management reviews do?

- A. They provide project managers with an objective assessment of a project's health.
- B. They focus on the technical aspects of the project.
- C. They are conducted by the project team.
- D. All of the above.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- Question 1
- Question 2
- Question 3
- Question 4
- Question 5
- Question 6
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 2 of 6

Match each type of project review with its time frame.

A. Held within two to eight weeks of getting a contract signed

Completion review

B. Held when there appears to be a serious problem

Completion review

C. Held at the end of the project

Completion review

D. Held every three to six months

Completion review



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 3 of 6

In the CRM project management process, when does the QA organization in IBM Global Services conduct project reviews?

- A. At each major point in the process
- B. At the end of the project
- C. When a team member determines the need for one
- D. Only at the start of solution design and solution delivery



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 4 of 6

How is a project manager expected to respond to the review findings?

- A. Put plans in place to address the concerns or problems
- B. Set a follow-up meeting with the reviewers to discuss actions in response to the review findings
- C. Comment on the review findings
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - Project Management Reviews
 - Prepare for Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 5 of 6

How can the Prevention Measures to Avoid Troubled Projects white paper be used?

- A. To help solve technical problems
- B. To identify and avoid potential problems
- C. To add to the IBM project management discipline
- D. To provide additional work products for the project

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- + 10: Project Control and Delivery
- 11: Project Management Review
 - Fast Points
 - + Project Management Reviews
 - Problems to Avoid
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- + Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
- + 12: Project Closeout
- + 13: Project Management Tool Suite
- + 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 6 of 6

What do independent project reviews provide the opportunity for?

- A. Learning something new
- B. Getting support to help solve problems
- C. Communicating with peers
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 12 Objectives

This module enables you to:

- Close a project
- Describe the purpose of closing the project
- Identify closing activities
- Create a list of lessons learned
- Develop a project evaluation report
- Submit intellectual capital

This module takes approximately 35 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- Fast Points
- Closing Projects
- Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Closeout

Fast Points

The diagram shows the modules and how they relate to the project phases.

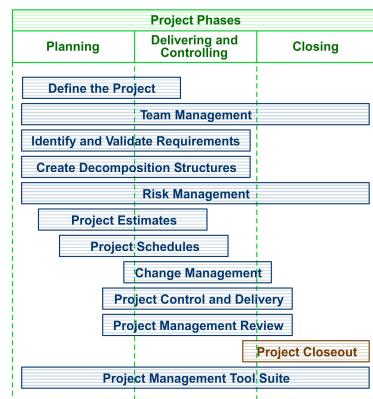
You are now starting the module "Project Closeout", which is covered in the Closing phase.

At some point, every project comes to an end and either succeeds or fails. The process of closing the project ensures that a number of items are addressed and completed as part of the project life cycle.

Completing these items is not simply housekeeping, but a process that is critical to providing good documentation for use in future projects.

When closing projects, remember these steps:

- Review all the project documentation and agreements for the project to ensure that they are complete and that all the commitments have been met.
- Review the project to identify lessons learned and intellectual capital.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question
- Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check

Project Management Tool Suite

Preferences

Closing the Project

When Is a Project Closed?

Just as views differ about the project life cycle in IBM, different opinions exist about when a project comes to closure. For example, in the Product Group, a project is considered finished when the product is withdrawn from the market. In the Services business area, a project is considered finished when all contractual commitments have been met, the sponsor has accepted the delivered system, and the agreements with the sponsor and the suppliers have been closed.

Sometimes, closing the project can be quick and straightforward. Other times, it can be a long, extended process. In many Services projects, the sponsor is reluctant to let IBM close the project because the sponsor has concerns about running the system. Sponsors typically want to retain the IBM delivery team and the suppliers for as long as possible.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Clo
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question
- Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check

Project Management Tool Suite

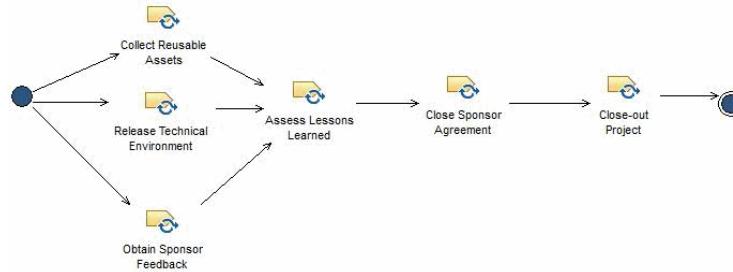
Preferences

Closing the Project

Actions Required for a Successful Project Closing

Closing the project is the process of reviewing all the documentation and agreements for the project to ensure that they are complete and that all the commitments have been met. Closing the project also includes reviewing the project to identify lessons learned and the intellectual capital that should be documented for others' use.

The following figure is from the WWPMM activity, Manage End of Project, in the Closing activity.



The purpose of closing a project is to ensure that each of the following items has been completed:

- All the project commitments have been met and the documentation has been updated.
- The intellectual capital has been identified and documented.
- The technical environment has been released.
- The customer satisfaction survey has been completed by the customer or the sponsor.
- The lessons learned have been collected and documented.
- The sponsor agreement has been closed.



As a project manager, you must start thinking about closing the project when it starts. If you do not anticipate closing the project, you will have difficulty actually doing so. Therefore, on day one of your project, begin establishing an awareness of, a process for, and a commitment to a successful project closing among all the parties involved in the project.

For assistance with the project closing process, see the WWPMM activity, Manage End of Project, in the Closing activity. This activity can be found, along with descriptions for all WWPMM work products and templates, on the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question

 Lessons Learned Intellectual Capital Management

- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check

 Project Management Tool Suite

Preferences

Closing the Project

Project Closing Terms

The following terms relate to closing a project.

Click each of the following tabs to read about terms that are related to closing a project.

Administrative Closure

Closure Documentation

Project Evaluation Report

Administrative closure is generating, gathering, and disseminating information to formalize project completion. In the administrative area, all the project documentation must be completed and sent to the appropriate recipients. In addition, all the assets must be either returned to their owners or nominated as candidates for the Intellectual Capital Management database.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question
- Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check

Project Management Tool Suite

Preferences

Closing the Project

Project Closing Terms

The following terms relate to closing a project.

Click each of the following tabs to read about terms that are related to closing a project.

Administrative Closure

Closure Documentation

Project Evaluation Report

Closure documentation is communication between the sponsor and the delivery organization or between the delivery organization and a supplier that acknowledges the agreement is complete. Closure documentation provides evidence that all terms of the agreement have been satisfied and all work has been completed.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check

Project Management Tool Suite

Preferences

Closing the Project

Project Closing Terms

The following terms relate to closing a project.

Click each of the following tabs to read about terms that are related to closing a project.

Administrative Closure

Closure Documentation

Project Evaluation Report

The project evaluation report is a document created at the end of the project that highlights key points to be gleaned from the project, including intellectual capital, and reusable materials.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question

Project Management Tool Suite

Preferences

Closing the Project

Project Closing Activities

Project closing activities must be planned and budgeted much as they are in other phases of the project life cycle.

The major closing activities are:

- Reviewing the agreement and the project documentation to confirm that all project deliverables have been met
- Formally closing the project with the sponsor and the suppliers
- Preparing a project evaluation report
- Documenting lessons learned
- Releasing staff and technical environments
- Releasing suppliers



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question

Preferences

Closing the Project

Questions to Ask at the End of a Project

Questions that you should ask at the end of the project include the following. Of course, many of these items should be an ongoing focus throughout the life of the project.

- Have all required products and services been provided to the sponsor?
- Have all actions related to contract changes or revisions been concluded?
- Have all contractual issues been settled?
- Have all ongoing maintenance requirements been addressed and agreed to?
- Is documentation in place that adequately shows the receipt and formal acceptance of all contract deliverables?
- Has property or information provided by the sponsor been returned?
- Has the final invoice been submitted and paid?
- Has the project file been updated and is it completely up to date?
- Have you gathered lessons learned from the sponsor, suppliers, and your teams?
- Has the project team determined whether any project material should be nominated for inclusion in PMKN assets?
- Has a sponsor satisfaction survey been conducted?
- Have the technical environment elements been released?



Examples of technical environment elements include a mainframe set up for work purposes, related software, electrical provisioning, and rented buildings.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check

Project Management Tool Suite

Preferences

Closing the Project

Documents Required for a Successful Project Closing

To close a project, you should collect updated copies of the sponsor and supplier agreements, any amendments to the agreements, the latest project status reports, and the asset inventory for the project.

After this information is collected, you and the members of your team who have not yet been released from the project should prepare the project evaluation report and oversee the release of the project assets from the asset inventory back to the asset owners.

The project evaluation report contains the following sections:

- Project Summary
- Intellectual Capital

The project evaluation report generally applies to the overall delivery project, but it can be created at any level in the project organizational breakdown structure (OBS).

This report is typically created at the end of the project by the project manager. However, it can be created at any time during the execution phase. For projects of long duration, it is recommended that the project evaluation report be created at the end of each phase of the project or conclusion of a major milestone.

You create the project evaluation report by soliciting feedback from various project stakeholder groups, such as project team members, the sponsoring organization, suppliers, or IBM management. Review findings and project documentation can also be useful sources of input.

For assistance in creating this report, including a description and a template, see the WWPMM Project Evaluation Report work product.

 This can be found, along with descriptions for all WWPMM work products and templates, on the [WWPMM Web site](#).



Project Management Orientation

- 1: Getting Started
 - 2: Define the Project
 - 3: Team Management
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - 11: Project Management Review
 - 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Closeout
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project Closeout

Closing the Project

Project Manager's Responsibilities

You, as the project manager, must focus on the following closeout responsibilities:

- Assess the terms of agreement and the completion of all commitments.
 - Review the terms of the project plan and the sponsor agreement and verify the completeness of all deliverables and the currency of all documentation.
 - Verify that all supplier agreements have been fulfilled and closed.
 - Verify the satisfaction of post-delivery commitments, such as readiness to fulfill warranty and support obligations.
 - Release the technical environment.
 - Identify and release technical environment elements, such as office space, computer installations, and related software. Equipment or space needed for warranty support can be left in place after the project closes.
 - Obtain sponsor feedback.
 - Obtain information about the sponsor's areas of satisfaction and dissatisfaction, then document this information and use it as input to the lessons learned.
 - Assess the lessons learned.
 - Determine the key lessons learned on the project, document them, and suggest improvements for future projects in the project evaluation report.
 - Close out the sponsor agreement.
 - Perform the administrative closure of the sponsor agreement. This includes generating, gathering, and disseminating information to formalize project completion and closure.
 - Submit the intellectual capital.
 - Submit all intellectual capital generated on the project, including lessons learned, the WBS, project definition reports, and any other related documentation to the PMKN. Current and future projects will benefit from your experience.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - When Is a Project Closed?
 - Actions Required for a Successful Project Clo
 - Project Closing Terms
 - Project Closing Activities
 - Questions to Ask at the End of a Project
 - Documents Required for a Successful Project
 - Project Manager's Responsibilities
 - Final Project Meetings and Reviews
 - Closing the Project - Question
- Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check

Project Management Tool Suite

Preferences

Closing the Project

Final Project Meetings and Reviews

Final project meetings and reviews include:

- **Project review.** Conduct a project review with the sponsor shortly before the project ends to ensure that:
 - All contractual obligations have been met by the supplier to IBM and by IBM to the project sponsor
 - The project sponsor formally accepts the project as being complete
 - All assets on loan to the supplier or the sponsor have been returned
 - Everything is ready and in place to close the project
- **Lessons learned meetings.** To identify key lessons on the project, conduct lessons learned meetings with the internal team, the sponsor, and your suppliers. How to conduct lessons learned meetings is discussed in the "Lessons Learned" topic of this module.
- **Final internal review.** After the project is closed, conduct a final internal review of the project to identify and submit any intellectual capital developed on the project.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout

Fast Points

Closing Projects

- When Is a Project Closed?
- Actions Required for a Successful Project Closeout
- Project Closing Terms
- Project Closing Activities
- Questions to Ask at the End of a Project
- Documents Required for a Successful Project
- Project Manager's Responsibilities
- Final Project Meetings and Reviews
- Closing the Project - Question

- Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check

Project Management Tool Suite

Preferences

Closing the Project

Question

Which of the following actions are required for a successful closeout? (Select all that apply.)

- A. Submit PCRs to document changes
- B. Obtain the latest project status reports
- C. Collect updated copies of the sponsor and supplier agreements
- D. Find a new job
- E. Obtain the asset inventory for the project

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Documenting Lessons You Have Learned
 - Examples of Lessons Learned
 - Gathering Lessons Learned
 - Conducting a Lessons Learned Session
 - Lessons Learned - Question
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Lessons Learned

Documenting Lessons You Have Learned

Lessons learned on a project are very valuable to delivery team members and members of current or future project teams. It should not be necessary for every project manager to make every mistake. A database of lessons learned can help project managers learn from each other's experiences.

This information becomes part of the organization's historical database for the project. Accessible to other project managers, a lessons learned list is a valuable tool in any organization.

Lessons learned are not necessarily negative. They can describe a way to do something better, faster, or more efficiently. You, as the project manager, should document lessons learned as soon as possible after the lesson is experienced, while the memory is fresh and most likely to be accurate. When deciding what to document, remember that the lesson:

- Should be relevant to other projects
- Must be in the right context, so that the person reading it can understand the environment in which the lesson was experienced and who was involved
- Should include enough detail to make it understandable and to allow the reader to appreciate the full set of circumstances



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Documenting Lessons You Have Learned
 - Examples of Lessons Learned
 - Gathering Lessons Learned
 - Conducting a Lessons Learned Session
 - Lessons Learned - Question

 Intellectual Capital Management

- Seven Keys
- WWPMM
- Mentor
- Case Study

 Self-Check 13: Project Management Tool Suite 14: Self-Assessment and Final Exam

Preferences

Lessons Learned

Examples of Lessons Learned

A few examples of lessons learned are:

- Clearly defined, understood, and agreed-to requirements are key for a successful project.
- The project team must fully understand the commitments before implementing the formal agreement.
- Timely involvement by IBM procurement is crucial.
- Understanding the customer's organization, and who the official and unofficial decision makers are, is key to project success.
- Executive management support for a project is key to project success.
- Provide a long lead time for resource procurement.
- Sponsor-supplied staff is not always the best or the most productive.
- Multiple project managers on a project can lead to problems unless the transition from one project manager to the next is carefully managed.
- Internal projects are as challenging as, or even more challenging, than projects with external sponsors.

To make these lessons more relevant and of true value, expand on them.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Documenting Lessons You Have Learned
 - Examples of Lessons Learned
 - Gathering Lessons Learned
 - Conducting a Lessons Learned Session
 - Lessons Learned - Question
- Intellectual Capital Management
 - Seven Keys
 - WWPM
 - Mentor
 - Case Study
- Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Lessons Learned

Gathering Lessons Learned

Start gathering and documenting lessons learned from the beginning of the project. At the beginning of the project, identify and document the lessons that you hope will be learned from the project and the intellectual capital that should be created. These might include:

- The effectiveness of policies, procedures, processes, standards, methods, and tools used on the project and how they can be improved
- The effectiveness of the sponsor interface and how it can be improved
- The effectiveness of the relationship with suppliers and how it can be improved
- Opportunities for improvement in skills and procedures
- Lessons learned that should be passed to future projects

Lessons learned should be recorded as soon as possible after the lesson is experienced. As the project proceeds, you should keep an ongoing list of lessons learned so that you will not lose any. In addition, you should solicit inputs for lessons learned from delivery team members, suppliers, sponsors, and key stakeholders.

It is very effective for all of the project managers to share their lessons learned in a repository that is accessible to everyone. There is no reason why all the project managers need to make the same mistakes.



Everytime you are starting a new project review the lessons learned. As you are defining your processes and creating your documents this will remind you of the things that worked well and the things that did not work well.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Documenting Lessons You Have Learned
 - Examples of Lessons Learned
 - Gathering Lessons Learned
 - Conducting a Lessons Learned Session
- Lessons Learned - Question
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Lessons Learned

Conducting a Lessons Learned Session

Toward the end of the project, conduct a lessons learned meeting. The output of the meeting will be the Lessons Learned work product.

Invite all the participants on the project. Ask each to bring a list of what went well, what did not go well, and lessons that each learned. On some large projects, you might want to conduct multiple meetings or a separate meeting with the suppliers and another meeting with the IBM team.

The following is a sample agenda that works well.

Agenda

- What went well on the project? Why did it go well?
- What lessons were learned from what went well?
- What did not go well on the project? Why did it not go well?
- What lessons were learned from what did not go well?
- Presentation of the lessons learned that you documented during the project.

Some questions you can ask to get the discussion started include:

- How effective were the policies, procedures, processes, standards, methods, and tools used on the project and how they can be improved?
- How effective was the sponsor interface and how it can be improved?
- How effective was the relationship with suppliers and how it can be improved?
- What opportunities exist for improving skills and procedures?
- Which lessons learned should be passed on to future projects?





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Documenting Lessons You Have Learned
 - Examples of Lessons Learned
 - Gathering Lessons Learned
 - Conducting a Lessons Learned Session
 - Lessons Learned - Question
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Lessons Learned

Question

Lessons learned:

- A. Are documented about a year after a project closeout
- B. Can be very valuable to others working on future projects
- C. Help team members communicate about the project
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
- Intellectual Capital Management
 - Intellectual Capital Management - Question
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Intellectual Capital Management

The Intellectual Capital Management (ICM) Knowledge Management Process

The purpose of knowledge management is to leverage global intellectual capital to IBM's competitive advantage. As a project manager, knowledge management can:

- Provide you with intellectual capital that will help you meet your customer's expectations and complete a project on time and within budget
- Provide you with access to project management subject matter experts, who act as a resource for you throughout a project
- Assist you in maintaining and enhancing your professional currency by accessing current thought leadership and sharing your knowledge through participation in sharenets, forums, and other Project Management Knowledge Network (PMKN) activities

The PMKN is a community dedicated to leveraging the body of knowledge to achieve efficiencies and effectiveness in project execution. Intellectual Capital Management (ICM) is part of the total knowledge management process.

In the ICM process, IBM project managers identify reusable products, processes, and lessons learned on a project and submit them, normally during project closing, with submission forms to the PMKN on IBM Rational Asset Manager (iRAM). iRAM is an IBM centralized system for knowledge sharing, collaboration, and intellectual capital management.

Adding intellectual capital to the PMKN is very important. Reading and using the information is just as critical. By using the information already provided, you can improve your project management skills and learn ideas for improving your project. Access the information in the PMKN as you start each new project and whenever you have a question or issue needing the ideas of others. The probability is high that another IBM project manager in a similar or related project experienced the same issue and documented the actions taken to solve it.

Ensure that the material you submit as intellectual capital is also documented in the project evaluation report for your project.

What Is iRAM?

IBM Rational Asset Manager is an Intranet-based collaborative environment for creating and governing assets, such as intellectual capital. You can download assets, submit and manage your assets, and review, rate, and discuss assets.

Assets in iRAM can be searched using several criteria, such as Type, Category, or Community.

Note: iRAM has replaced ICM AssetWeb as repository of PMKN assets.

Instructions for Accessing the Project Management Knowledge Network

To access the PMKN through iRAM:

1. Click this link to access [iRAM](#).
2. Log in to iRAM.

To search for intellectual capital:

1. Select the **Assets** tab.
2. Click **View more** in the Category filter select the **PMKN Schema** category.
3. Refine your search by clicking the appropriate links in the **120 Lessons Learned** schema.

To submit an intellectual capital asset to the PMKN:

1. Click the **Submit an Asset** button towards the top of the page.
2. Following the tabs across the page:
 1. Describe your submission, selecting **IBM Project Management Knowledge Network** as **Category** and **PMKN Template** as **Type**. Be sure to provide all required information.
 2. **Attach** the appropriate files.
 3. **Categorize** by selecting **PMKN Schema 120 Lessons Learned** and selecting all categories that apply.
 4. **Associate** by adding related assets, if applicable.
 5. **Confirm** your submission.



Project Management Orientation

- 1: Getting Started
 - 2: Define the Project
 - 3: Team Management
 - 4: Identify and Validate Requirements
 - 5: Create Decomposition Structures
 - 6: Risk Management
 - 7: Project Estimates
 - 8: Project Schedules
 - 9: Change Management
 - 10: Project Control and Delivery
 - 11: Project Management Review
 - 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Intellectual Capital Management
 - Intellectual Capital Management
 - Intellectual Capital Management
 - - Seven Keys
 - WWPPM
 - Mentor
 - Case Study
 - Self-Check
 - 13: Project Management Tool Suite
 - 14: Self-Assessment and Final Exam

Preferences

Intellectual Capital Management

Question

When should project managers use the ICM process?

- A. When submitting a PCR
 - B. When updating the project schedule
 - C. At the start of new projects
 - D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management

- Seven Keys
- WWPMM
- Mentor
- Case Study
- Self-Check

- 13: Project Management Tool Suite

- 14: Self-Assessment and Final Exam

Preferences

Project Closeout

Seven Keys to Success™

When gathering lessons learned, it is a good idea to review your Seven Key HUD status reports.

- Ask yourself why did a key go red?
- What was the corrective action you took?
- Was it as successful as you had planned?
- Would another course of action have been better?

The Seven Keys can help you learn from your mistakes so your next project will run more smoothly.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Closeout

WWPMM

The following are the WWPMM practices, activities, and work products associated with the topics in this module. For information on all of these resources, go to the [WWPMM Web site](#).

WWPMM Practices

- Human Resource Management
- Quality Management
- Sponsor Agreement Management
- Supplier Management
- Technical Environment Management (Supplemental Practice)



WWPMM Activities

- Release Staff
- Release Supplier
- Manage End of Project

WWPMM Work Products

- Lessons Learned (Supplemental Work Product)
- Project Evaluation Report



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Closeout**Mentor****Why It Is Important to Close the Project**

If your project is not closed properly, significant legal, warranty, asset management, and financial implications to IBM can result. Closing your project is the final step in what everyone hopes has been a successful project.

I once had a project that I never took the time to close. I had moved on to the next project and felt I did not have time to do what I considered "paperwork." I had not verified that the commitments had been met, and I did not update the documentation. As a result, that project haunted me for months. The customer felt that the project had not ended, and continued to call me constantly to ask for things. As time passed, it became increasingly difficult to remember the agreements and status of the project. Because I had not taken the time to update the documentation, I did not have the documentation as backup when I needed it. What had been a very successful project became a nightmare. The customer grew increasingly unhappy.

Don't forget the Delivery Organization Benefits key. I believe significant benefits are realized from gathering and documenting lessons learned. When I am getting ready to start a new project, I go through the lessons learned that our team has accumulated for the last several years. Every time I do, I find something that I can use to make this new project better. Most of the time my findings are simple suggestions that helped clarify an issue. A terrific example, one that served me well at one point on a project, was to ensure that the sponsor and the other vendors were using the same word processor to facilitate review of project documents. Although this compatibility had already been specified for my project, seeing the same information in a lessons learned reminded me to ensure that this compatibility was properly addressed.

When closing the project, take care of your good people. Recommending awards or having a final thank you celebration can make a team feel good and more willing to work for you again. A good project manager knows the importance of locating and keeping employees with good skills. Do not lose team members to another project manager who has been more appreciative. Whenever I make an effort to say thank you to my team, I find them willing to work with me again.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Project Closeout

Case Study

Before You Start

Do not attempt to start this assignment without learning the concepts and what your mentor has to say.

Note: This case study work is recommended and will deepen your understanding of the course concepts. However, the case study is not required to pass the final exam or get course credit.

Documenting Your Lessons Learned

The pilot for the training subproject has been completed successfully. The pilot completed with \$30,000 over budget, but only two weeks later than planned. The software vendor was also two weeks late, so the overall project schedule was not affected by the late pilot.

The executive director has accepted the training course because of the positive comments he received from his staff, who are now using the course as the system is being rolled out.

Your Assignment

It is time to document the lessons you have learned on this part of the project. As a student going through this case study, what did you learn that you will use on the job? One example might be to use the WWPMM work product for the Project Definition document for your next project or perhaps do a complete closing on your current project. Create a list of six to eight lessons learned.

Attachments

There are no attachments for this assignment.

Check Your Work

There is no "Check Your Work" section for this module.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check

- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
 - Self-Check

Preferences

Self-Check

Question 1 of 10

The purpose of closing a project is to ensure that all documents and agreements are complete and that all commitments have been met.

- A. True
- B. False

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 2 of 10

What are some of the project manager's closeout responsibilities? (Select all that apply.)

- A. Create a project definition document
- B. Release the staff
- C. Document requirements from exclusions
- D. Close out the project with the sponsor
- E. Prepare a project evaluation report

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

Preferences

Self-Check

Question 3 of 10

Which document is associated with a successful project closeout?

- A. Project evaluation report
- B. Project control book
- C. Weekly status reports
- D. Work product descriptions

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

Preferences

Self-Check

Question 4 of 10

The lessons learned from a project that should be documented are those that are unique and not likely to be duplicated.

- A. True
 B. False

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

Preferences

Self-Check

Question 5 of 10

Which of the following tasks should be covered during a session about lessons learned?

- A. Identify what went well on the project
- B. Document the detail of the entire project
- C. Present lessons learned from prior projects
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

Preferences

Self-Check

Question 6 of 10

How can knowledge management help you?

- A. To submit and reuse intellectual capital
- B. To provide access to project management subject matter experts
- C. To maintain and enhance your professional currency
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

Preferences

Self-Check

Question 7 of 10

Why is it important to close out the project? (Select all that apply.)

- A. There are significant legal, warranty, asset management, and financial implications.
- B. It is necessary to ensure that all deliverables have been completed and accepted.
- C. It is necessary to wait until all deliverables have been accepted to begin closing the project.
- D. It is necessary to ensure that all commitments have been met.

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

Preferences

Self-Check

Question 8 of 10

What are the benefits of gathering the lessons learned?

- A. The project stays on schedule.
- B. It provides an opportunity to share the experience and knowledge gained on the project.
- C. It helps the project get started.
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
- Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
 - Question 6
 - Question 7
 - Question 8
 - Question 9
 - Question 10

Preferences

Self-Check

Question 9 of 10

What are the benefits of sharing intellectual capital?

- A. You gain knowledge about issues and actions from project managers in similar or related projects.
- B. Team members have a place to store their work products.
- C. An orderly close to the project is ensured.
- D. All of the above

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
 - Fast Points
 - Closing Projects
 - Lessons Learned
 - Intellectual Capital Management
 - Seven Keys
 - WWPMM
 - Mentor
 - Case Study

Preferences

Self-Check

Question 10 of 10

Which of the following are components of the Delivery Organization Benefits Are Being Realized key? (Select all that apply.)

- A. IBM's reputation
- B. Billings and collections
- C. Team members' skills and knowledge
- D. IBM's knowledge and lessons learned

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 13 Objectives

This module enables you to:

- Describe how the PM Tool Suite supports the Worldwide Project Management Method (WWPMM)
- Describe the capabilities of each of the tools in the PM Tool Suite
- Know where to find more information about the tools that are used in your business area and geography
- Know where to go to download the tools

This module takes approximately 15 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- Fast Points
- Project Management Tools
- Self-Check

14: Self-Assessment and Final Exam

Preferences

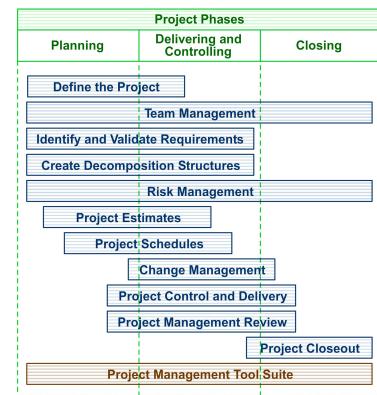
Project Management Tool Suite

Fast Points

The diagram shows the modules and how they relate to the project phases.

You are now starting the module "Project Management Tool Suite", which is covered throughout all the project phases: Planning, Delivering and Controlling phase and the Closing phase.

There are many tools in the PM Tool Suite.





Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
 - Fast Points
 - Project Management Tools
- Self-Check
- 14: Self-Assessment and Final Exam

Preferences

Project Management Tool Suite

Project Management Tools

Which Tools Should You Use?

The IBM PM Tool Suite is a group of tools that the PM/COE has determined are suitable for use in IBM to manage our projects and programs. This tool suite supports the use of technical methods and the Worldwide Project Management Method (WWPMM) in project planning and execution. The tools can be used in stand-alone or integrated configurations to support a wide range of projects.

The PM Tool Suite is organized into categories. Strategic tools provide function across a wide array of project or program management practices, and should always be considered when establishing an organizational PM tools strategy. IBM Program Work Center (IPWC) is the primary strategic tool and should be considered first as a foundational tool.

Before using any tool in the PM Tool Suite, you should reference the PM Tool Suite page on the IBM Project Management Center of Excellence Website. The PM Tool Suite page provides more detailed information on tool availability and version release notes. It also lists the PM Tool Suite representative for your business area and geography. Your PM Tool Suite representative can tell you which tools you should use and how to get started.

You can access the IBM Project Management Center of Excellence website and find the [PM Tools homepage](#).

Before obtaining any of these tools, refer to your Deployment Leader to identify any local deployment policies and requirements.

Click each tab to read the description.

Strategic Tools:

▼ IBM Program Work Center (IPWC)

IBM Program Work Center (IPWC) is recommended for project and program management for most IBM business units, including all services organizations, or organizations offering services as a part of their business model. This tool provides comprehensive project and program management capabilities required for managing services engagements, but is equally capable in a broad range of project and program management environments.

Here are some key features of IPWC:

- Real-time reports and personalized home pages for tracking status, assignments, and issues
- Graphical project timelines and critical path displays
- Automated and push based email alerts to keep the team on track
- Full featured, flexible knowledge repository for capturing structured, field-level data and unstructured documents
- Robust issue tracking and resolution
- Context associations between tasks, issues, documents, and benefits for linking action to strategy
- Rich, customizable reporting with drill down and stop-lighting
- Integrated full text search across all program data
- Integration with MS Excel and MS Project
- Highly secure permissions and role based access control with fully encrypted data storage
- Complete audit history and change management
- Zero-footprint client

An introduction to IPWC and details on education can be found at the [IPWC Community Wiki](#) and at the [Project Services website](#).

▼ Rational Focal Point (RFP)

Rational Focal Point (RFP) is recommended for product or IT portfolio based businesses for the purpose of managing the strategic portfolio of investments, not for project and program management.

RFP provides product and portfolio management driven by market needs and your business objectives. This comprehensive solution helps you prioritize and select the right investments, balance change with business demands and align resources to deliver the right products at the right time. Now your executives and teams can make decisions that deliver greater value to your customers and your business.

- Improves decision making by enabling you to automatically incorporate stakeholder feedback, share centralized information and use objective information to support decisions.
- Uses visualization, prioritization, road maps and plans to help you assess the effects of decisions. Now you can create plans that are achievable, value-based, and balanced against internal constraints and resources.
- Uses predefined configurations based on best practices to define a portfolio of investments driven by customer and business value, marketplace analysis and stakeholder collaboration.
- Integrates enterprise architecture and project execution into portfolio management. This helps ensure enterprise and project decisions are aligned with your company's financial and market needs.

▼ Rational Team Concert (RTC)

Rational Team Concert (RTC) is recommended for work stream management in organizations performing software development activities. RTC is especially well suited for teams already using Rational's Jazz based development tools and using Agile development. RTC does not provide comprehensive coverage of the Project Management processes, and should be used along with another PPM tool such as IPWC.

Rational Team Concert (RTC) is an Agile application life cycle Management (ALM) solution. It helps organizations develop software with an all-in-one Agile development environment for teams, which includes, agile, formal, and hybrid planning and reporting, on a common platform. In addition, RTC provides collaborative change management capabilities.

- Enhances team collaboration with integrate features including work-item, build, and software configuration management
- Provides high visibility into project activities and team progress with multilevel dashboards and reporting
- Facilitates planning and execution of agile and formal projects with planning tools and templates
- Helps improve productivity with advanced source control for geographically distributed teams

Other PM Tools:

▼ Integrated Project Planning and Forecasting (IPPF)

Integrated Project Planning and Forecasting (IPPF) is recommended for all services organizations reporting periodic financial forecasts and 7 Keys assessments. IPPF is being deployed globally to replace many legacy applications which provide these functions. Please refer to your organizations PM Tools Policy to determine if you should be using IPPF.

The IPPF solution provides a key resource for project managers and partners to help in managing and controlling project financial and non financial information through:

- Project Financial Control (planning, reconciliation, and forecasting)
- Non-financial project assessments
- Integrated with back end systems

▼ Microsoft Project (MSP)

Microsoft Project (MSP) is recommended as a workstation based scheduling tool to develop or maintain schedules which will be imported into one of the strategic PM tools; or when a client requires the use of specific functions only available in MSP. Because of the cost of MSP, whenever possible, other PM Tool Suite alternatives should be considered. Server based MSP solutions such as Project Server or Project Central are not recommended and should not be deployed in IBM.

MSP is a project scheduler which can be used to develop a project work breakdown structure (WBS) and associated project schedule with assigned resources. MSP supports schedules that range from simple, to very complex containing thousands of tasks. MSP is the de facto standard for project schedules, and as such, has become a common file format for many 3rd party project management applications.

To obtain MSP, the BOND (Buy ON Demand) system must be used, and executive approval may be required in some business units. Procurement will require justification for all MSP licenses. IBM maintains an SLM (Software Lifecycle Management) inventory of MSP licenses which may be available based on justification and a BOND request.

▼ OpenProj

OpenProj is recommended as a workstation-based scheduling tool for small internal departmental projects of less than 100 tasks, for project scheduler training, or for developing component project schedules offline that will be imported into an enterprise PM tool. Mission critical or customer facing projects should use the IBM enterprise PM tool - IBM Project Work Center (IPWC).

OpenProj is an open source desktop project management application that provides control, tracking and management of projects. It provides a Work Breakdown Structure (WBS) to order and control the tasks of the project and a Resource Breakdown Structure (RBS) to define the structure of the resources, teams, providers, etc. The Report tool provides information about the current status of your project as well as different views of the project; Histogram, Gantt Chart, Task Usage and Resource Usage.

OpenProj works on Linux, Unix, Mac or Windows platforms.

▼ GS Risk

GS Risk is recommended for performing risk assessments at various stages across the life cycle of a project, such as during the proposal cycle, after startup, periodic during delivery, and at project close.

GS Risk is a risk management tool that has been designed specifically for IBM internal use. Lessons learned from thousands of services projects have been used to help create risk assessments and provide best practices mitigation suggestions for individual risk management plans. The tool is designed to provide thorough risk assessments while minimizing the time it takes to use by eliminating the need to key-in risk statements and containment actions. With a minimal amount of input, a risk assessment can be completed and a risk management plan can be created for your project.

GS Risk includes the capability to assess project management health.

▼ Software Lifecycle Management (SLIM)

Software Lifecycle Management (SLIM) is recommended for project estimating.

Software Lifecycle Management (SLIM) is a suite of five modules by Quantitative Software Management (QSM), designed to address the full project lifecycle - from initial proposal to project close. QSM SLIM is a flexible estimating tool and supports multiple project types, sizing inputs, and productivity indexes. Templates exist for industry standard methods such as RUP and Agile. Some customization is required to tune to IBM methods. SLIM is IBM's strategic solution for project estimating. IBM has invested in an enterprise-wide license for the SLIM tool suite from QSM.

- SLIM - Estimate: a project planning and estimation tool
- SLIM - Control: a tracking and forecasting tool for in-progress projects
- SLIM - MasterPlan: a management tool that aggregates estimates
- SLIM - DataManager: a data collection and metrics repository
- SLIM - Metrics: a productivity analysis and benchmarking tool

For more information about SLIM, refer to the [SLIM Community](#).

▼ Project Control Book (PCB)

The PM/COE does not recommend using the Notes-based **Project Control Book (PCB)** legacy tool, which may still be in operation for ongoing projects. The PM/COE recommends project teams to transition to one of the strategic PM tools such as IBM Program Work Center (IPWC). The IBM Notes-based PCB tool should only be considered when IPWC can not be used. The approval of your IPWC Deployment Consultant is required for PCB use.

The Project Control Book (PCB) is a Lotus Notes based Tool which provides a secure means of managing and controlling key Project Management work products for one or more projects. The PCB is used by the project team in order to create, and communicate key project information such as milestones, issues, risks, changes, meetings, and decisions.

For more information on PCB, refer to the [Project Services website](#).



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
 - Fast Points
 - Project Management Tools
- Self-Check

- 14: Self-Assessment and Final Exam

Preferences

Self-Check

There is a series of self-check questions for each module in the Self-Check folder to enable you to reflect on what you have learned. Your participation in these self-check questions is not tracked.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
 - Fast Points
 - Project Management Tools
- Self-Check

 Question 1 Question 2 Question 3 Question 4 Question 5 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 1 of 5

Which tool is used for identifying risks and generating containment plans?

- A. IBM Program Work Center (IPWC)
- B. Rational Focal Point (RFP)
- C. GS Risk
- D. OpenProj
- E. Software Lifecycle Management (SLIM)
- F. IBM Rational Portfolio Manager

Submit Answer



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
 - Fast Points
 - Project Management Tools
 - Self-Check
- Question 1
- Question 2
- Question 3
- Question 4
- Question 5

 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 2 of 5

Which tool provides the comprehensive project and program management capabilities required for managing services engagements?

- A. IBM Program Work Center (IPWC)
- B. Rational Focal Point (RFP)
- C. GS Risk
- D. OpenProj
- E. Software Lifecycle Management (SLIM)
- F. IBM Rational Portfolio Manager



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- + 10: Project Control and Delivery
- + 11: Project Management Review
- + 12: Project Closeout
- 13: Project Management Tool Suite
 - Fast Points
 - Project Management Tools
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
- + 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 3 of 5

Which tool integrates enterprise architecture and project execution into portfolio management?

- A. IBM Program Work Center (IPWC)
- B. Rational Focal Point (RFP)
- C. GS Risk
- D. OpenProj
- E. Software Lifecycle Management (SLIM)
- F. IBM Rational Portfolio Manager

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- + 10: Project Control and Delivery
- + 11: Project Management Review
- + 12: Project Closeout
- 13: Project Management Tool Suite
 - Fast Points
 - Project Management Tools
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5
- + 14: Self-Assessment and Final Exam

Preferences

Self-Check

Question 4 of 5

Which is recommended as a workstation-based scheduling tool for small internal departmental projects?

- A. IBM Program Work Center (IPWC)
- B. Rational Focal Point (RFP)
- C. GS Risk
- D. OpenProj
- E. Software Lifecycle Management (SLIM)
- F. IBM Rational Portfolio Manager

Submit Answer



Project Management Orientation

- + 1: Getting Started
- + 2: Define the Project
- + 3: Team Management
- + 4: Identify and Validate Requirements
- + 5: Create Decomposition Structures
- + 6: Risk Management
- + 7: Project Estimates
- + 8: Project Schedules
- + 9: Change Management
- + 10: Project Control and Delivery
- + 11: Project Management Review
- + 12: Project Closeout
- 13: Project Management Tool Suite
 - Fast Points
 - Project Management Tools
- Self-Check
 - Question 1
 - Question 2
 - Question 3
 - Question 4
 - Question 5

+ 14: Self-Assessment and Final Exam

Self-Check

Question 5 of 5

Which tool is IBM's strategic solution for project estimating?

- A. IBM Program Work Center (IPWC)
- B. Rational Focal Point (RFP)
- C. GS Risk
- D. OpenProj
- E. Software Lifecycle Management (SLIM)
- F. IBM Rational Portfolio Manager

Submit Answer

Preferences



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

Preferences

Module 14 Objectives

This module enables you to:

- Complete the self-assessment
- Access the final exam

This module takes approximately 45 minutes to complete.



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam

- Self-Assessment
- Final Exam

Preferences

Self-Assessment and Final Exam

Project Management Self-Assessment

Now that you have completed the Project Management Orientation course, it is time for you to reflect on the material covered in the course and your experiences working on projects, and identify your project management strengths and weaknesses. After that, identify your learning objectives for the upcoming Project Management Fundamentals course.

A learning objective is a statement of something you will know or be able to do upon completing the training. This exercise will help you focus on what you want to accomplish by attending Project Management Fundamentals.

As you reflect on your strengths, weaknesses and learning objectives, think not only about your needs, but also the needs of the people you work with. Identify the improvements they will want to see in you as a result of attending this training.

Click the icon to open or download the Project Management Self-Assessment document.



Project Management Self-Assessment.doc



Project Management Orientation

- 1: Getting Started
- 2: Define the Project
- 3: Team Management
- 4: Identify and Validate Requirements
- 5: Create Decomposition Structures
- 6: Risk Management
- 7: Project Estimates
- 8: Project Schedules
- 9: Change Management
- 10: Project Control and Delivery
- 11: Project Management Review
- 12: Project Closeout
- 13: Project Management Tool Suite
- 14: Self-Assessment and Final Exam
 - Self-Assessment
 - Final Exam

Preferences

Self-Assessment and Final Exam

How to Launch the On-Line Final Exam

You must pass the final examination to receive credit for this course.

Follow these instructions to access the on-line final exam:

1. Click this link to connect to the [Project Management Professional Development Education Program Testing page](#) on the CAS server.
 - o The CAS Welcome page is displayed.
2. Ensure that your computer is set up properly to take the exam.
 - o Click **Prepare your system** in the blue navigator on the left.
 - o Click **Yes** to any security warnings.
 - o Ensure that green checkmarks are next to each of the system prerequisites in the list.
3. Take the exam.
 - o Click **Sign In** in the blue navigator on the left.
 - o Click **Yes** to any security warnings.
 - o Enter your intranet ID and password, and then click the **Sign in** button on the right.
 - o The CAS Workspace page is displayed.
 - o Click the **Start** button to the right of **Project Management Orientation**.
 - o On the Honor Code page, read the conditions, enter the **access key PM54S**, and click **Proceed**.
4. You have three opportunities to pass the exam. If you fail the exam a third time, you will be required to re-enroll in the class.
5. If you have any technical problems, please see the next page.

System Access:

If you have problems with the test system:

- For general on-line exam technical questions, click **Help** in the blue navigator area on the left side of the CAS page.
- If you are disconnected from the CAS test system while you are taking the exam, your answers will be saved. To restore the test session and complete your exam:
 1. Sign in to the [Project Management Professional Development Education Program Testing page](#) again.
 2. On the Workspace page, click the appropriate test session's **Start** button on the right again.
 3. On the Resume or Restart page, click **Resume**. Note: If you click **Restart**, your answers will be lost.
- If you cannot launch the CAS test system:
 - o Verify that you can access other IBM intranet Web sites.
 - o If you can access the IBM intranet, but cannot launch the CAS test system, contact edhelp@us.ibm.com or contact your IBM support Help Desk for assistance.

Note: For those of you planning to attend the Project Management Fundamentals course, you must present evidence that you passed this exam to be admitted into class. There is no formal completion certificate mailed to students who complete this course; you must print a completion certificate from the Certification & Assessment Services Testing System after you have successfully passed the final exam. The certificate will be available on the Results page. For instructions about how to print the completion certificate, see the Testing System On-line Help.