Module 1

Module Objectives

The objectives of this module are:

- Distinguish between projects and operations
- Become familiar with the life cycles of projects
- Understand the importance of prioritizing projects in an organization
- Understand the project management Knowledge Areas

Reading Assignment

PMBOK® Guide, Chapter 1

Project Characteristics

We can characterize organizational activities into two categories – operations and projects. Operations are the activities that we do repetitively. They are characterized by being routine and on-going, and are funded by existing budgets. They are usually performed within one functional organization.

Projects, on the other hand, are temporary one-time efforts with a beginning and an end. They have unique goals and objectives, and usually have a separate budget. *The Guide to the Project Management Body of Knowledge (PMBOK® Guide),* published by the Project Management Institute, defines a project as "a temporary endeavor undertaken to create a unique product, service, or result." Projects are usually performed across several functional organizational boundaries.

Project and operations are related. For example, the design and construction of a bridge is a project. However, after the bridge is constructed, it undergoes maintenance, which is an operational activity.

In the production sector, a project may be undertaken to develop a new or improved product. This product will then be manufactured, marketed, and sold, which are operational activities.

Similarly, in the service sector, a project may be undertaken to develop a new or improved service. This new or improved service will then be put into the standard offerings of the organization as an operational activity.

The Project Life Cycle

All projects have a life cycle, as discussed in Section 1.2.4.1 of the *PMBOK® Guide*. For example, a project life cycle may consist of the following phases:

Example Project Life Cycle

Particular types of projects may have more specific life cycles. Software projects usually have the following phases:

Software Project Life Cycle

Software maintenance is an operational activity, because it is on-going rather than having a beginning and an end.

In an effort to increase the speed at which projects are done, other life cycles are being implemented today. Software projects may have an adaptive/ agile life cycle, rather than a phased approach. The first build of a software application may have the Definition, Design, Code, Integration/Test, and Deployment phases listed above. After this build is assessed by the project stakeholders, subsequent builds are constructed using the same phases until the stakeholders are satisfied with the final release.

Project Portfolios

Projects in organizations are performed within the context of the project portfolio of the organization, as shown in Figure 1-3. Two of the negative influences of the project portfolio on a single project may be:

- There are too many projects for the organization to realistically perform in a given time period.
- The existing projects are not prioritized, or the priorities are not established at the organizational level and vary depending on the department. This results in confusion when the projects cross departmental boundaries, as they generally do.

In an organization which has multiple projects, it is very common for resources to multitask, or work on more than one task or project at a time. This is usually due to one of two reasons:

- No one has established the priorities of the projects
- Every project is considered a top priority

As a result of either not prioritizing projects or considering all projects top priority, resources have no indication as to which projects have the highest priority, so they work on several projects at once. This leads to the undesirable effect that projects take a much longer time to perform than if they were to be performed in isolation.

For larger projects, there are several methods of determining the Importance of the projects to the organization. For example, there are monetary techniques, which might evaluate the Net Present Value, Expected Commercial Value, or Payback Period associated with each project.

More general techniques involve Scoring Models, with multiple criteria, which may include the strategic fit, market attractiveness, and probability of technical success in addition to the financial benefit of the project. This type of weighted matrix can be used to prioritize larger projects within the organization.

These methods may not be applicable to the smaller projects that many organizations perform because we may not have quantitative data for these projects. How then should we prioritize our smaller projects?

Covey popularized the Importance/Urgency matrix in the book *First Things First*. This matrix, developed for prioritizing daily tasks, divides tasks between those that are Urgent and those

that are Not Urgent, and tasks that are Important from those that are Not Important. This division produces a matrix with four quadrants, as shown below:

Quadrant I **Urgent** **and Important**	**Quadrant II** **Important** **but Not Urgent**
Quadrant III **Urgent** **but Not Important**	**Quadrant IV** **Not Urgent** **and Not Important**

The Importance/Urgency Matrix

Ideally, the daily tasks should be done in the order of the Quadrants:

- Quadrant I – the Urgent and Important tasks, then
- Quadrant II – the Important but Not Urgent tasks, then
- Quadrant III – the Urgent but Not Important tasks, and finally
- Quadrant IV – the Not Urgent and Not Important tasks.

This method cannot be applied directly to projects, because projects are usually somewhat Urgent, and rarely Not Important. This suggests that we need to extend this method to apply to projects. One way to do this is to increase the number of divisions that we consider in categorizing our projects. For example, we could divide projects into very high, high, medium-high, medium, and low in terms of both Importance and Urgency.

The Urgency associated with the project may be evaluated in terms of desired project completion dates. Projects that have a more near-term market need should have higher priority than those with equal Importance, but not as near-term a market need.

Smaller projects will probably be evaluated using qualitative criteria rather than quantitative criteria for both the Importance and Urgency measures. We can assign values to these measures. For example, if we would like the Importance measure to have the same weight as the Urgency measure, we could assign the following values:

Ranking	Importance Value	Urgency Value
Very high	5	5
High	4	4
Med-high	3	3
Medium	2	2
Low	1	1

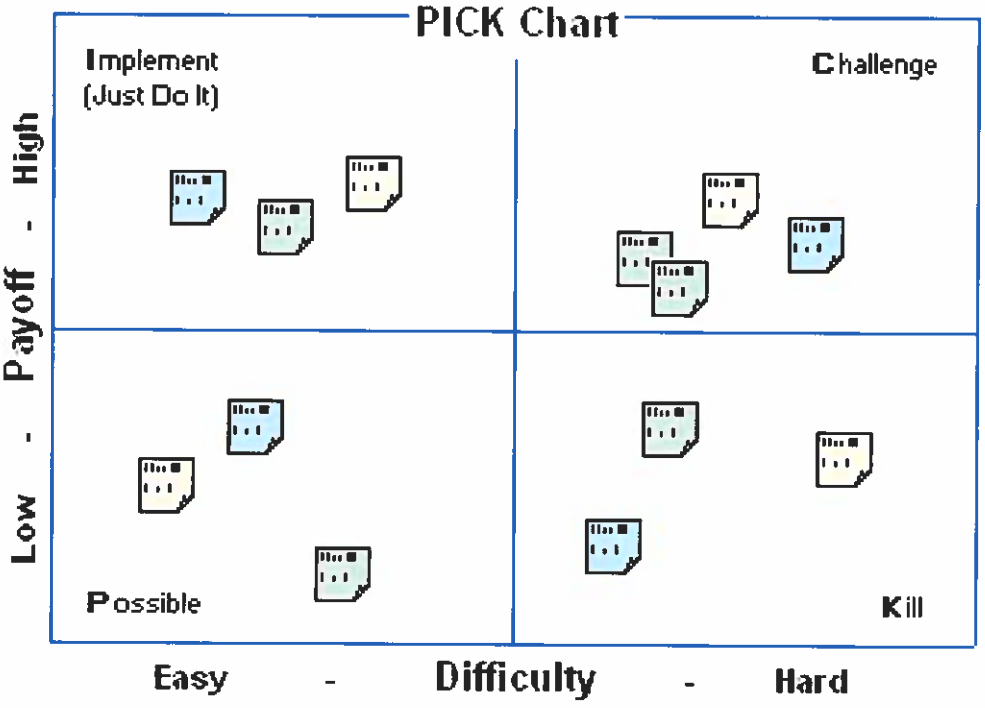
Importance/Urgency Values

How do we use the values of Importance and Urgency to prioritize our projects? We can define a Priority Index = Importance value x Urgency value. For example, if the Importance of a project is medium and the Urgency is very high, the Priority Index would be 2 x 5 = 10. We can list all of the projects in our organization and determine the Priority as shown in the following example:

Project	Importance/value	Urgency/value	Priority Index	Priority
1	Medium / 2	Very high / 5	2 × 5 = 10	2
2	High / 4	High / 4	4 × 4 = 16	1
3	Med-high / 3	Med-high / 3	3 × 3 = 9	3

Prioritizing Projects Using the Importance/Urgency Values

A second method of prioritizing projects uses the PICK Chart. The PICK (an acronym for the Possible/Implement/Challenge/Kill quadrants) Chart shows the Payoff/benefit vs. the Implementation difficulty.



PICK Chart (http://www.vertex42.com/ExcelTemplates/PICK-chart.html)

We can calculate a priority score using the following formulas:

- 5 – payoff/benefit will probably be high.
- 3 – payoff/benefit will probably be medium.
- 1 – payoff/benefit will probably be low.

- 5 – implementation will probably be easy.
- 3 – implementation will probably be medium.
- 1 – implementation will probably be hard

Priority score = Payoff/benefit rating x Difficulty rating

An example of project priority calculations is shown as follows:

Work	Payoff/ Benefit	Ease of Implementation	Priority Score	Priority
1	4	2	8	4
2	5	1	5	10
3	4	2	8	4
4	3	2	6	8
5	4	3	12	3
6	5	3	15	2
7	4	2	8	4
8	3	2	6	8
9	4	2	8	4
10	4	4	16	1

Summary of Project Priority Calculations

In conclusion, scheduling projects in a multiple project environment is difficult because projects are usually not prioritized. As a result, resources multitask on several projects, extending the duration of all projects and limiting the number of projects that an organization can perform. After prioritizing the projects within an organization, multitasking can be minimized. With multitasking minimized, project durations can be reduced and more projects can be performed by the organization.

Process Groups

As listed in Section 1.2.4.5, the *PMBOK® Guide* defines five project management Process Groups that are applicable to every project. These five Process Groups are:

1. Initiating Process Group – defines and authorizes the project or project phase
2. Planning Process Group – defines and refines the scope and objectives, and plans the course of action required to attain the objectives that the project was undertaken to achieve
3. Executing Process Group – carries out the work defined in the project management plan
4. Monitoring and Controlling Process Group – tracks, reviews, and regulates the progress and performance of the project
5. Closing Process Group – finalizes all activities to formally close the project or project phase

Project Management Knowledge Areas

As listed in Section 1.2.4.6, the Project Management Institute has defined ten project management Knowledge Areas. These are described in Chapters 4 through 13 of the *PMBOK® Guide*. These ten Knowledge Areas are defined as:

1. Project Integration Management – includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities.
2. Project Scope Management – includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.
3. Project Schedule Management – includes the processes required to manage the timely completion of the project.
4. Project Cost Management – includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so the project can be completed within the approved budget.
5. Project Quality Management – includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements, in order to meeting stakeholders' expectations.
6. Project Resource Management – includes the processes to identify, acquire, and manage the resources for the successful completion of the project.

7. Project Communications Management – includes the processes required to ensure timely and appropriate planning, collection, distribution, storage, retrieval, management, control, monitoring, and ultimate disposition of project information.

8. Project Risk Management – includes the processes of conducting risk management planning, identification, analysis, response implementation, and monitoring risk on a project.

9. Project Procurement Management – includes the processes to purchase or acquire the products, services, or results needed from outside the project team.

10. Project Stakeholder Management– includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

The relationship between the project management Process Groups and the project management Knowledge Areas is summarized in Table 1-4 of the *PMBOK® Guide*.

Module 1 Summary

We learned in Module 1 to:

- Distinguish between projects and operations. Operations are the activities that we do repetitively. Projects, on the other hand, are temporary one-time efforts with a beginning and an end. They have unique goals and objectives, and usually have a separate budget.

- Become familiar with the life cycles of projects, such as the Defining, Planning, Executing, and Delivering phases.

- Understand the importance of prioritizing projects in an organization. As a result of either not prioritizing projects or considering all projects top priority, resources have no indication as to which projects have the highest priority, so they work on several projects at once. This leads to the undesirable effect that projects take a much longer time to perform than if they were to be performed in isolation. After prioritizing the projects within an organization, multitasking can be minimized. With multitasking minimized, project durations can be reduced and more projects can be performed by the organization.

- Distinguish the characteristics of the project management Knowledge Areas.

Individual Project

The purpose of the Individual Project is to give you practice in the project planning and scheduling process. You may use a real project, or you may make up a project. Some guidelines for choosing a project are:

- The total project budget should be more than $50,000
- The project duration should be at least 30 days
- The project should involve more than one function

Some examples of projects that have been used previously are:

- Office automation
- Volunteer service/fund raising
- Data processing system
- Waste management
- Adult education
- Synthetic fuels development
- Political campaign
- Neighborhood beautification
- Medical system installation
- New product development
- YMCA/YWCA fitness projects
- Water quality testing
- Wedding
- Company relocation
- Building a home

Select a project of your choice. The first assignment on this Individual Project will be given in Module 2.

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 1 is:

1. Describe one or more projects that you are involved in, either in your business and/or personal life.

2. Create table(s) similar to the tables below. Prioritize your projects (business and/or personal) using both of the methods described in this module, showing your calculations. What do you think of the results?

Project	Importance/value	Urgency/value	Priority Index	Priority
1	Medium / 2	Very high / 5	2 × 5 = 10	2
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Work	Payoff/ Benefit	Ease of Implementation	Priority Score	Priority
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5	4	3	12	3
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7	4	2	8	4
8	3	2	6	8
9	4	2	8	4
10	4	4	16	1

3. What effect does multitasking between tasks or multiple projects, or multitasking between projects and operations have on your ability to finish your projects on time?