Module 2

Module Objectives

The objectives of this module are:

- Distinguish between types of project organizations
- Describe the leadership qualities of a project manager
- Understand the content of a Project Management Plan
- Describe how to define a project

Reading Assignment

PMBOK® Guide, Chapters 2-4

Project Organizations

Project organizations are generally divided into categories, as discussed in Section 2.4.4 and shown in Table 2-1:

- A project coordinated within a functional organization. A typical functional organization is divided into functions, for example – marketing, engineering, manufacturing, and procurement. The functional organization is not an ideal environment for a project, because the project coordinator has very little authority to have the personnel perform the project to a specified cost or schedule requirement. Nonetheless, many smaller projects are performed in this environment.

- A project conducted within a purely projectized organization, where the project managers report directly to the upper management. The disadvantages of this approach are that the functional personnel within the project may not coordinate their activities. For example, the procurement personnel on one project may not realize that economies of scale could be achieved by combining their orders with another project. The projectized organization is usually only used for very large projects, such as large construction or defense projects.

- A project conducted within a matrix organization. This is when the projects are led by a project manager where the members of the project team continue also to be members of their functional organization. This is the most common environment for projects to be conducted. There are three subsets of projects conducted within matrix organizations:

    - Weak matrix, where the project manager has less power than the functional manager.

    - Balanced matrix, where the project manager and the functional manager have approximately equal power.

    - Strong matrix, where the project manager has more power than the functional manager.

There are many advantages and disadvantages to a matrix organization, as follows:

Advantages of Matrix Organization	Disadvantages of Matrix Organization
Highly visible project objectives	Higher costs due to more administrative personnel
Improved control over resources	More complex reporting relationships (two bosses)
Rapid responses to contingencies	More complex monitoring and control
More support from functional organizations	Difficult resource allocations and project priorities
Maximum utilization of scarce resources	Difference in priorities between project managers and functional managers
Better balance between objectives	Need for extensive policies and procedures
More effective dissemination of information	Duplication of efforts
Project termination is not as traumatic	Higher potential for conflict
Strong technical base maintained	

Advantages and Disadvantages of a Matrix Organization

Qualities of a Project Manager

As stated in Section 3.4.1, one of the key skill sets of a project manager is leadership. A project manager must lead by example to increase the success of the project. Six aspects of leading by example are listed in the following table:

Aspect	Relationship to Project Manager
Priorities	**Must confirm priorities by actions as well as words.**
Urgency	**Must convey a sense of urgency if the project is to be finished on time.**
Problem-solving	**Must be concerned about solving problems rather than blaming project team members.**
Cooperation	**Must treat all stakeholders with respect.**
Standards of performance	**Must establish high standards of performance for themselves as well as others.**
Ethics	**Must act in an ethical manner.**

Aspects of the Project Manager Leading by Example

Project Integration Management

Project Integration Management includes the processes and activities needed to identify, define, combine, unify, and coordinate the various processes and project management activities. As shown in Figure 4-1 of the *PMBOK® Guide*, Project Integration Management consists of seven project management processes. They are:

1. Develop Project Charter
2. Develop Project Management Plan
3. Direct and manage project work

4. Manage project knowledge
5. Monitor and control project work
6. Perform Integrated change control
7. Close project or phase

Initiating the Project

To perform a successful project, it is very important to initiate the project so that all of the project team members and other stakeholders (those people who are affected or interested in the outcome of the project) have a common understanding of the project. The Initiating Process Group has two project management processes: Develop Project Charter and Identify Stakeholders, as shown in Table 1-4.

Develop Project Charter

The first document created in a project should be the Project Charter, as discussed in Section 4.1 of the *PMBOK® Guide*. The Project Charter is defined by the *PMBOK® Guide* as "a document issued by the project initiator or sponsor that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities."

As shown in Figure 4-2, the inputs to the Project Charter include the business case, agreements, enterprise environmental factors, and organizational process assets. Tools and techniques used to develop the Project Charter include expert judgment, data gathering, interpersonal and team skills, and meetings.

Identify Stakeholders

The other project management process in the Initiating Process Group is to identify the stakeholders, who are the people impacted by the project, and determining their interests, involvement, and impact on project success.

Categories of project stakeholders and their relationship to the project may include some of the following:

Stakeholders	Relationship to Project
Customer	**Buyers of the product or service**
User	**Users of the product or service**
Sponsor	**Provides financial resources to project**
Portfolio managers/board	**Responsible for high-level governance of a collection of projects or programs**
Program manager	**Responsible for managing a program, or collection of related projects**
Project Management Office (PMO)	**Coordinates projects under its domain**
Project manager	**Responsible for project success**
Project team	**Responsible for completing project tasks**
Functional managers	**Assign project resources**
Operations management	**Produce saleable products or services developed in the project**
Sellers/business partners	**Provide work and material for project**

Stakeholders and Their Relationship to the Project

Additional stakeholders of the project may include the following:

Additional Stakeholders	Relationship to Project
Influencers	**People or groups that can positively or negatively affect the project**
Administrative support	**Provide support services to project**
Top management	**Approves funding, establishes project priorities**
Contractors	**Perform project work under contract from performing organization**
Government agencies	**Place constraints on project**
Public interest groups	**May apply environmental or other pressure on project**
Competition	**May add features to their product, which influences the project**

Additional Stakeholders and Their Relationship to the Project

After identifying the stakeholders, the next step is to identify the project Measures of Success, or what will meet or exceed the expectation of each stakeholder. If we want our project to be an unqualified success, it would be desirable to meet or exceed the expectations of each stakeholder (with the exception of the competition!). With all the potential stakeholder groups listed above, we can see that this is not an easy achievement!

Measures of Project Success

To identify the Measures of Project Success, we have to first list the project stakeholders. We then determine from the stakeholders what will meet or exceed their expectations. For example, for a house project, we may have the following stakeholders and their expectations:

Stakeholders	Measures of Project Success (what will meet or exceed the expectation of each stakeholder)
Owners	**On budget, on time, to specifications**
Owners' family	**Family activity room, play area, swimming pool**
Contractor	**Make fair profit**
Workers	**Fair pay and benefits, good working conditions**
Lender	**On budget, on time**

Measures of Project Success for a House Project

Project Management Plan

The development of the Project Management Plan is discussed in Section 4.2 of the *PMBOK® Guide*. The Project Management Plan is defined by the *PMBOK® Guide* as "the document that describes how the project will be executed, monitored, controlled and closed." It may be a summary or detailed and may be composed of one or more subsidiary management plans and other planning documents.

As shown in Figure 4-4, the inputs for the Project Management Plan include the Project Charter, outputs from the other processes, enterprise environmental factors, and organizational process assets. Tool and techniques used to develop the Project Management Plan include expert judgment, data gathering, interpersonal and team skills, and meetings.

As listed in Section 4.2.3.1, the Project Management Plan may include:

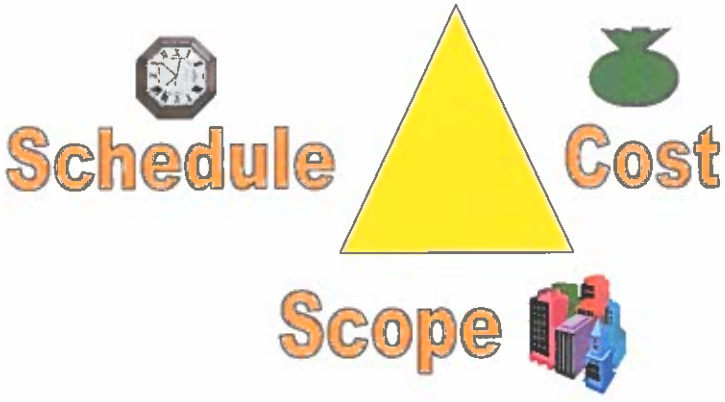
- Scope management plan
- Requirements management plan
- Schedule management plan
- Cost management plan
- Quality management plan
- Resource management plan
- Communications management plan
- Risk management plan
- Procurement management plan
- Stakeholder engagement plan

Establishing Project Tradeoffs

There are three key elements in a project:

- Project scope – the work that must be done on the project to achieve the project objectives
- Project schedule – the timeframe and milestones of the schedule
- Project cost – the amount of resources, including personnel, that are required to perform the project

These elements – the project scope, schedule, and cost – are depicted in the following graphic as a triangle because they are interrelated:



Project Scope, Schedule, and Cost Relationship

These elements are interrelated because a change in one usually affects the other two. For example, if the project schedule increases and the project scope is held constant, the project cost will probably increase.

If changes happen to one of these elements on the project, we should be ready to determine what tradeoffs we should make in the other two elements. This is accomplished by what some call the Project Priority Matrix, and others term the Project Flexibility Matrix or Project Tradeoff Matrix.

For example, when President Kennedy called for landing a man on the Moon and returning him safely to Earth by the end of the decade (Apollo Program), we could assume from his statement that the least flexible element was the project schedule. The project scope was somewhat flexible in terms of how many men should land on the Moon. Therefore we could infer that the most flexible element would be the project cost. This situation is depicted in the following Project Flexibility Matrix for the Apollo Program:

	Project Scope	**Project Schedule**	**Project Cost**
Most Flexible			**X**
Somewhat Flexible	**X**		
Least Flexible		**X**	

Project Flexibility Matrix for the Apollo Program

The Project Flexibility Matrix should be established with the Project Sponsor at the beginning of the project, so that when changes on the project occur, there is no question as to which element will be the most flexible in terms of implementing the changes.

Scope Summary Chart

The Scope Summary Chart summarizes the scope of a project. For a baseball stadium, the Scope Summary Chart might look like:

Is in Project Scope	Is Not in Project Scope
Stadium	Dome
Home team clubhouse	Artificial turf
Visiting team clubhouse	Video scoreboard
Home team offices	Luxury boxes
Paved parking lot	Workout rooms
Natural grass	
Manual digital scoreboard	
Announcer's booth	

Scope Summary Chart for a Baseball Stadium

A Scope Summary template indicates with x's which items are in scope and which are not in scope. Project scope changes can also be indicated in this chart:

Project Characteristics	Is in Project Scope	Is Not in Project Scope	Project Scope Changes
Stadium	X		
Home team clubhouse	X		
Visiting team clubhouse	X		
Home team offices	X		
Paved parking lot	X		
Natural grass	X		
Manual digital scoreboard	X		
Announcer's booth	X		
Dome		X	
Artificial turf		X	
Video scoreboard		X	
Luxury boxes		X	
Workout rooms	X		Added scope 6/06/XX

Scope Summary Template for a Baseball Stadium

Module 2 Summary

We learned in Module 2 to:

- Distinguish between project organizations – functional, project, and matrix.
- Describe the leadership qualities of a project manager
- Understand the content of a Project Management Plan
- Define a project using the Project Charter and Scope Summary Chart

Individual Project Assignment

The first assignment for the Individual Project is to create a specific format of a Project Charter for your project that we will call a Project Success Chart™. Submit this assignment by the date shown in the Syllabus. Your Project Success Chart™ will consist of the following four factors vital to the success of your project:

1. Project objective
2. Project deliverables
3. Project measures of success
4. Scope Summary Chart

For example, the Project Success Chart™ for a house project might look like:

1. **Project objective** (what will be achieved by when)

Build a 3,000 sq ft house with 4 bedrooms and 3 ½ baths and a two-car garage plus driveway and landscaping of front yard by 6/01/XX.

2. **Project deliverables** (what will be delivered by when)

To be delivered by 6/01/XX:

- 3,000 sq ft house with 4 bedrooms and 3 ½ baths
- two-car garage
- front yard landscaping

3. **Measures of project success** list what will meet or exceed the expectation of each stakeholder:

Stakeholders	Measures of Project Success (what will meet or exceed the expectation of each stakeholder)
Owners	On budget, on time, to specifications
Owners' family	Family activity room, play area, swimming pool
Contractor	Make fair profit
Workers	Fair pay and benefits, good working conditions
Lender	On budget, on time

4. The **Scope Summary Chart** summarizes the scope of a project:

Project Characteristics	Is in Project Scope	Is Not in Project Scope	Project Scope Changes
4 bedrooms	X		
3 ½ baths	X		
Two-car garage	X		
Driveway	X		
Front yard landscaping	X		
Family activity room	X		
Back yard landscaping		X	
Play area	X		Added Scope 8/06/XX
Swimming pool	X		Added Scope 9/15/XX
Tennis court		X	

Discussion Postings

Post your discussion posting by the date shown in the Syllabus. Discussion postings must be a minimum of 100 words. In order to obtain full credit, review and comment on a minimum of two other students' discussion postings within two days after the scheduled posting date. Please respond to comments on your discussion postings.

The discussion posting for Module 2 is:

1. What types of organizational structure have you worked in – functional, matrix, or project? What were the advantages and disadvantages of each type of organizational structure?
2. What would you say is the most important quality of a project manager?
3. How have you judged the success of your projects? Have all of the stakeholders agreed with your assessment?
4. In projects that you have worked on or are familiar with, what were the least flexible elements – scope, schedule, or cost? What were the most flexible elements?