



SUSCOS



**2011**

# **Business economics and entrepreneurship**

**Claudiu Albuлесcu**

**Lecture 4: Project management – generalities (03/05/2017)**

European Erasmus Mundus Master Course

**Sustainable Constructions**

**under Natural Hazards and Catastrophic Events**

520121-1-2011-1-CZ-ERA MUNDUS-EMMC

# LIST OF LECTURES

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## Lectures

- L1 Trends and challenges for the construction industry
- L2 Business strategies and business development in construction companies
- L3 Financial management in construction companies
- L4 Project management – generalities
- L5 Project management – support activities
- L6 Project management systems applied in constructions
- L7 Entrepreneurship issues
- L8 Risk management in construction company
- L9 Standard contracts in civil engineering
- L10 Summary and discussion of the exam questions

## Applications

- A1 Examples of financial and cash flow analyses
- A2 General presentation of the case study (WTP – Hunedoara)
- A3 Financial and cash flow analysis (case study: WTP – Hunedoara)
- A4 Project's presentation
- A5 Project's presentation

# L4 PROJECT MANAGEMENT – GENERALITIES

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## OBJECTIVES

- Student is familiar with the **management functions**
- Student has knowledge about different **type of managers** and negotiation techniques
- Student understands what **project management** means
- Student is familiar with the **construction phases** and the main activities performed in these phases
- Student knows the main **tasks** during the **process execution**

# L4 PROJECT MANAGEMENT – GENERALITIES

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## TOPICS

### I. GENERAL MANAGEMENT ISSUES

- Definition
- Functions
- Types of managers
- Negotiation techniques

### II. INTRODUCTION TO PROJECT MANAGEMENT

- Project management and construction industry
- Construction phases
- Project management responsibilities
- Project execution processes

# I. GENERAL MANAGEMENT ISSUES

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## TOPICS

- Definition
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# I. GENERAL MANAGEMENT ISSUES

## Definition

- **Management** in business and organizations is the function that coordinates the efforts of people to accomplish goals and objectives using available resources efficiently and effectively.
- **Management** involves the manipulation of the human capital of an enterprise to contribute to the success of the enterprise.
- **Management** is the act, manner, or practice of managing, handling, supervision, or control.
- The **size of management** can range from one person in a small organization to hundreds or thousands of managers in multinational companies.



# I. GENERAL MANAGEMENT ISSUES

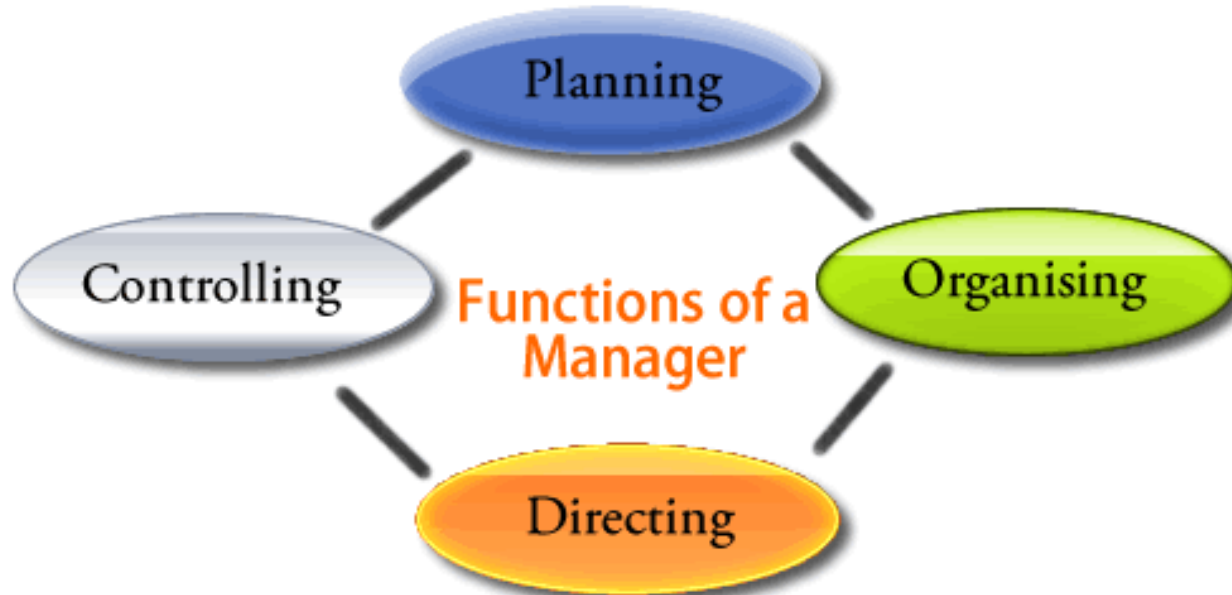
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## TOPICS

- Definition
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# I. GENERAL MANAGEMENT ISSUES

## Functions



Planning	Organizing	Leading	Controlling
<ul style="list-style-type: none"> <li>1. Vision &amp; Mission</li> <li>2. Strategizing</li> <li>3. Goals &amp; Objectives</li> </ul>	<ul style="list-style-type: none"> <li>1. Organization Design</li> <li>2. Culture</li> <li>3. Social Networks</li> </ul>	<ul style="list-style-type: none"> <li>1. Leadership</li> <li>2. Decision Making</li> <li>3. Communications</li> <li>4. Groups/Teams</li> <li>5. Motivation</li> </ul>	<ul style="list-style-type: none"> <li>1. Systems/Processes</li> <li>2. Strategic Human Resources</li> </ul>

# I. GENERAL MANAGEMENT ISSUES

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## Functions

### 1. Planning

- **Planning** is the **function of management** that involves setting objectives and determining a course of action for achieving those objectives.
- Planning is a process consisting of several **steps**:
  - environmental scanning (economic conditions, competitors, customers)
  - establish objectives
  - identify alternative courses of action
  - make decisions about the best courses of action
  - constantly evaluate the success of their plans
- **Strategic planning** involves analyzing competitive opportunities and threats, as well as the strengths and weaknesses of the organization, and then determining how to position the organization to compete effectively in their environment.
- **Tactical planning** is intermediate-range (one to three years) planning that is designed to develop relatively concrete and specific means to implement the strategic plan.
- **Operational planning** is short-range (less than a year) planning that is designed to develop specific action steps that support the strategic and tactical plans.



# I. GENERAL MANAGEMENT ISSUES

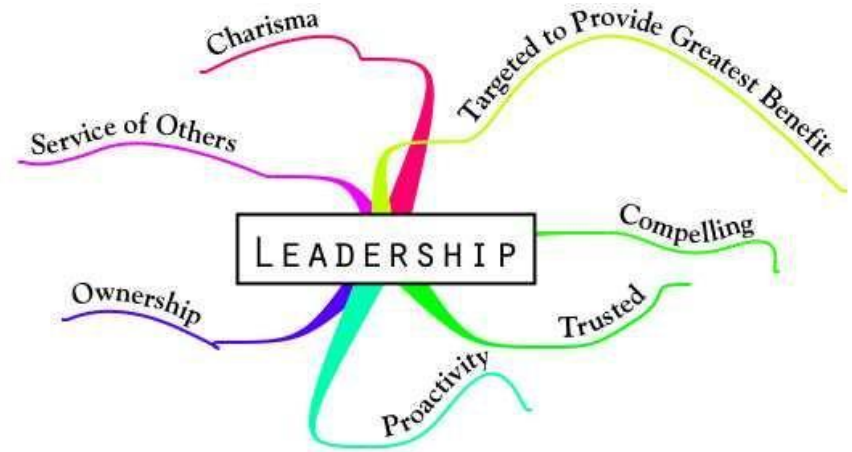
## Functions

### 3. Leading

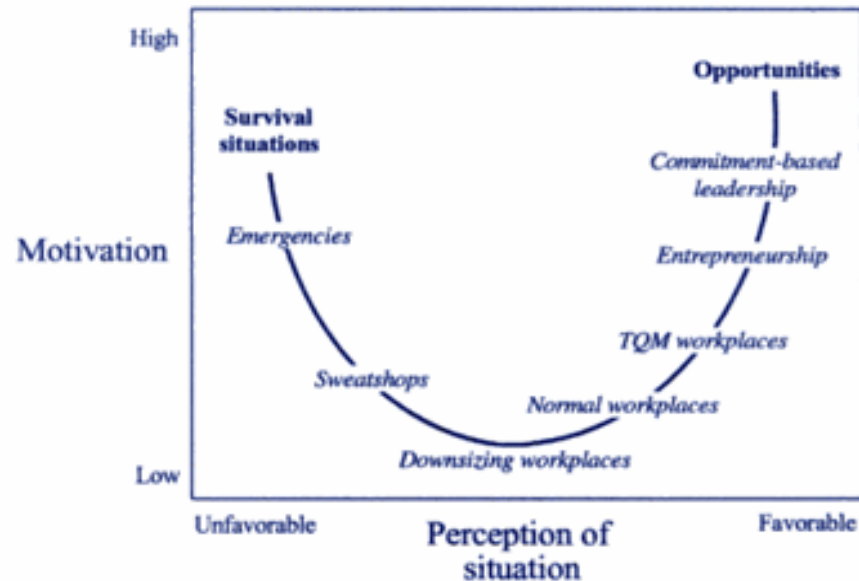
- **Leading involves** the social and informal sources of influence that you use to inspire action taken by others.

*!!! If managers are effective leaders, their subordinates will be enthusiastic about exerting effort to attain organizational objectives.*

- **To become effective at leading**, managers must first **understand** their subordinates' personalities, values, attitudes, and emotions.
- **Studies of motivation** and motivation theory provide important information about the ways in which workers can be energized



### The Motivation Curve



# I. GENERAL MANAGEMENT ISSUES

## Functions

### 4. Controlling

- **Controlling** involves ensuring that performance does not deviate from **standards**.
- Three **steps**
  - establishing performance standards
  - comparing actual performance against standards
  - taking corrective action when necessary
- The **measurement of performance**: financial statements (i.e. profit), sales reports, production results, customer satisfaction

*!!! This function does not imply that managers should attempt to control or to manipulate the personalities, values, attitudes, or emotions of their subordinates.*



# I. GENERAL MANAGEMENT ISSUES

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# I. GENERAL MANAGEMENT ISSUES

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## Types of managers

- **Problem-Solving Manager.** Is task-driven and focused on achieving goals.
- **Autocratic (Pitchfork) Manager .** Heavy and often controlling hand: demanding progress, forcing accountability, prodding and pushing for results. 
- **Consultative Manager.** Decisions do take into account the best interests of the employees as well as the business. Act as a leader.
- **Persuasive Manager.** Share some characteristics with that of an autocratic manager but the persuasive manager will spend more time working with their subordinates in order to try to convince them of the benefits of the decision that have been made.
- **Democratic Manager.** Allows the employees to take part in decision-making: therefore everything is agreed upon by the majority.
- **Chaotic Manager.** Gives the employees total control over the decision making process.

# I. GENERAL MANAGEMENT ISSUES

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# I. GENERAL MANAGEMENT ISSUES

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## Negotiation styles

- **Accommodating.** Individuals who enjoy solving the other party's problems and preserving personal relationships. Accommodators are sensitive to the emotional states, body language, and verbal signals of the other parties.
- **Avoiding.** When negotiating, avoiders tend to defer and dodge the confrontational aspects of negotiating; however, they may be perceived as tactful and diplomatic.
- **Collaborating:** Individuals who enjoy negotiations that involve solving tough problems in creative ways.
- **Competing:** Individuals who enjoy negotiations because they present an opportunity to win something. Competitive negotiators have strong instincts for all aspects of negotiating and are often strategic.
- **Compromising:** Individuals who are eager to close the deal by doing what is fair and equal for all parties involved in the negotiation.

# L4 Project management – generalities

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### II. INTRODUCTION TO PROJECT MANAGEMENT

- Project management and construction industry
- Construction phases
- Project management responsibilities
- Project execution processes

# II. INTRODUCTION TO PROJECT MANAGEMENT

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## TOPICS

- Project management and construction industry
- Construction phases
- Project management responsibilities
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<http://ocw.mit.edu/courses/civil-and-environmental-engineering/1-040-project-management-spring-2009/lecture-notes/>

# II. INTRODUCTION TO PROJECT MANAGEMENT

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## Project management and construction industry

### Project definition

- A **temporary** piece of work with a finite end date undertaken to create a unique product or service.
- Projects **differ from operations**, because operations are continuous and repeating.
- **Planning, execution and controlling** of project is the primary field of project management.
- **Steps:** 1. Preliminary Project Proposals; 2. Project Details; 3. Deliverables.

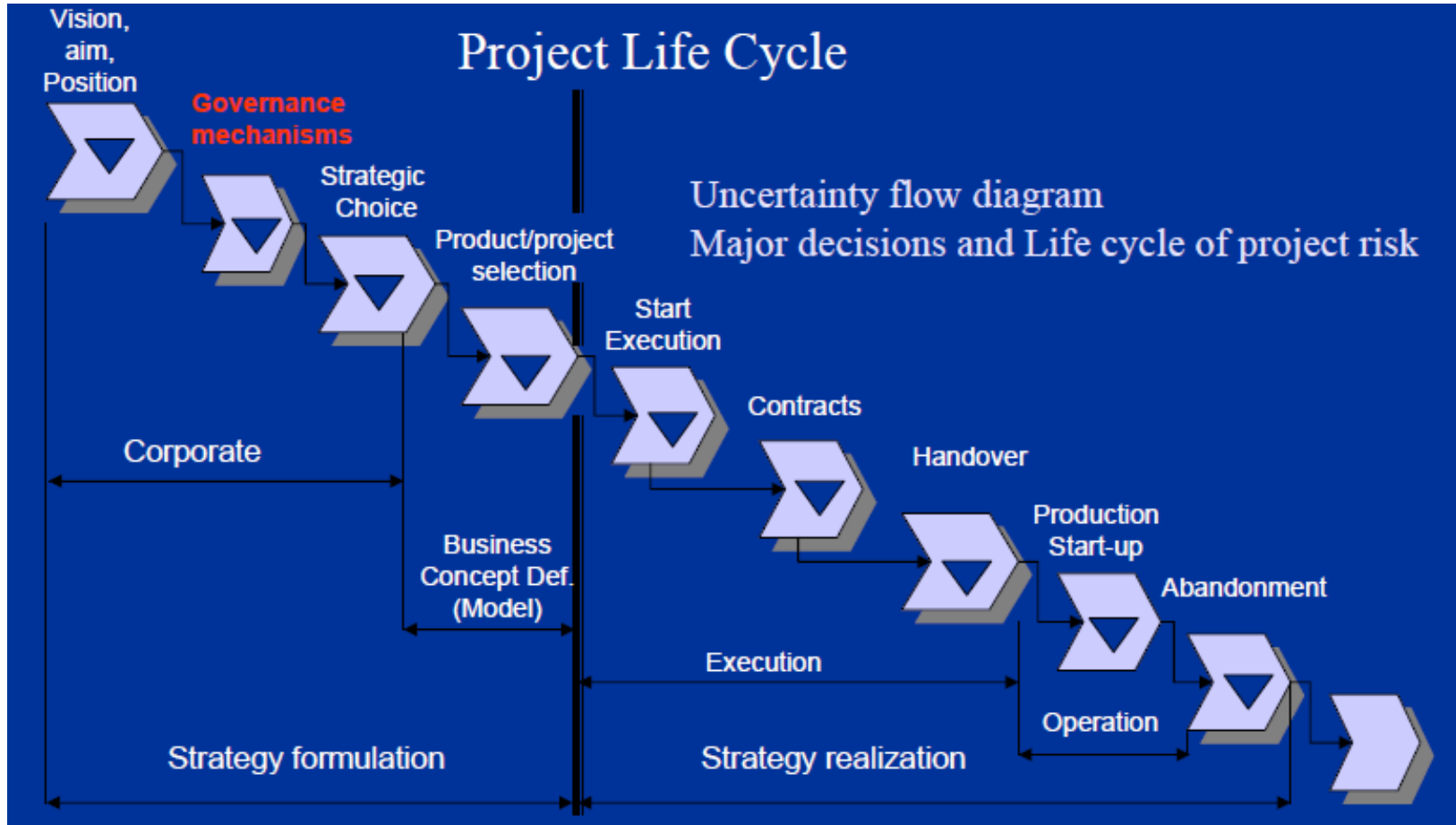
### Project management (PM) definition

- Project Management implies the **applications of knowledge, skills tools and techniques** to project activities to meet project requirements.
- Project Management: the planning, monitoring and control of **all aspects of the project**.
- Project Management is the complete set of tasks, techniques, tools, applied during **Project Execution**

# II. INTRODUCTION TO PROJECT MANAGEMENT

## Project management and construction industry

### Project Life cycle



# II. INTRODUCTION TO PROJECT MANAGEMENT

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## Project management and construction industry

### Attributes of Construction Projects

- Specific parameters (e.g., budget)
- Finite durations
- Located away from company (in construction)
- Each project requires separate management
- Single source of responsibility
- Separate cost accounting element

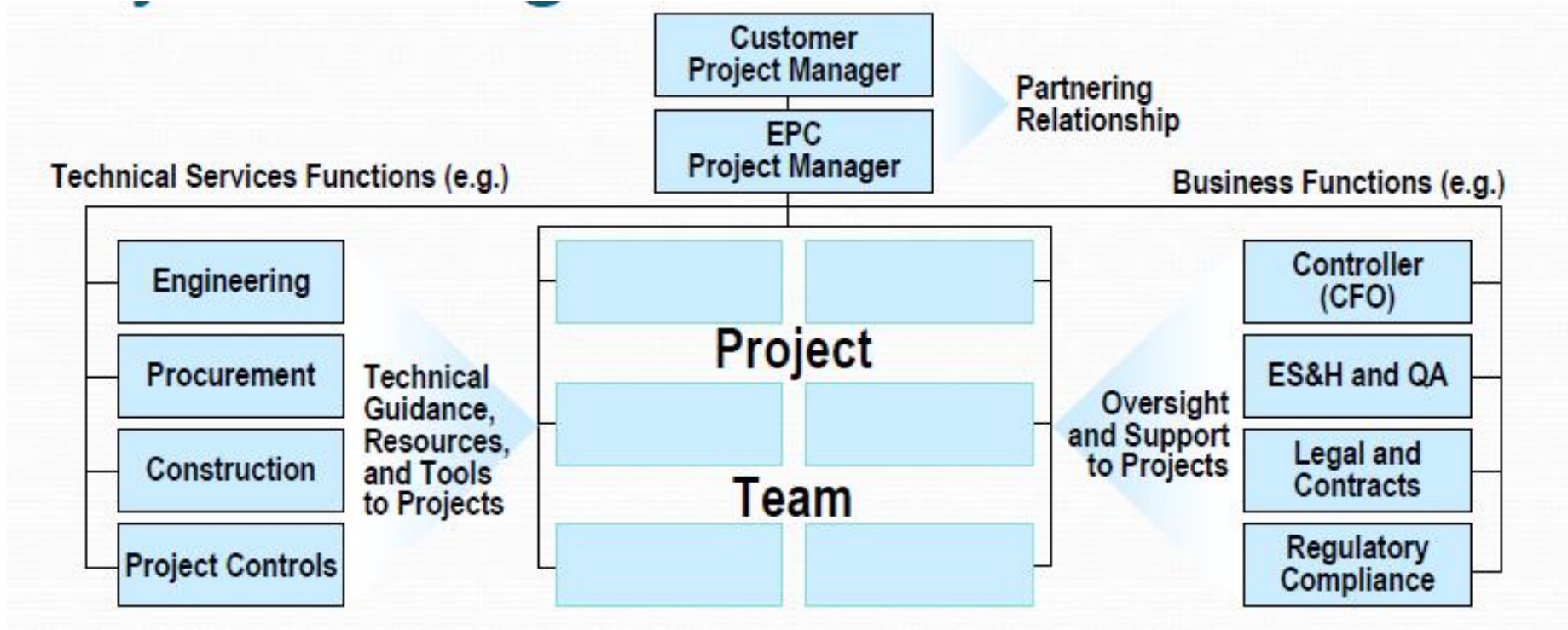
### Needs to be cost-effective

- Personnel varies according to project
- Project duration, size, and contract type
- Multiple areas of work and contracts
- Reporting requirements to the customer
- Extent of cost control and reporting required
- Public versus private work and market

# II. INTRODUCTION TO PROJECT MANAGEMENT

## Project management and construction industry

### PM structure



# II. INTRODUCTION TO PROJECT MANAGEMENT

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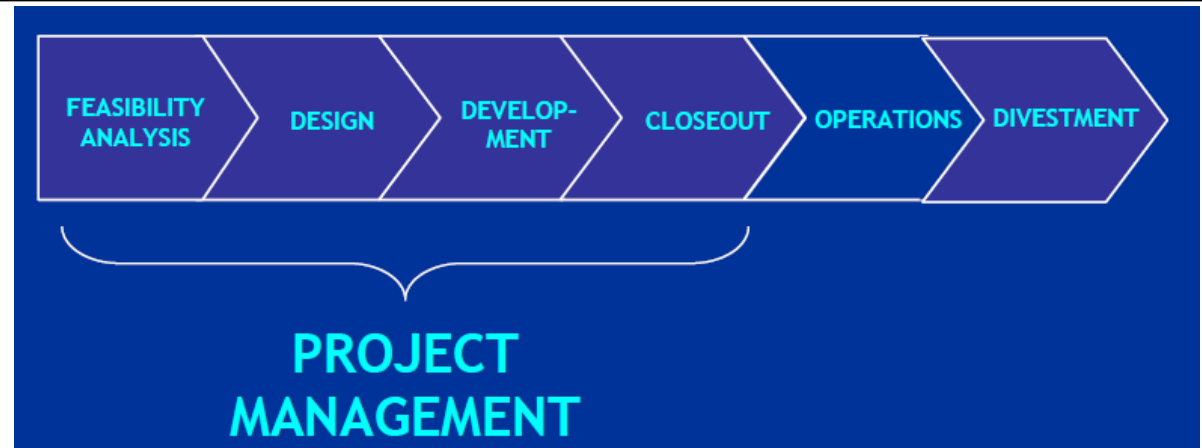
## TOPICS

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# II. INTRODUCTION TO PROJECT MANAGEMENT

## Construction phases

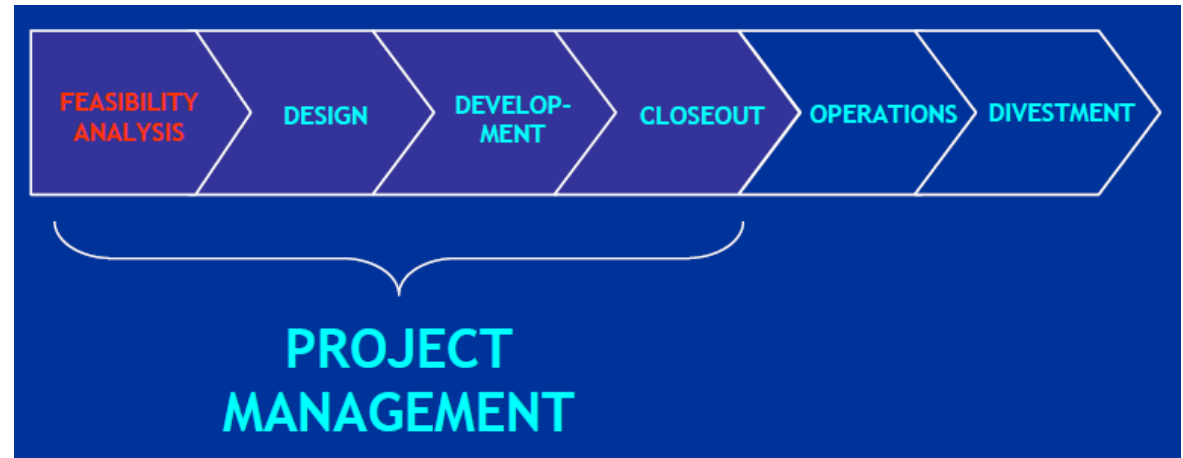


- **Strategic Planning**, or conceptualization The need for a project is identified, so that specific objectives are achieved. Alternative projects are examined (Feasibility study).
- **System Design**. The approach for addressing the organization's strategic concerns is established during systems design (specific technical specifications).
- **Detailed Design** is the phase in which the optimal systems design is translated into a detailed technical implementation scheme
- **Development** refers to the implementation of the detailed design
- **Operations and Lifecycle Support** represents the period during which the project yields benefits to the organization
- **Divestment**. The initial design again determines the potential for proper divestment in the context of the sociopolitical and natural environment

# II. INTRODUCTION TO PROJECT MANAGEMENT

## Construction phases

### Feasibility Studies and Preliminaries

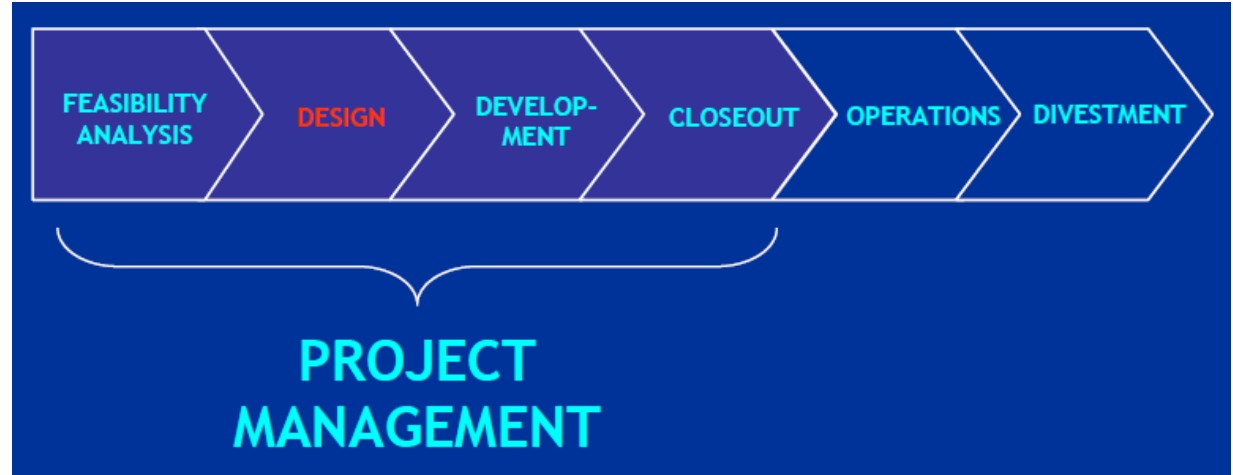


- Understanding project finance and evaluation
  - Helps understand economic challenges faced by owner and contractor and contractor
- Risk management
- Deciding on fundamentals of contract
  - Delivery systems (organizational method)
  - Contract type (how pay?)
  - Award method (how decide who hired?)

# II. INTRODUCTION TO PROJECT MANAGEMENT

## Construction phases

### Design Phase



- Estimation
  - Successive estimates produced
- Planning & Scheduling
  - Web Scheduling
  - Deterministic & probabilistic scheduling
  - Resource planning
  - Simulation

# II. INTRODUCTION TO PROJECT MANAGEMENT

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## TOPICS

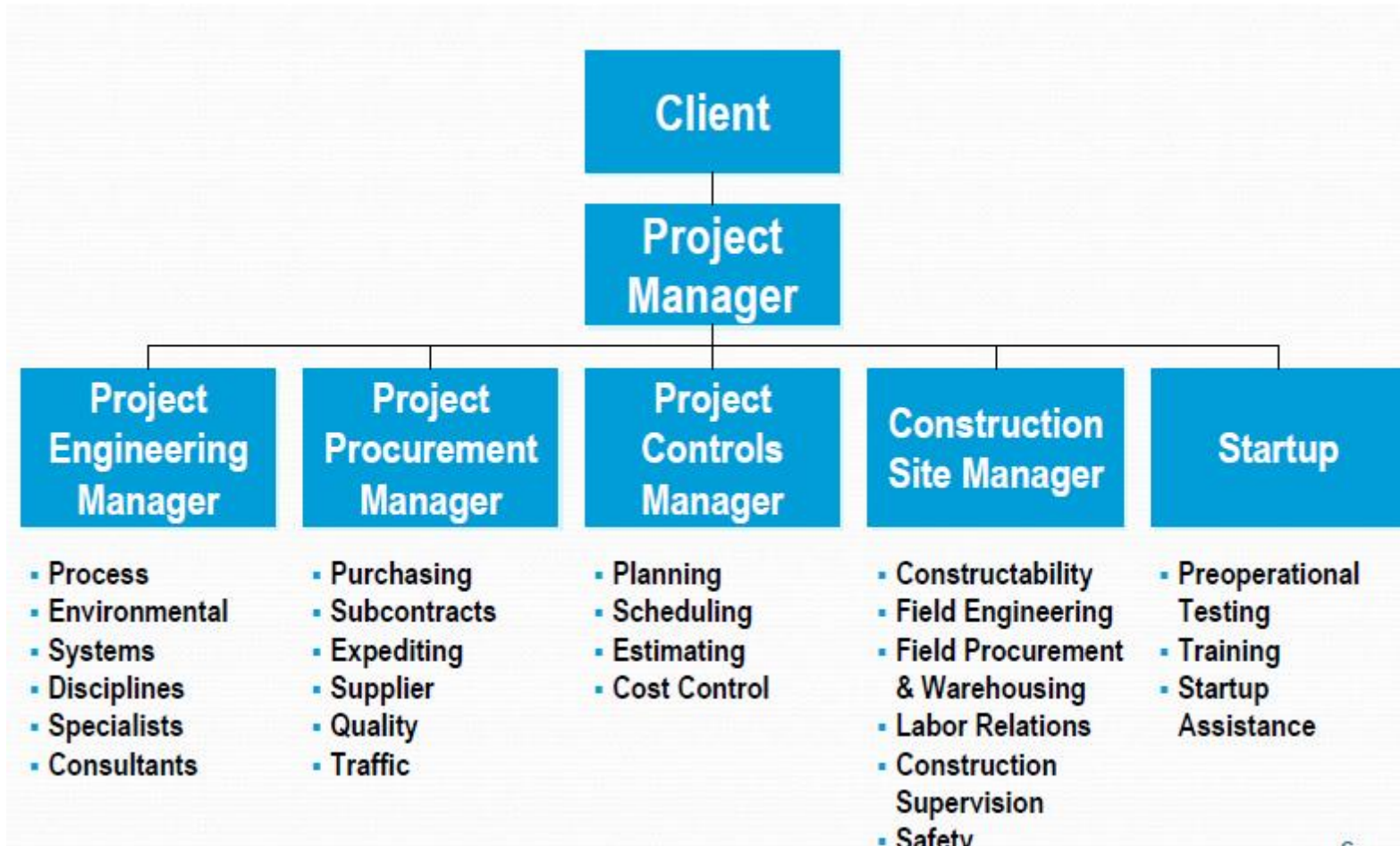
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# II. INTRODUCTION TO PROJECT MANAGEMENT

## Project management responsibilities

### PM chart



# II. INTRODUCTION TO PROJECT MANAGEMENT

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## Project management responsibilities

### Project management

- **Customer relations** – point responsibility
- Championing **safety** – zero accidents
- Meeting project **quality** objectives
- Leading **environmental compliance** and advocating sustainable development
- **Execution Planning**
- Project scope, cost, and **schedule control**
- **More responsibilities:** Prime contract administration; Risk management; Project coordination and interface management; Management reporting and financial control; Delivering planned profitability (“as sold” or better); No surprises.

# II. INTRODUCTION TO PROJECT MANAGEMENT

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## Project management responsibilities

### Project Engineering Manager's Responsibilities

- Engineering execution planning
- Managing the engineering design work of the project.
- Producing all engineering deliverables incl. design criteria, design drawings, technical and general specifications, material requisitions, equipment lists, necessary to define and construct the facility.
- Providing the engineering input to the project execution plan.
- Preparing the detailed engineering budget and schedule and the list of deliverables.
- Reporting to the Project Manager regarding overall performance of engineering activities, costs, and schedule.

# II. INTRODUCTION TO PROJECT MANAGEMENT

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## Project management responsibilities

### Construction (Site) Manager's Responsibilities

- Construction execution planning
- Development of the construction portion of the project schedules
- Development of field staffing plans, temporary facilities plans, and indirect cost budgets
- Directing technical execution (e.g., construction methods, subcontract administration) in accordance with the established construction quality standards
- Reporting to the Project Manager regarding overall performance of the site activities, costs, and schedule.

# II. INTRODUCTION TO PROJECT MANAGEMENT

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## Project management responsibilities

### Project Start-up Engineer's Responsibilities

- Startup services execution planning
- Scheduling, budgeting, and field performance of preoperational testing and plant startup services
- Review and assistance in preparing preoperational test procedures during design
- Preoperational testing and plant operational services, to full power operation
- Reporting to the Project Manager regarding overall performance of start-up activities, costs, and schedule.

# II. INTRODUCTION TO PROJECT MANAGEMENT

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# II. INTRODUCTION TO PROJECT MANAGEMENT

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## Project execution processes

- Mobilize team/resources
- Conduct team building
- Establish and get alignment on the project execution strategy, mission, goals, and expectations
- Establish the performance baseline
- Lead the project execution planning effort
- Manage the prime contract
- Manage the interfaces of all organizations that contribute to the project
- Establish and maintain communication channels
- Establish and maintain customer relations
- Promote and ensure safety, health, and environmental compliance
- Promote and ensure professional and business ethics

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# CONTACT

[claudiu.albulescu@upt.ro](mailto:claudiu.albulescu@upt.ro)

<http://www.ct.upt.ro/suscos/index.htm>

<http://steel.fsv.cvut.cz/suscos>



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