



**University of Thi-Qar/ College of Engineering**

**Petroleum and Gas Eng. Dept.\ 4<sup>th</sup> Year**

# **PROJECT MANAGEMENT AND PLANNING**

*Lecture 3*

Lecturer

***Dr. IQBAL KHALAF AL-KHAZALI***

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# Project Integration Management

## Project Integration Management Needs

- The processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups.
- Making choices about resource allocation, making trade-offs among competing objectives and alternatives, and managing the interdependencies among the project management Knowledge Areas.
- The need for Project Integration Management is necessary in situations where individual processes interact. For example, a cost estimate needed for a contingency plan involves integrating the processes in the Project Cost, Time, and Risk Management Knowledge Areas.
- Project Integration Management also includes the activities needed to manage project documents to ensure consistency with the project management plan and product, service, or capability deliverables.

Project Integration Management processes, which are as follows:

**1. Develop Project Charter**— The process of developing a document that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities.

**2. Develop Project Management Plan**— The process of defining, preparing, and coordinating all subsidiary plans and integrating them into a comprehensive project management plan. The project's integrated baselines and subsidiary plans may be included within the project management plan.

**3. Direct and Manage Project Work**—The process of leading and performing the work defined in the project management plan and implementing approved changes to achieve the project's objectives.

**4. Monitor and Control Project Work**—The process of tracking, reviewing, and reporting project progress against the performance objectives defined in the project management plan.

**5. Perform Integrated Change Control**—The process of reviewing all change requests; approving changes and managing changes to deliverables, organizational process assets, project documents, and the project management plan; and communicating their disposition.

**6. Close Project or Phase**—The process of finalizing all activities across all of the Project Management Process Groups to formally complete the phase or project.

## 1 .Develop Project Charter

Develop Project Charter is the process of developing a document that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities. The inputs, tools and techniques, and outputs for this process are shown in Figure `1. Figure 2 depicts the data flow diagram of the process.



**Figure 1. Develop Project Charter: Inputs, Tools and Techniques, and Outputs**

### 1.1 Develop Project Charter: Inputs

#### 1.1.1 Project Statement of Work

The project statement of work (SOW) is a narrative description of products, services, or results to be delivered by a project. The SOW references the following:

- A. **Business need.**
- B. **Product scope description.**
- C. **Strategic plan.**

#### 1.1.2 Business Case

The business case is created as a result of one or more of the following:

1. Market demand (e.g., a car company authorizing a project to build more fuel-efficient cars in response to gasoline shortages),
2. Technological advance (e.g., an airline authorizing a new project to develop electronic tickets instead of paper tickets based on technological advances),
3. Legal requirement (e.g., a paint manufacturer authorizing a project to establish guidelines for handling toxic materials),

4. Ecological impacts (e.g., a company authorizing a project to lessen its environmental impact), or
5. Social need

### **1.1.3 Agreements**

Agreements are used to define initial intentions for a project. Agreements may take the form of contracts, memorandums of understanding (MOUs), service level agreements (SLA), letter of agreements, letters of intent, verbal agreements, email, or other written agreements. Typically, a contract is used when a project is being performed for an external customer.

### **1.1.4 Enterprise Environmental Factors**

The enterprise environmental factors that can influence the Develop Project Charter process include, but are not limited to:

1. Governmental standards, industry standards, or regulations (e.g. codes of conduct, quality standards, or worker protection standards),
2. Organizational culture and structure, and
3. Marketplace conditions.

## **1.2 Develop Project Charter: Tools and Techniques**

### **1.2.1 Expert Judgment**

Such expertise is provided by any group or individual with specialized knowledge or training and is available from many sources, including:

- Other units within the organization,
- Consultants,
- Stakeholders, including customers or sponsors,
- Professional and technical associations,
- Industry groups,
- Project management office (PMO).

### **1.2.2 Facilitation Techniques**

Facilitation techniques have broad application within project management processes and guide the development of the project charter. conflict resolution, problem solving, and meeting

management are examples of key techniques used by facilitators to help teams and individuals accomplish project activities.

### 1.3 Develop Project Charter: Outputs

- Project purpose or justification,
- Measurable project objectives and related success criteria,
- High-level requirements,
  
- Assumptions and constraints,
- High-level project description and boundaries,
- High-level risks,
- Summary milestone schedule,
- Summary budget,
- Stakeholder list,
- Project approval requirements (i.e., what constitutes project success, who decides the project is successful, and who signs off on the project),
- Assigned project manager, responsibility, and authority level, and
- Name and authority of the sponsor or other person(s) authorizing the project charter.

## 2. Develop Project Management Plan

Develop Project Management Plan is the process of defining, preparing, and coordinating all subsidiary plans and integrating them into a comprehensive project management plan. The key benefit of this process is a central document that defines the basis of all project work. The inputs, tools and techniques, and outputs for this process are depicted in Figure-2.



Figure 4-3. Develop Project Charter Data Flow Diagram

Figure 2. Develop Project Charter Data Flow Diagram

### 2.1 Develop Project Management Plan: Inputs

### **2.1.1 Project Charter**

Described in Section 4.1.3.1. The size of the project charter varies depending on the complexity of the project and the information known at the time of its creation. At a minimum, the project charter should define the high-level boundaries of the project. The project manager uses the project charter as the starting point for initial planning throughout the Initiating Process Group.

### **2.1.2 Outputs from Other Processes**

Any baselines and subsidiary plans that are an output from other planning processes are inputs to this process. In addition, changes to these documents may necessitate updates to the project management plan.

### **2.1.3 Enterprise Environmental Factors**

Described in lecture 2 2 The enterprise environmental factors that can influence the Develop Project Management Plan process include, but are not limited to:

- Governmental or industry standards;
- Project management information system (e.g., an automated tool, such as a scheduling software tool, a configuration management system, an information collection and distribution system, or web interfaces to other online automated systems);
- Organizational structure, culture, management practices, and sustainability;
- Infrastructure (e.g., existing facilities and capital equipment); and
- Personnel administration (e.g., hiring and termination guidelines, employee performance reviews, and employee development and training records).

### **2.1.4 Organizational Process Assets**

Described in lecture 2.

## **2.2 Develop Project Management Plan: Tools and Techniques**

### **2.2.1 Expert Judgment**

When developing the project management plan, expert judgment is utilized to:

- Tailor the process to meet the project needs,

- Develop technical and management details to be included in the project management plan,
- Determine resources and skill levels needed to perform project work,
- Define the level of configuration management to apply on the project,
- Determine which project documents will be subject to the formal change control process, and
- Prioritize the work on the project to ensure the project resources are allocated to the appropriate work at the appropriate time.

### **2.2.2 Facilitation Techniques**

Described in Section 1.2.2.

### **2.3 Develop Project Management Plan: Outputs**

The project management plan is the document that describes how the project will be executed, monitored, and controlled. It integrates and consolidates all of the subsidiary plans and baselines from the planning processes. Project baselines include, but are not limited to:

- Scope baseline,
- Schedule baseline, and
- Cost baseline.

Subsidiary plans include, but are not limited to:

- Scope management plan
- Requirements management plan
- Schedule management plan
- Cost management plan
- Quality management plan
- Process improvement plan
- Human resource management plan
- Communications management plan
- Risk management plan
- Procurement management plan
- Stakeholder management plan

### **3. Direct and Manage Project Work**

Direct and Manage Project Work is the process of leading and performing the work defined in the project management plan and implementing approved changes to achieve the project's objectives. The key benefit of this process is that it provides overall management of the project work. The inputs, tools and techniques, and outputs of this process are depicted in Figure 3.



**Figure 4-6. Direct and Manage Project Work: Inputs, Tools and Techniques, and Outputs**

**Figure 3. Direct and Manage Project Work: Inputs, Tools and Techniques, and Outputs**

Direct and Manage Project Work activities include, but are not limited to:

1. Perform activities to accomplish project objectives;
2. Create project deliverables to meet the planned project work;
3. Provide, train, and manage the team members assigned to the project;
4. Obtain, manage, and use resources including materials, tools, equipment, and facilities;
5. Implement the planned methods and standards;
6. Establish and manage project communication channels, both external and internal to the project team;
7. Generate work performance data, such as cost, schedule, technical and quality progress, and status to
8. facilitate forecasting;
9. Issue change requests and implement approved changes into the project's scope, plans, and environment;
10. Manage risks and implement risk response activities;
11. Manage sellers and suppliers;
12. Manage stakeholders and their engagement; and
13. Collect and document lessons learned and implement approved process improvement activities.



Direct and Manage Project Work also requires review of the impact of all project changes and the implementation of approved changes:

- a. Corrective action—An intentional activity that realigns the performance of the project work with the project management plan;
- b. Preventive action—An intentional activity that ensures the future performance of the project work is aligned with the project management plan; and/or
- c. Defect repair—An intentional activity to modify a nonconforming product or product component.

#### **4. Monitor and Control Project Work**

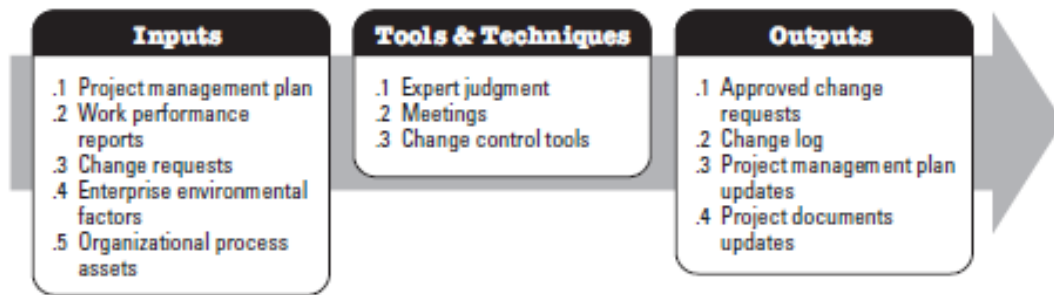
Monitor and Control Project Work is the process of tracking, reviewing, and reporting the progress to meet the performance objectives defined in the project management plan. The key benefit of this process is that it allows stakeholders to understand the current state of the project, the steps taken, and budget, schedule, and scope forecasts.

The Monitor and Control Project Work process is concerned with:

- ❖ Comparing actual project performance against the project management plan;
- ❖ Assessing performance to determine whether any corrective or preventive actions are indicated, and then recommending those actions as necessary;
- ❖ Identifying new risks and analyzing, tracking, and monitoring existing project risks to make sure the risks are identified, their status is reported, and that appropriate risk response plans are being executed;
- ❖ Maintaining an accurate, timely information base concerning the project's product(s) and their associated documentation through project completion;
- ❖ Providing information to support status reporting, progress measurement, and forecasting;
- ❖ Providing forecasts to update current cost and current schedule information;
- ❖ Monitoring implementation of approved changes as they occur; and
- ❖ Providing appropriate reporting on project progress and status to program management when the project is part of an overall program.

## 5. Perform Integrated Change Control

Perform Integrated Change Control is the process of reviewing all change requests; approving changes and managing changes to deliverables, organizational process assets, project documents, and the project management plan; and communicating their disposition. It reviews all requests for changes or modifications to project documents, deliverables, baselines, or the project management plan and approves or rejects the changes. The key benefit of this process is that it allows for documented changes within the project to be considered in an integrated fashion while reducing project risk, which often arises from changes made without consideration to the overall project objectives or plans. The inputs, tools and techniques, and outputs of this process are depicted in Figure 4:



**Figure 4. Perform Integrated Change Control: Inputs, Tools & Techniques, and Outputs**

## 6. Close Project or Phase

Close Project or Phase is the process of finalizing all activities across all of the Project Management Process Groups to formally complete the project or phase. The key benefit of this process is that it provides lessons learned, the formal ending of project work, and the release of organization resources to pursue new endeavors. The inputs, tools and techniques, and outputs of this process are depicted in Figure 4-5.



**Figure 5. Close Project or Phase: Inputs, Tools & Techniques, and Outputs**

