Project Management Fundamentals

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What is a Project?

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"A Temporary endeavor undertaken to create a unique Product, service, or result"

1- Temporary

- Definite Beginning & End
- End reached when:
  - Objectives reached
  - Objectives cannot be met
  - Need for project no longer exists
- Projects are not "ongoing" efforts
- Does not generally apply to outcomes

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2- Unique

- Products

- Capability

- Results

- Repetitiveness does not change the fundamental uniqueness of the project

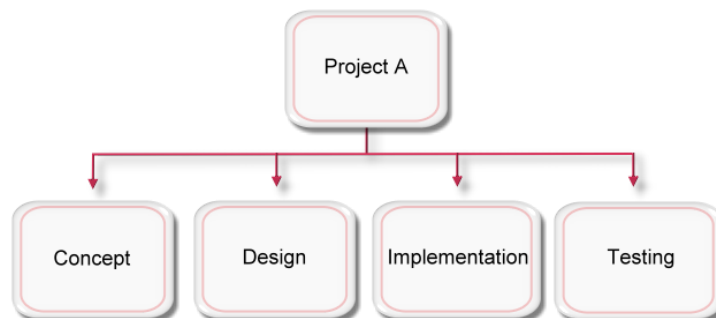*A.MAWI, TAKROURI & ASSOCIATES*
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3- Progressively Elaborative

- Developing in steps, and continuing by increments.

- Plans get improved and clearer as more information is obtained and estimates are more accurate.

Example: Progressive Elaboration

Project A

Concept | Design | Implementation | Testing

3- Progressively Elaborative

EXAMPLE: BEFORE CONCEPT PHASE

Testing Phase

Design Phase

← Concept Phase

3- Progressively Elaborative

EXAMPLE: BEFORE DESIGN PHASE

Testing Phase

Design Phase

Concept Phase

3- Progressively Elaborative

EXAMPLE: AFTER DESIGN PHASE

Testing Phase

Design Phase

Concept Phase
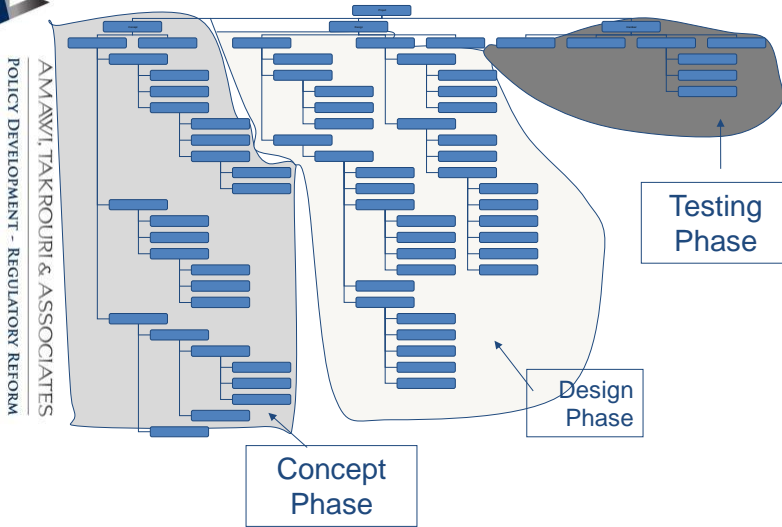
3- Progressively Elaborative

EXAMPLE: FINALLY

Testing Phase

Design Phase

Concept Phase
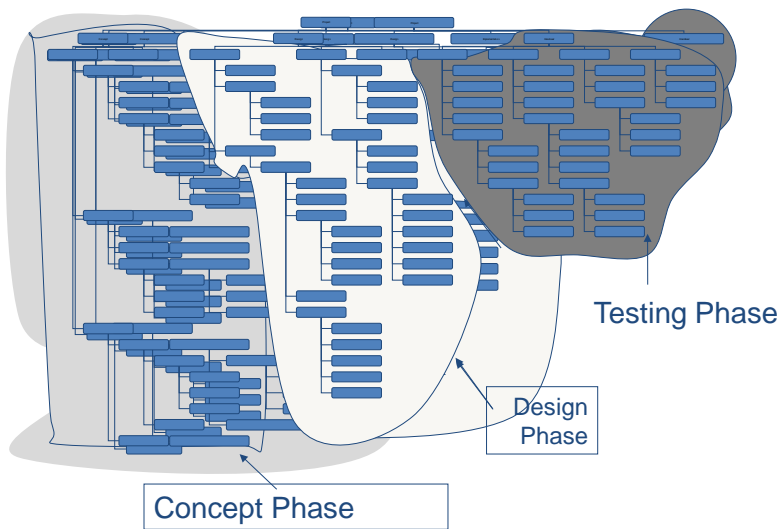
Projects Vs. Operation

Operation	Project
Repeating process	One of a kind, temporary process
No clear beginning or ending	Clear beginning and ending
Same output created each time the work is performed	Output is unique
Everyone in work group performs similar functions	Requires multi-disciplined team

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Why Are Projects Important for Modern organizations?

- They are important tools for strategic management

- They drive change, and hence organizational growth

- They are tools to deal with the shortcomings of operations (creativity and innovation)

- They are tools to cope with the increasing (global) competition for customers and their satisfaction

What is Project Management?

- Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. It includes:

  ➢ Identifying requirements

  ➢ Establishing clear & achievable objectives

  ➢ Balancing the competing demands for quality, scope, time and cost

  ➢ Adapting the specifications, plans & approach

What Project Management is Not?

- Managing or buying a software.

- Preparing a schedule or a bar chart

- Preparing progress reports showing accomplishments

- Coordinating work and communicating with stakeholders

- For Engineers ONLY

- Project Management is a science and art

The Role of Project Manager

A Competent Project Manager

Knowledge

Project Manager's Current Competence

Personal
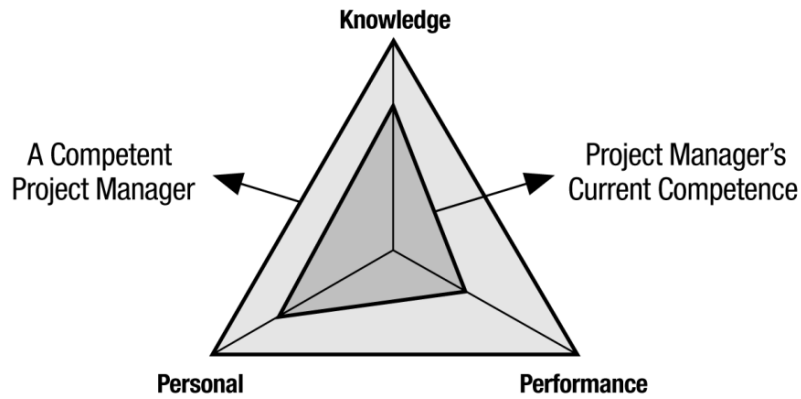
Performance

Knowledge

❑ What the Project Manager knows about Project Management.

Performance

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❑ What the Project Manager is able to do or accomplish while applying his/ her project management knowledge

Personal

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❑ How the Project Manager behaves when performing the project or related work.

❑ Encompasses:
➢ Attitude
➢ Core personality characteristics
➢ Leadership

Project Manager Interpersonal Skills
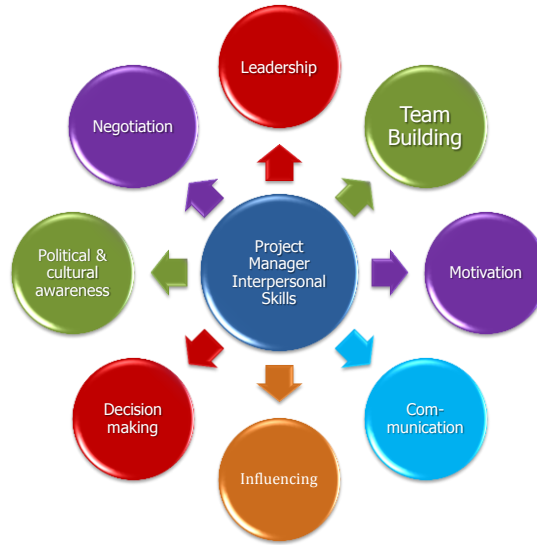
Project Manager vs. Technical Expert

Tech

80% Technical

20% Human Relations & Management

PM

20% Technical

80% Human Relations & Management

Role Change
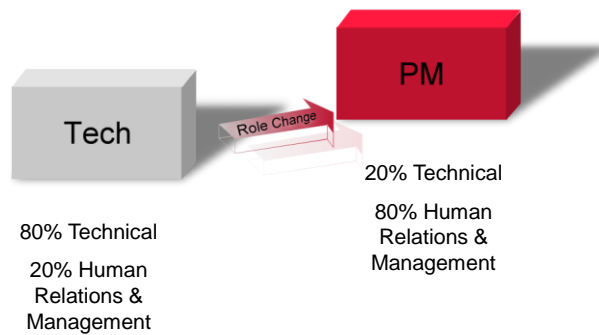
"If you are deeply involved in solving technical problems, who is managing the project?"

Project Management Framework

Project Lifecycle

❑ A collection of generally sequential and sometimes overlapping project phases

❑ Phases name and number are determined by:

➢ Management

➢ Nature of the project

➢ Control requirements

➢ Area of application

❑ Can be determined or shaped by the unique aspects of the organization, industry or technology

❑ Can be documented by a methodology

❑ Provides the basic framework for managing the project

Project Phases

- Divisions within a project where extra control is needed to effectively manage the completion of a major deliverable.

- A deliverable is a measurable, verifiable work product.

- Each phase ends with a deliverable

- Number and structure of phases is determined by the organization's control requirements

- Some organizations have established policies that standardize all projects.

Cost & Staffing Level
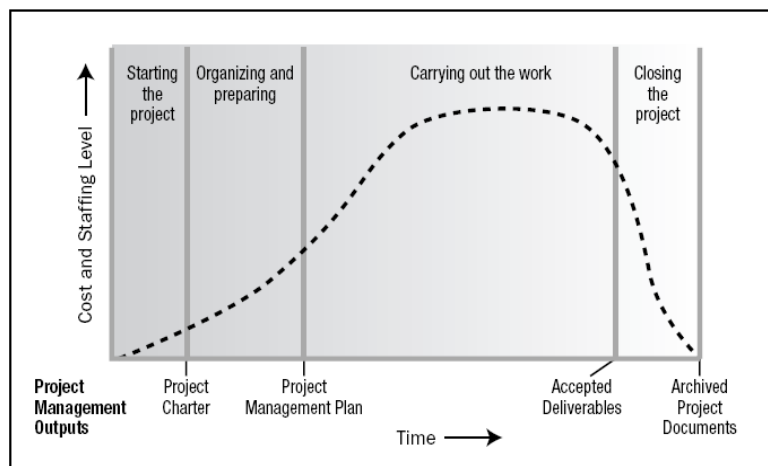
The project through its lifecycle

High — Stakeholder influence, risk, and uncertainty

Degree →

Cost of changes

Low

Project Time →

Project Management Process Groups

Monitoring & Controlling Processes

Planning Processes

Initiation Processes

Closing Processes

Execution Processes
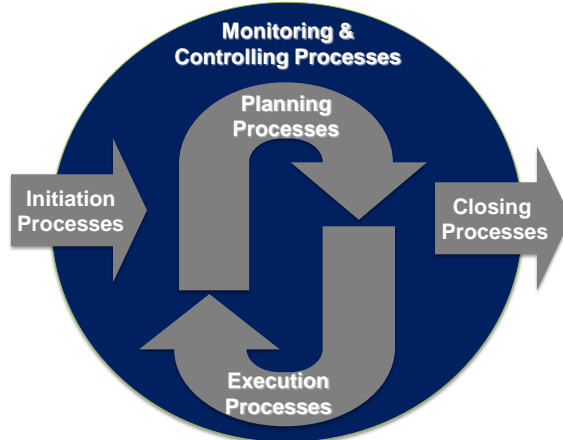
Project Management Process Groups

❑ A version of Deming's Cycle

❑ Plan – Do – Check- Act (PDCA)

Interaction Between Process Groups

Level of Process Interaction

Initiation Process Group **Planning Process Group** **Execution Process Group** **Monitoring & Control Process Group** **Closing Process Group**

Project Management Knowledge Areas

❑ Project Integration Management

❑ Project Scope Management

❑ Project Time Management

❑ Project Cost Management

❑ Project Quality Management

❑ Project Human Resources Management

❑ Project Communication Management

❑ Project Risk Management

❑ Project Procurement Management

❑ Project Stakeholder Management

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Project Integration Management

❑ Includes the processes needed to identify, define, combine, unify & coordinate the various processes and project management activities within the Project Management Process Groups

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Project Scope Management

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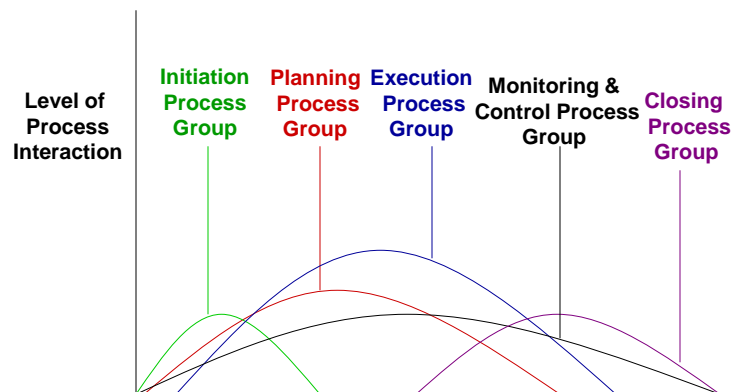❑ The processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.

Project Time Management

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❑ The processes required to manage timely completion of the project.

Project Cost Management

❑ The processes involved in estimating, budgeting & controlling costs so that the project can be completed within the approved budget

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Project Quality Management

❑ Processes and activities of the performing organization that determine quality policies, objectives and responsibilities so that the project will satisfy the needs for which it was undertaken.

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Project Human Resources Management

❑ Processes that organize, manage, and lead the project team.

Project Communication Management

❑ Processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information.

Project Risk management

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❑ Processes of conducting risk management planning, identification, analysis, response planning, and monitoring and control of the project.

Project Procurement Management

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❑ Processes necessary to purchase or acquire products, services or results needed from outside the project team.

Project Stakeholder Management

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❑ The processes required to identify people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholders expectations and their impact on the project, and develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring & controlling Process Group	Closing Process Group
4.Project Integration management	4.1 develop Project charter	4.2 develop Project Management plan	4.3 direct and Manage project work	4.4 monitor and control project work 4.5 perform Integrated Change control	4.6 close project or phase
5. Project scope management		5.1 Plan Scope Management 5.2 collect requirements 5.3 define scope 5.4 create WBS		5.4 validate scope 5.5 control scope	
6. Project time management		6.1Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.34stimate Activity resources 6.5Estimate Activity durations 6.6 Develop Schedule		6.6 Control Schedule	

| Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring & controlling Process Group	Closing Process Group
7. Project cost management		7.1 Plan Cost Management 7.2 Estimate costs 7.3 Determine Budget		7.3 Control Costs	
8. Project quality management		8.1 Plan Quality Management	8.2 perform Quality Assurance	8.3 Control Quality	
9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2 Acquire Project Team 9.3 Develop project Team 9.4 Manage Project Team		
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Control Communications	

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring & controlling Process Group	Closing Process Group
11. Project risk management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk analysis 11.5 Plan Risk Responses		11.6 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Administer Procurements	12.4 Close Procurements
13 Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

How do we define success?

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- ❏ On time
- ❏ Within budget
- ❏ Scope integrity
- ❏ Achieving quality
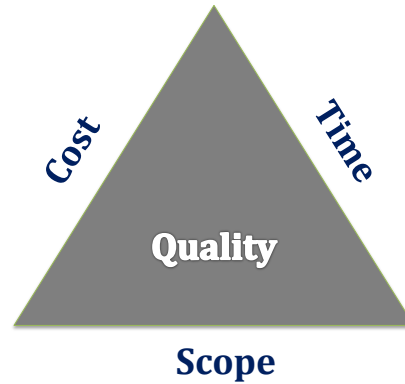
Cost **Time**

Quality

Scope

Chaos Report

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- ❏ 31.1% of projects will be cancelled before they ever get completed

- ❏ 52.7% of projects will cost 189% of their original estimates

- ❏ Only 16.2% of projects were completed successfully

A Joke!

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"This project is extremely important, but it has no budget, no guidelines, no support staff and it's due tomorrow morning. At last, here's your chance to really impress everyone!"

Project Management Body of Knowledge (PMBOK)

- Identifies that subset of the PMBOK that is generally recognized as a good practice

- "Generally Recognized" means the knowledge and practice described are applicable to most projects most of the time. There is consensus about their value and usefulness.

- "Good Practice" means there is a general agreement that the application of these skills, tools, and techniques can enhance the chances of success over a wide range of projects.

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