

PROJECT MANAGEMENT

Intermediate



LIVE VIRTUAL
TRAINING



RADIATING KNOWLEDGE

Organized by:

Ahmed TAHA



Dr. Ahmed Taha, PhD, PMP, PMI-RMP, ITIL, CBAP, PMOC, PRINCE2, CBA is project management lecturer and consultant, he has more than 18 years of experience in the information technology field.

He awarded his PhD in project management at Swiss Management University in April 2017.

He has more than 12 years of experience as a lecturer and consultant in project management, business analysis and risk management.

Dr. Ahmed is a lecturer of risk management, knowledge management, research methods and innovation management in MBA and DBA programs from John Sulston Business School, UK.

In 2005 he awarded a Diploma in project management from Cambridge University, in 2006 he awarded PMP certificate, in 2009 he certified ITIL v3 foundation level, in 2010 he certified PMOC from allPMO, in 2010 he awarded PMI-RMP from PMI, in 2013 he awarded CBAP certification from IIBA, and in 2016 he awarded PRINCE2 foundation level certification.

In 1996 he graduated from Ain shams university, Faculty of engineering, communication and electronics dept. In 1997 he awarded a diploma in software development from Information Technology Institute, in May 2000 he had a master degree in network management using artificial intelligent mobile agent to manage TCPIP-based network. In 2008 he awarded his MBA degree specialized in International Business, from Ecole Supérieure Libre des Sciences Commerciales Appliquées (ESLSCA Group), France

He worked as a volunteer with PMI MENA Chapter from 2008 till 2013 and he was a board member of PMI MENA Chapter and the Program Director of the Chapter till July 2013; he was the PMIEF Liaison with PMI MENA Chapter from April 2012 till July 2013. He was a speaker in Hind-in-Hand 2012 event organized by PMI MENA Chapter and talked about how to use the project management to enhance the performance of the NGOs.



March 21-25, 2021 | Online

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Built upon the strong experience in the manufacturing sector, which its founders developed in Sweden during the 90's global expansion, LEORON evolved into the dominant training institute that offers a comprehensive set of training and development solutions.

All across the EMEA region, we've gained a reputation by transferring knowledge in all strategic corporate functions, including corporate finance, HR, SCM, operations, and engineering.

Today, we are globally recognized as one of the leading providers of US-certified programs.

We offer certifications from the most notable American institutes, such as ASQ, IABFM, APICS, IACCM, PMI and much more.

LEORON's mission is to help our worldwide clients increase their competitiveness by improving the competency levels of their employees through top quality training and development solutions delivered by unrivaled global experts and facilitated by the best training managers in the industry. Whether our clients are facing difficulties re-organizing their brand, equipping their workforce with an extra set of skills or aiming to assess competencies within an existing structure, our development planning is a great solution.

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Wide range of dates and locations that enable you to choose according to schedule



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Choose from one of our 60 global destinations, such as: Dubai, Abu Dhabi, London, Paris, Jonkoping, Riyadh, Almaty, Barcelona...



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All our courses are certified by leading world academies, such as ASQ, LSBF, PMI, IIA, HRCI, APICS, ILM, IACCM and many more



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Our in-house programs are meant for clients who choose to train their people, in their location of choice, at their preferred schedule.



We'll fly our trainers and our materials to your premises, securing you a custom-made, cost-efficient learning experience. We'll even break down an in-house and let you choose further:



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Like a public course we offer?

We have 500+ public courses certified by over 30 global Associations and bodies of Knowledge.

Many of them are delivered as in-houses, too.

See how we can bring public knowledge to your enterprise.



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Need to add your touch to one of our pre-made courses?

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Bespoke

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We'd be happy to offer you one of our "bespoke" solutions – in-houses tailored exclusively for you -focused on problem-solving, increasing performance & productivity, and improving the competency levels of employees.

We'll build everything from scratch, according to your core needs, competencies and goals.

Why In-House?

SEE WHY TEAMS OF ALL SIZES ENJOY
OUR TRAINING SOLUTIONS.

THE NEXT ONE CAN BE YOURS!

FULLY CUSTOMIZED
ACCORDING TO YOUR NEEDS!



LOWER INVESTMENT



In-house group training is a cost-effective solution and helps optimize your training budget

TIME-EFFECTIVE



Traveling won't consume your time. Courses are delivered on-site

FLEXIBILITY



Training sessions are set according to your time/location preferences

ADAPTABLE



Trainer is picked by the client and trainees to fit the exact proficiency level of the group

CUSTOM-MADE



Training is tailored according to your employees' specific needs

SIGNIFICANT



Well-adjusted to latest global industry standards and business requirements



LIVE VIRTUAL TRAINING



With online learning expanding throughout academia and beyond, we have implemented our Live Virtual Training to stretch your learning experience past the boundaries of location – presentations are interactive, conducted live at a scheduled time throughout a week, mimicking our public courses both in content and quality.

By logging to a virtual classroom, students participate in an interactive course, using our audio-visual online training platform. Our blended learning approach combines virtual classroom methods with online activities to form an integrated instructional approach. Upon successful completion, you can earn the appropriate designation, as well as learning credits and LEORON certificate of attendance.

BENEFITS OF LIVE VIRTUAL TRAINING



SIMPLE SET-UP

Easy registration through email.



COURSE CONTENT SHARING

Learning materials and additional reading resources, case studies and exercises available for all participants as PDF.



INTERACTIVE

Live video interaction among participants and instructors. In-built chat to exchange messages individually or with the group.



CONVENIENCE

Attendees can join training sessions from their mobile or desktop device.



ENGAGING

Knowledge retention with in-session Activities



TECH SUPPORT

Dedicated host to ensure that everything runs smoothly



LIVE BROADCASTING

Students see PowerPoint slides in a split-screen to follow along with the instructor.

HR DEVELOPMENT SOLUTIONS

Our Human Resource Development (HRD) solutions represent practical toolkit for helping our clients better understand the development needs of their employees, starting from recruitment, employee career development, performance management and development, training, coaching, mentoring, to succession planning.

LEVEL 1 HR DEVELOPMENT SOLUTIONS



Corporate Talent Diagnostics

Competency Assessments

Training Needs Analysis and
Developing Annual Training Plans

Developing Job Descriptions

Individual Development Plans

LEVEL 2 LEORON PROGRAM IMPLEMENTATION



Coaching on know-how implementation of any of the
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Train the Trainer program implementation

Preparing for International Standards implementation

Developing and implementing Certification Maps into
the organization

Assisting with Change Management programs

LEVEL 3 TECHNICAL CONSULTING ON VARIOUS CORPORATE NEEDS



Assistance in Creating and Developing new functions
and/or departments

Strategy and Management Consulting

Developing Financial Models

Creating Risk Management frameworks

Implementing GRC requirements

Design and Mapping of Business Processes (BPM)

LEADERSHIP COACHING

COACHING is the most effective development tool for senior executives.



One of the things we do very well with our coaching programs is helping executives understand the need for change and taking responsibility for their personal development and transformation.

If you are looking to improve performance of your leadership team and need assistance from our international faculty of coaches, please give us a call and we will work with you closely to design your coaching program.

STEPS WE USE IN HELPING SUCCESSFUL LEADERS GET EVEN MORE SUCCESSFUL



LEADERSHIP PERFORMANCE FORECASTING PSYCHOMETRIC ASSESSMENT

Measures leader's Dominant Competitive Strategy, Ingrained Leadership Culture, Personal Integrity, Deep Thinking, Clear Thinking, personality and predictive LeaderVIEWS.

REVIEW OF THE ASSESSMENT RESULTS AND DETERMINING GROWTH AREAS

Leaders draft development objectives based on Performance forecasts, assisted by LEORON coach.

COACHING SESSIONS WITH PEER INVOLVEMENT

Onsite or offsite individual coaching sessions and monitoring of change in behavior

PEOPLE ASSESSMENTS

Predictive Psychometrics: Potential Achieved

A multitude of practices and methodologies supplement the struggles of global companies for better organizational development. Along the way, increase of workforce knowledge and effectiveness plays a key role.

People Assessments offers customized **online psychometric tests** that help accurately measure:

- **Vital employee traits**
- **Knowledge**
- **Skills**
- **Abilities**

Our Psychometric Tests Bear Hundreds Of Years Of Psychometric And Talent Management Experience

We've designed each test for decision making, employment screening and employee management purposes that accurately **predict on-the-job performance and skills.**



Intended to meet fair hiring practices, all tests were designed following the standards of Industrial Organizational psychology.

THE TEST CONSTRUCTS HAVE BEEN USED OVER 140 MILLION TIMES, DELIVERED TO HUNDREDS OF COMPANIES, AND CONFIRMED AND VALIDATED THROUGH OVER 240 FIELD STUDIES.





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CONSULTING SERVICES

LEORON's continued presence in the market has enabled us to detect an increased need for **consulting services**.

By leveraging the expertise of our global experts, we've managed to consolidate our consulting domain toward governance, risk and compliance (GRC), quality management systems (QMS, financial modelling (FM), procurement & supply chain management (SCM), mechanical engineering services, HR development solutions, and more.



Workbook



**PLEASE FILL
DAY 1
EVALUATION FORM**



Day 1 Evaluation Form

We, at LEORON Professional Development Institute, are committed to providing our partners with practical, valuable and intensive training of a highest standard. In order for us to identify any issues that require attention or correction on the following days, it is essential that we receive your feedback on day one on course. Hence, we would like to kindly ask you to complete this form and hand it to our expert trainer before leaving the class.

Date and Location: _____



Criteria



*Insert number in the fields from **1** (Strongly Disagree) to **5** (Strongly Agree)

- 1.** The instructor held my attention
- 2.** The presentation style of the instructor contributed to my learning experience
- 3.** The information in today's session is applicable to my work
- 4.** I took responsibility for being involved in today's session
- 5.** I got most of my questions answered during today's session

What did you like most about today's session?



Please provide any suggestions for change/improvement you may have for the rest of the day of this program.

PLEASE GO BACK TO FILL

DAY 1

EVALUATION FORM





Project Management - Intermediate

Dr. Ahmed Taha, PhD, PMP, RMP, CBAP, PMOC, PRINCE2, ITILv3, SFC, CBA

Course Outline

- ✓ Introduction to Project Management
- ✓ Brief word about PMI
- ✓ Project management knowledge areas
- ✓ Project Initiation
- ✓ Project Planning
- ✓ Project Execution
- ✓ Project monitoring and Controlling
- ✓ Project Closing

Course Objectives

- ✓ Define what is project and Project management
- ✓ Differentiate between project and operation
- ✓ List the process groups and the knowledge areas as per PMI
- ✓ Develop the main content of the project management plan
- ✓ Monitor and control project performance using EVM

Who am I?

Project Management Lecturer and Consultant

Conducted more than 260 training sessions on project management, risk management, business analysis ,PMO and change management for close to 2700+ participants from 50+ corporates with average of 95% success results



Dr. Ahmed Taha

CERTIFICATIONS

- › PRINCE2
- › PMP
- › PMI-RMP
- › CBAP
- › ITIL V3
- › PMOC
- › Blockchain Architect

EXPERIENCE

- › 18+ years of total experience in IT and field.
- › 13+ years of experience as lecturer and project management consultant

ROLE

Delivered lectures on project management, risk management, program management, business analysis, Earned Value Management (EVM), organizational project management (OPM), and business and management training.

Please Introduce Yourself

Please
Introduce yourself...

&



What are your expectations...

DAY 1

Project Management Fundamental Concepts

Introduction To Project Management

leoron.com

History of Project Management

- In 1917, Henry Gantt developed the famous Gantt chart as a tool for scheduling work in factories
- The military was the key industry behind the development of several project management techniques.
 - ✓ Members of the US navy Polaris missile/submarine project first used **network diagrams** in 1958. These diagrams helped model the relationships among project tasks, which allowed them to create schedules that were more realistic.
 - ✓ Determining the relationships among tasks helps in finding the **critical path** of the network. This tells the manager the earliest completion date of the project.
- In the 1990s, many companies created **project management offices** (PMO) to help them handle the increasing number and complexity of projects throughout an organization

Project Management Institute (PMI)

- The leading not-for-profit professional membership association for the project management profession
- Certifications
- Global Standards
- Chapters and Community
- Training and Education
- Thought Leadership
- Academic Research

Project Management Institute (PMI)



Project & Project Management

What is a Project?

A project can be considered to be any series of activities and tasks that:

- Have a specific objective to be completed.
- Have defined start and end dates.
- Have funding limits.
- Use human and nonhuman resources
- Are multifunctional



What is a Project?

A project is a temporary endeavor undertaken to create a unique product service, or result.

- **Temporary**
- **Unique**
- **Progressive Elaboration**

What is Project Management ?

The formal definition:

The application of tools, skills,
knowledge to the activities of the project
in order to achieve the project objectives



What is Project Management ?

- 49 Processes
- 10 Knowledge Areas
- 5 Process Groups



What is Project Management ?

| | |
|--------------------------|------------------------|
| Integration Management | Scope Management |
| Schedule Management | Cost Management |
| | Quality Management |
| Communication Management | Resource Management |
| Risk Management | Procurement Management |
| | Stakeholder Management |

What is Project Management ?

| Knowledge Area | Process Group | | | | |
|--------------------------------------|------------------------------|--|--|---|-----------------------------|
| | Initiating | Planning | Executing | Monitoring & Controlling | Closing |
| 4. Project Integration Management | 4.1. Develop project charter | 4.2. Develop project management plan | 4.3. Direct & Manage Project Work 4.4. Manage Project Knowledge | 4.5. Monitor & Control Project Work 4.6. Perform Integrated Change Control | 4.7. 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 | | 5.5. Validate Scope 5.6. Control Scope | |
| 6. Project schedule Management | | 6.1. Plan Schedule Management. 6.2. Define Activities 6.3. Sequence Activities 6.4. Estimate Activity Durations 6.5. Develop Schedule | | 6.6. Control Schedule | |
| 7. Project Cost Management | | 7.1. Plan Cost management 7.2. Estimate Costs 7.3. Determine Budget | | 7.4. Control Costs | |
| 8. Project Quality Management | | 8.1. Plan Quality management | 8.2. Manage Quality | 8.3. Control Quality | |
| 9. Project Resource Management | | 9.1. Plan Resource Management 9.2. Estimate Activity Resources | 9.3. Acquire Resources 9.4. Develop team 9.5. Manage team | 9.6. Control Resources | |
| 10. Project Communication Management | | 10.1. Plan Communications Management | 10.2. Manage Communications | 10.3. Monitor Communications | |
| 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. Implement Risk Responses | 11.7. Monitor Risks | |
| 12. Project Procurement Management | | 12.1. Plan Procurement Management. | 12.2. Conduct Procurements | 12.3. Control Procurements | |
| 13. Project Stakeholder Management | 13.1. Identify Stakeholders | 13.2. Plan Stakeholder Engagement | 13.3. Manage Stakeholder Engagement | 13.4. Monitor Stakeholder Engagement | |
| | 2 | 24 | 10 | 12 | 1 |

Project, Program and Portfolio

➤ Portfolio

A portfolio is a collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives.

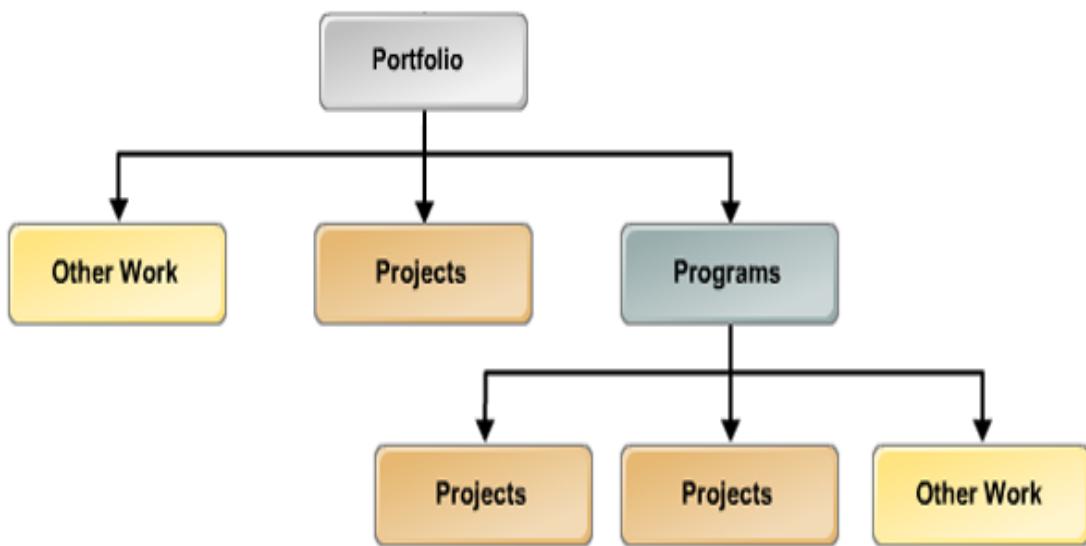
➤ Program

A program is defined as a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.

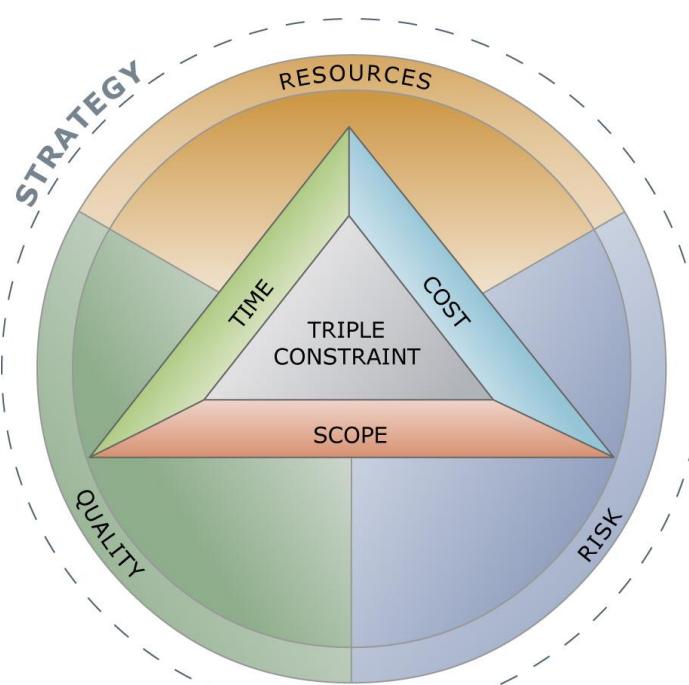
➤ Project

Projects are often utilized as a means of achieving an organization's strategic plan.

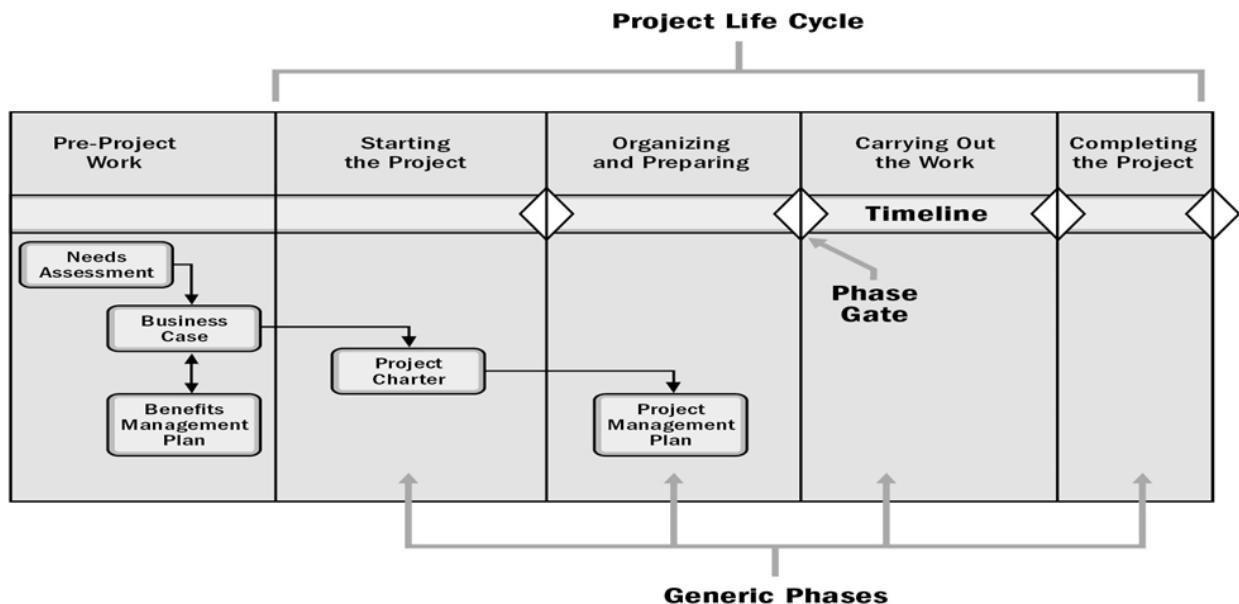
Project, Program and Portfolio



Project Constraints



Project Business Documents



Project Success

- Project Success should be measured in terms of completing the project within the constraints of scope, time, cost, & quality which agreed upon between the key stakeholders and the project manager.
- Ensure realization of benefits for the undertaken project,
- Project success should also be measured with consideration toward achievement of the project objectives

Project Management Office

The functions of the PMO:

- Providing policies, templates and guide lines
- Provide support, and training in project management
- Provide the project managers, and evaluation of all projects.

Project Management Office

- **Supportive.** Supportive PMOs provide a consultative role to projects by supplying templates, best practices, access to information and lessons learned from other projects.
- **Controlling.** Controlling PMOs provide support and require compliance through various means. Compliance may involve adopting project management frameworks or methodologies, using specific templates, forms and tools, or conformance to governance
- **Directive.** Directive PMOs take control of the projects by directly managing the projects. The degree of control provided by the PMO is high.

Projects vs. Operational

➤ **Similarities with Operations:**

- Performed by people
- Constrained by limited resource
- Planned, executed and controlled

➤ **Differences from Operations:**

- Operations are on-going; projects temporary
- Operations repetitive; Projects unique

Organizational Influences

1. Organizational Cultures
2. Organizational Communications
3. Organizational Structures
4. Organizational Process Assets
5. Enterprise Environmental Factors

Project Stakeholder

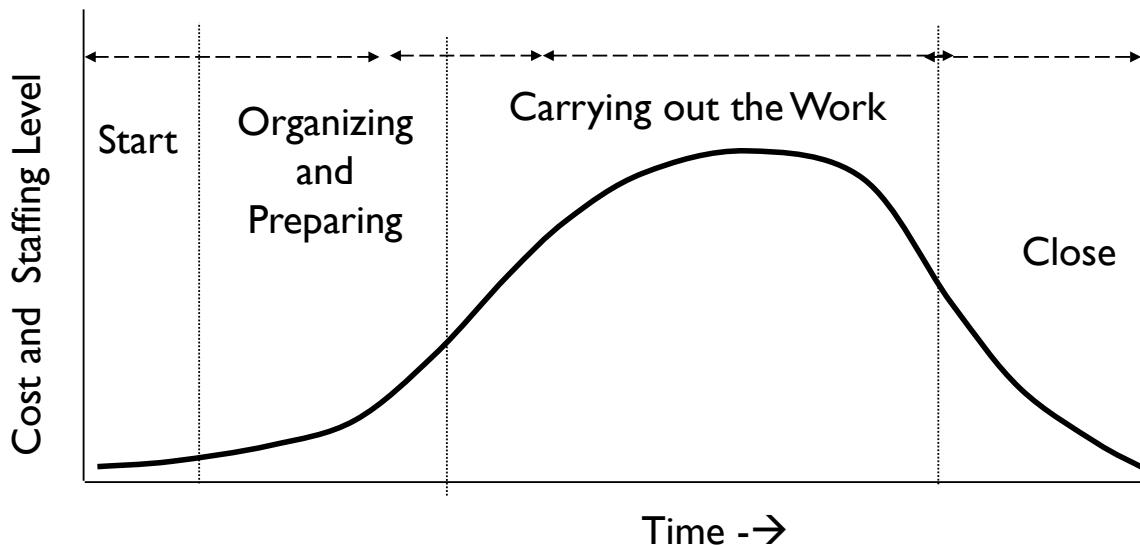
They are any person or organization that may affect the project and/or affected by the project positively or negatively



Project Stakeholder

- Project Manager
- Functional Manager: the owner of all the resources
- Sponsor: provides the financial resources
- Operation Manager
- PMO: Project Management Office
- Team member: who carry the project work
- Customer: the person who will use the final output
- Vendor: provide a service/product to the project

Project Life Cycle



Project Life Cycle

1. Predictive Life Cycles
2. Adaptive Life Cycles (Agile)
3. Hybrid

PROJECT SELECTION

Project Selection

- Selection practices are unique to each organization.
- Best practices encourage objectivity.
- Project selection is rarely purely quantitative.
- Selection should align with an organization's strategic intent.
- Selection is an integral part of an organization's balanced portfolio.

Selection Tools

Qualitative Factors

- Stakeholder bias
- Organizational fit
- Risk analysis
- Scoring models

Quantitative Factors

- Benefit-cost ratio (BCR)
- Present value (PV)
- Net present value (NPV)
- Payback period

Benefit-Cost Ratio (BCR)

It is a comparative analysis of benefits to costs:

$$\frac{\text{benefit}}{\text{cost}}$$

Example:

- Project A will charge \$100,000 (cost) and generate \$150,000 in value (benefit).
- Project B will charge \$100,000 (cost) and generate \$160,000 in value (benefit).

Which has a higher BCR?

Present Value (PV)

What is the value today of future cash flow?

$$PV = \frac{FV}{(1 + i)^n}$$

Remember—

- **PV** = present value of money
- **FV** = future value
- **i** = interest rate (also known as internal discount rate or cost of capital)
- **n** = number of time periods from today

Example

- Someone wants to repay your invoice of \$1,000 by waiting until the end of next year (today is Jan. 1) and will pay you \$1,250 at the end of next December.
- Let's assume your organization's cost of capital is 15%.

Is this a good deal?

| | | | | |
|---|--|--|--|--|
| | | | | |
| $PV = \frac{\$1,250}{(1+0.15)^2} = \frac{\$1,250}{(1.15)^2} = \frac{\$1,250}{1.32} = \$947$ | | | | |

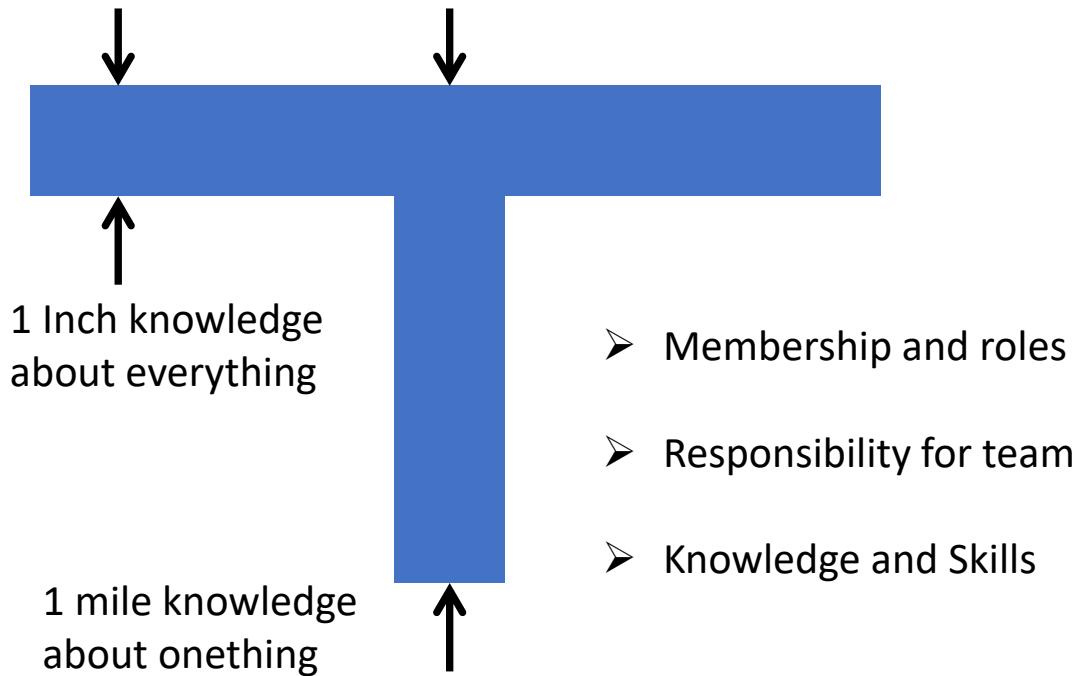
Net Present Value (NPV)

| Project A | | | | | | |
|----------------|--------------------|--|-----------------------|-----------------------|---|------------------|
| Year | Initial Investment | | 1 | 2 | 3 | Gross Benefit |
| Cash Flow | -100,000 | | 75,000 | 75,000 | 0 | \$150,000 |
| PV (year 1) = | 68,180 | | $\frac{75,000}{1.10}$ | | | |
| PV (year 2) = | 61,980 | | | $\frac{75,000}{1.21}$ | | |
| PV (Benefit) = | | | | | | <u>\$130,160</u> |
| NPV = | \$30,160 | | | | | |

| Project B | | | | | | |
|----------------|--------------------|--|------------------|-----------------------|------------------------|------------------|
| Year | Initial Investment | | 1 | 2 | 3 | Gross Benefit |
| Cash Flow | -100,000 | | 0 | 50,000 | 110,000 | \$160,000 |
| PV (year 1) = | 0 | | $\frac{0}{1.10}$ | | | |
| PV (year 2) = | 41,320 | | | $\frac{50,000}{1.21}$ | | |
| PV (year 3) = | | | | | $\frac{110,000}{1.33}$ | |
| PV (Benefit) = | | | | | | <u>\$124,030</u> |
| NPV = | \$24,030 | | | | | |

THE PROJECT MANAGER

Definition of a Project Manager



Definition of a Project Manager

Project manager is the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives



Performing Integration

- Project managers play a key role in working with the project sponsor to understand the strategic objectives and ensure the alignment of the project objectives and results with those of the portfolio, program, and business areas. In this way, project managers contribute to the integration and execution of the strategy.
- Project managers are responsible for guiding the team to work together to focus on what is really essential at the project level. This is achieved through the integration of processes, knowledge, and people.

Leadership

leadership styles include but are not limited to:

- **Laissez-faire** : allowing the team to make their own decisions and establish their own goals
- **Transactional**: focus on goals, feedback, and accomplishment to determine rewards; management by exception
- **Servant leader**: demonstrates commitment to serve and put other people first
- **Transformational**: empowering followers through idealized attributes and behaviours, inspirational motivation, encouragement for innovation and creativity, and individual consideration
- **Charismatic**: able to inspire; is high-energy, enthusiastic, self-confident; holds strong convictions
- **Interactional**: a combination of transactional, transformational, and charismatic

AGILE

AGILE DEVELOPMENT

Agile development is a group of product development

methods based on iterative and incremental development



AGILE MANIFESTO

The Agile Manifesto reads, in its entirety, as follows:

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

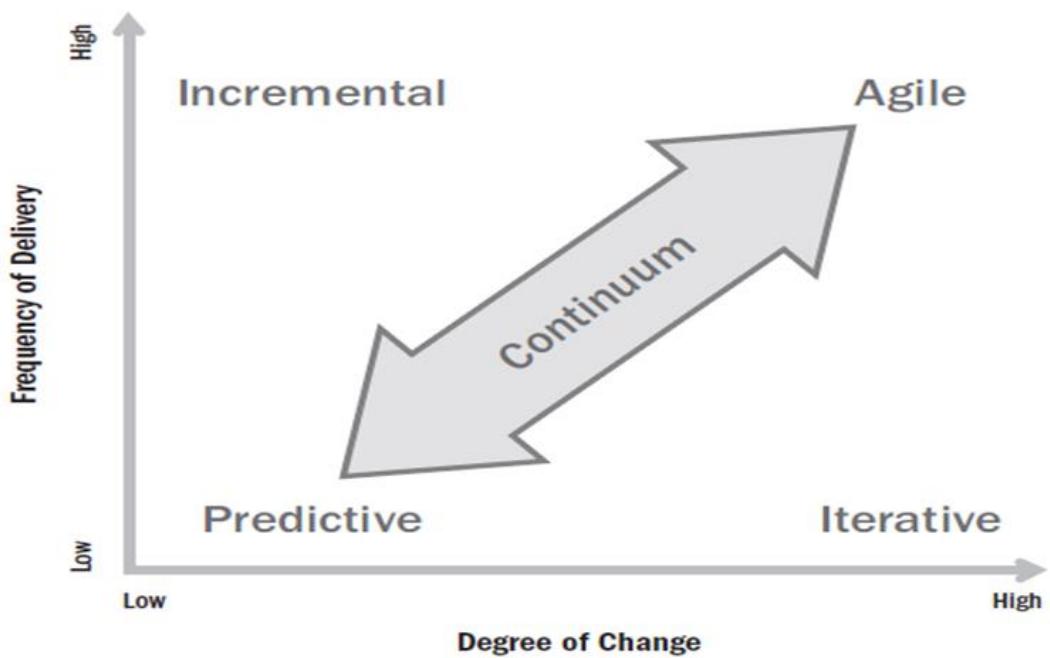
| | | |
|-------------------------------------|-------------|-----------------------------|
| Individuals and interactions | over | processes and tools |
| Working software | over | comprehensive documentation |
| Customer collaboration | over | contract negotiation |
| Responding to change | over | following a plan |

That is, while there is value in the items on the right, we value the items on the left more

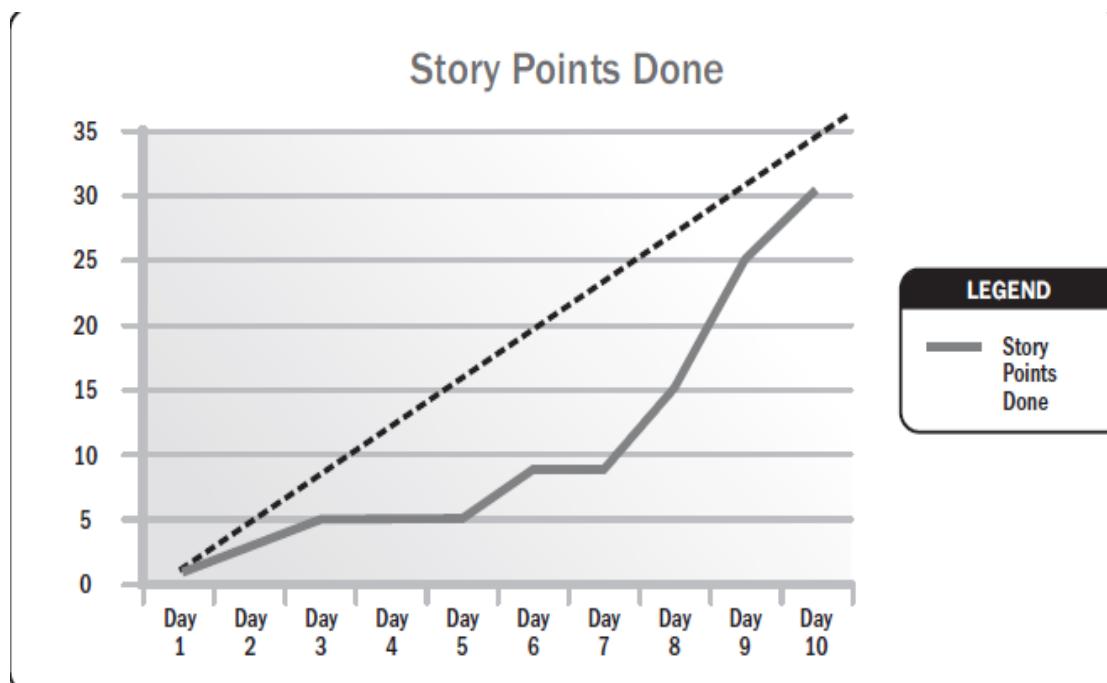
WHY AGILE

- ✓ More dynamic world
- ✓ More complex world
- ✓ Do more with less resources
- ✓ Performance enhancement
- ✓ Achieve competitive advantages
- ✓ Need innovative products and services

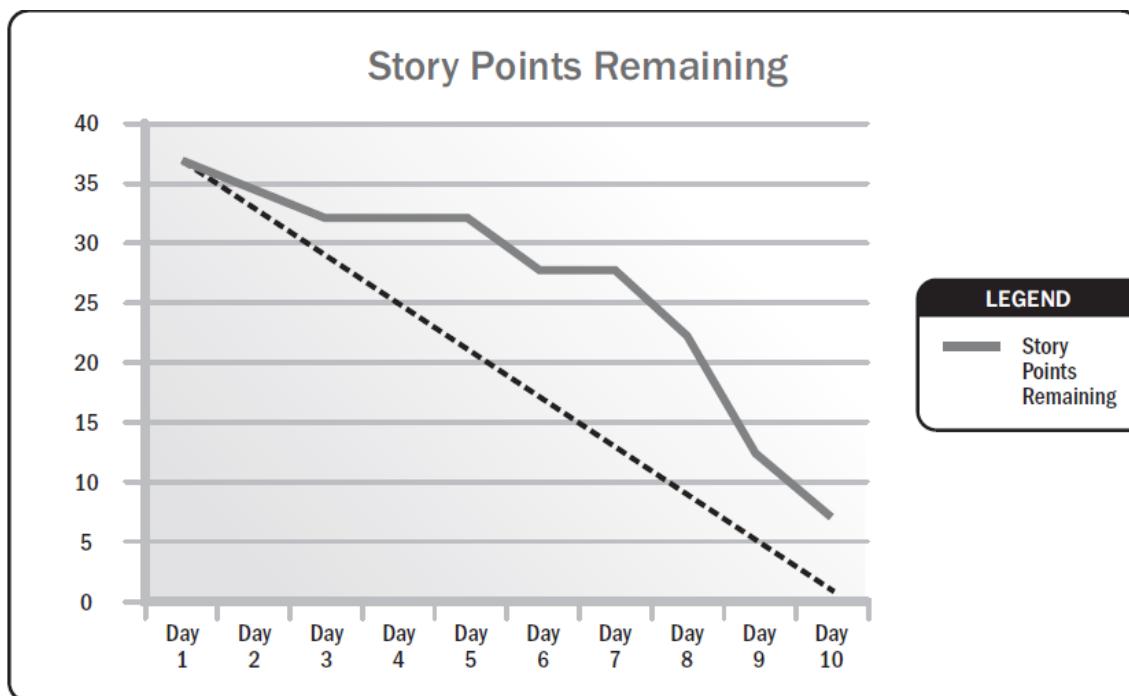
LIFECYCLE SELECTION



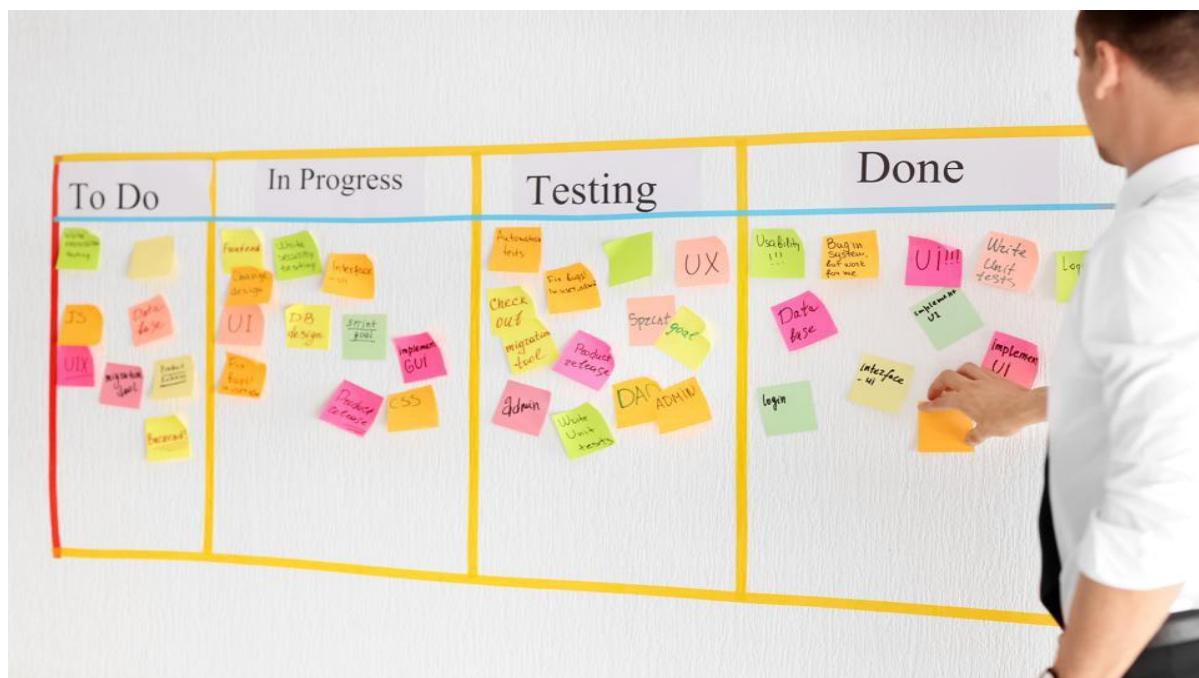
MEASUREMENT IN AGILE PROJECTS



MEASUREMENT IN AGILE PROJECTS



MEASUREMENT IN AGILE PROJECTS - KANBAN



DAY 2

Project Management Knowledge Areas

How to Manage Your Project Successfully

Stakeholder Management

Project Stakeholder Management

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.



Stakeholder Management Processes

1. Identify Stakeholder
2. Plan Stakeholder Engagement
3. Manage Stakeholder Engagement
4. Monitor Stakeholder Engagement

Key Concepts

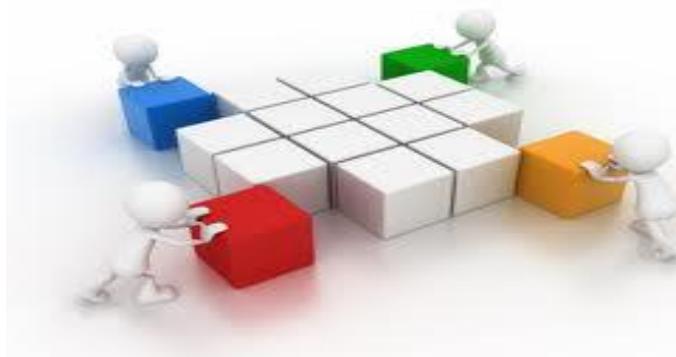
- Academic research and analyses highlight the importance of a structured approach to the identification, prioritization, and engagement of all stakeholders.
- The process of stakeholder identification and engagement should commence as soon as possible.
- Stakeholder satisfaction should be identified and managed as a project objective.
- Identifying and engaging stakeholders are iterative processes and should be updated as:
 - ✓ The project moves through different phases in its life cycle,
 - ✓ Current stakeholders are no longer involved or new stakeholders become members of the project's stakeholder community, or
 - ✓ There are significant changes in the organization or the wider stakeholder community.

TRENDS AND EMERGING PRACTICES

- Identifying all stakeholders, not just a limited set;
- Ensuring that all team members are involved in stakeholder engagement activities;
- Reviewing the stakeholder community regularly, often in parallel with reviews of individual project risks;
- Consulting with stakeholders who are most affected by the work or outcomes of the project through the concept of co-creation; and
- Capturing the value of effective stakeholder engagement, both positive and negative.

1- Identify Stakeholders

The process of identifying project stakeholders regularly & analyzing & documenting relevant information regarding their interests, involvement , interdependencies, influence, and potential impact on project success



Stakeholder Register

- Identification Information
 - Name
 - Role
 - Department
 - Contact Information
- Assessment Information
 - Requirement
 - Expectations
 - Influence
- Stakeholders Classification
 - Internal / External
 - Supporter / resistor

Stakeholder Register - Example

| STAKEHOLDER REGISTER | | | | | | | |
|-----------------------------|----------|------|---------------------|----------------------|--------------|-----------|----------------|
| Project Title: _____ | | | | Date Prepared: _____ | | | |
| Name | Position | Role | Contact Information | Requirements | Expectations | Influence | Classification |
| | | | | | | | |
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| | | | | | | | |

Develop the Stakeholder Register



2 - Plan Stakeholder Engagement

It is the process of developing approaches to involve project stakeholders based on their needs, expectations, interests, and potential impact on the project.



Engagement Level

- **Unaware.** Unaware of project and potential impacts.
- **Resistant.** Aware of project and potential impacts and resistant to change
- **Neutral.** Aware of project yet neither supportive nor resistant
- **Supportive.** Aware of project and potential impacts and supportive to change
- **Leading.** Aware of project and potential impacts and actively engaged in ensuring the project is a success

Engagement Level

| Stakeholder | Unaware | Resistant | Neutral | Supportive | Leading |
|---------------|---------|-----------|---------|------------|---------|
| Stakeholder 1 | C | | | D | |
| Stakeholder 2 | | | C | D | |
| Stakeholder 3 | | | | CD | |

C = Current

D = Desired

Stakeholder Engagement Plan

- Desired and current engagement levels of key stakeholders
- Identified interrelationships between stakeholders
- Stakeholder communication requirements for the current project phase
- Information to be sent to stakeholders, such as language, format, content and detail level
- Reason for the distribution of that information and the expected impact to stakeholder engagement
- Time frame and frequency for the distribution of required information to stakeholders
- Method for updating and refining the stakeholder management plan

3- Manage Stakeholder Engagement

It is the process of communicating and working with stakeholders to meet their needs & expectations, address issues, and foster appropriate stakeholder involvement .

4 - Monitor Stakeholder Engagement

The process of monitoring project stakeholder relationships and tailoring strategies for engaging stakeholders through modification of engagement strategies & plans.

Communication Management

Project Communication Management

Processes necessary to ensure that the information needs of the project and its stakeholders are met through development of artefacts and implementation of activities designed to achieve effective information exchange



Key Concepts

Communication activities have many dimensions:

- Internal or External.
- Formal: Reports, stakeholder briefings.
- Informal: *emails*, social media, websites, and informal ad hoc discussions.
- Upward: With Senior management stakeholders.
- Downward: With the team and others who will contribute to the work of the project.
- Horizontal: With Peers of the project manager or team.
Official and Unofficial.

Key Concepts

The **5Cs of written communications** :

1. Correct grammar and spelling.
2. Concise expression and elimination of excess words.
3. Clear purpose and expression directed to the needs of the reader.
4. Coherent logical flow of ideas.
5. Controlling flow of words and ideas.

TRENDS AND EMERGING PRACTICES

- Inclusion of stakeholders in project reviews
- Inclusion of stakeholders in project meetings
- Increased use of social computing
- Multifaceted approaches to communication

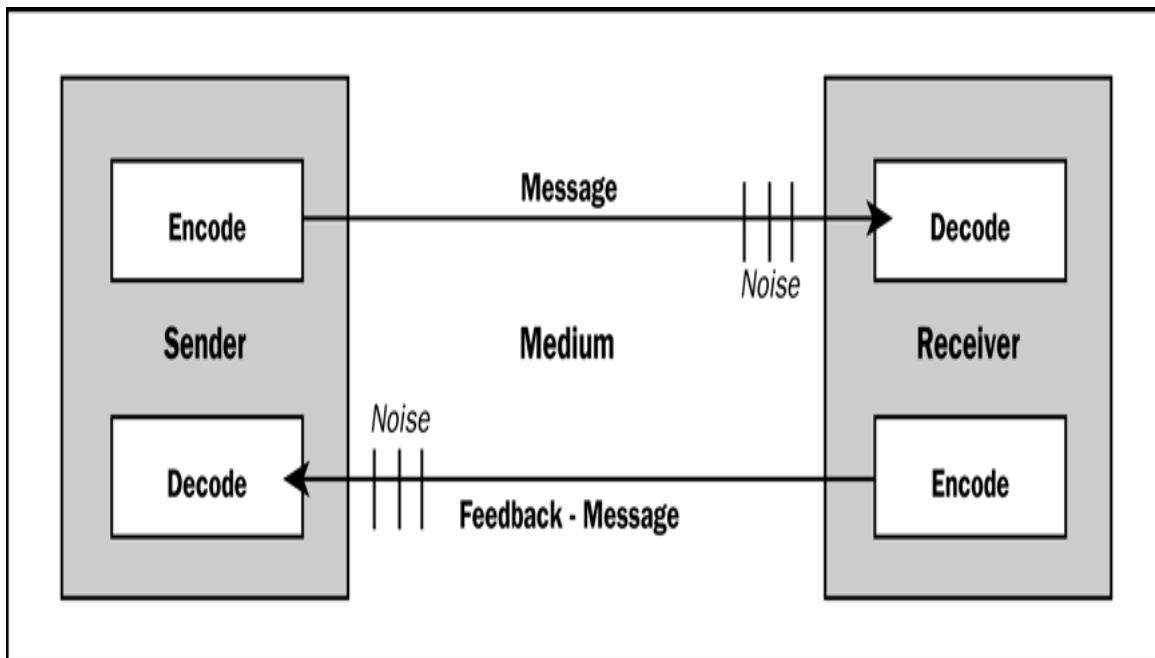
Communication Management Processes

1. Plan Communications
2. Manage Communication
3. Monitor Communication

1 - Plan Communications

The process of developing an appropriate approach and plan for project communications activities based on the information needs of each stakeholders or group, available organizational assets and the needs of the project

Communication Model



Communication Methods

Interactive Communication:

A Multidirectional, most efficient to ensure a common understanding.

Push communication:

Sent to specific recipient, ensure that information is distributed but does not ensure that it reached or understood.

Pull communication:

For a large volume of information or audience, intranet, e-learning etc.

Communication Plan

Develop the Communication Plan



2 - Manage Communication

The process of ensuring timely & appropriate collecting, creation, distributing, storage, retrieving, management, monitoring and the ultimate disposition of project information.



Conflict Management Techniques

- Confronting (Problem Solving)
- Forcing
- Smoothing
- Withdrawal
- Compromising

3 - Monitor Communication

Monitor Communications is the process of monitoring of communications throughout the entire project life cycle to ensure the information needs of project stakeholders are met



Scope Management

Project Scope Management

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

Project Scope Management

1. Plan scope Management
2. Collect Requirements
3. Define Scope
4. Create WBS
5. Validate Scope
6. Control Scope

Key Concepts

- Product scope: Product features and function
- Project scope: Work performed to deliver product or service
- In predictive life cycle, deliverable are defined at the beginning and changes are managed progressively
- In adaptive (Agile) lifecycle, deliverables are defined over an iterative process usually marking the end of each phase
- Product in the Agile mode will be decomposed into smaller components (backlog) that are prioritized based on the customer preference.
- Buyer should be continuously engaged to provide feedback on the deliverables and ensure that the backlog is delivering their current needs

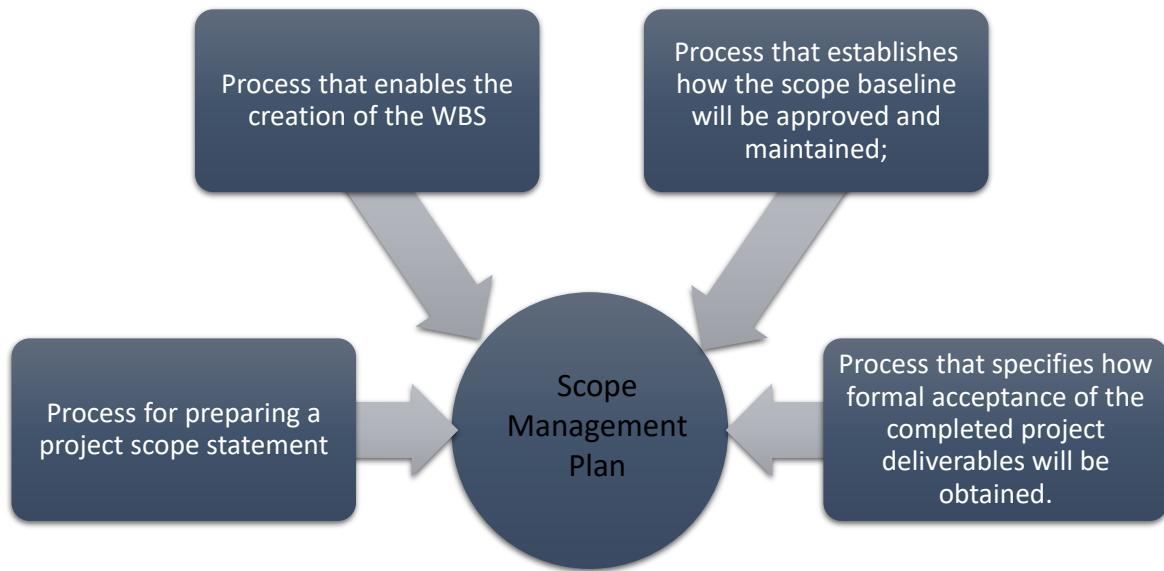
1 - Plan Scope Management

The process of creating a scope management plan that documents how the project & product scope will be defined, validated, and controlled.



Scope Management Plan

The scope management plan is a component of the project management plan that describes how the project scope will be defined, developed, monitored, controlled, and verified



2 - Collect Requirement

We can classify the requirement into:

1. Business Requirements
2. Stakeholder Requirements
3. Solution Requirements
 - a. Functional Requirements
 - b. Non-Functional Requirements
4. Quality Requirements
5. Transition Requirements

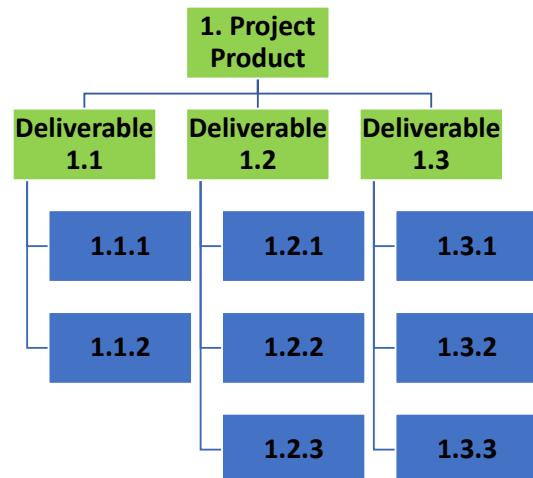
3 - Define Scope

Define scope is the process of developing a detailed description of the project and product.



4 - Create WBS

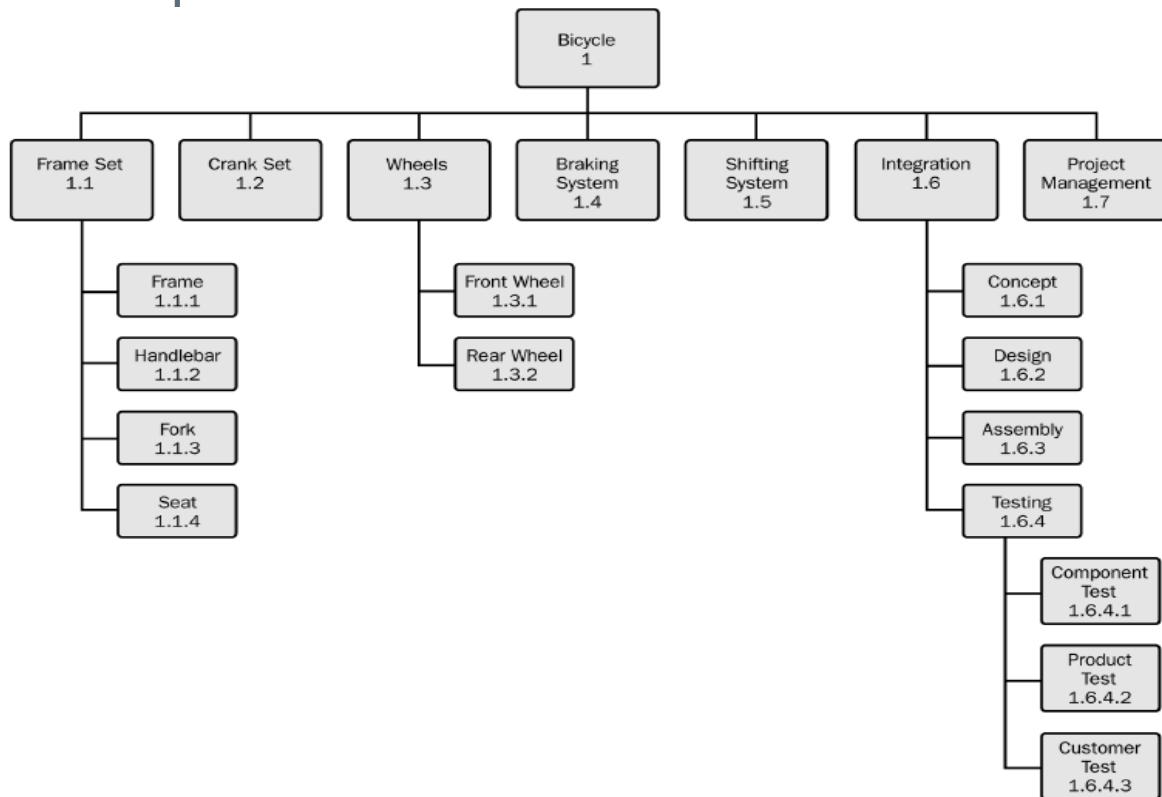
Create WBS is the process of subdividing project deliverables and project work into smaller, more manageable components



WBS

- The WBS is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team, to accomplish the project objectives and create the required deliverables.
- With each descending level of the WBS representing an increasingly detailed definition of the project work.
- A control account is a management control point where scope, cost, and schedule are integrated and compared to the earned value for performance measurement.
- The planned work is contained within the lowest level WBS components, which are called work packages

Example



Develop the WBS



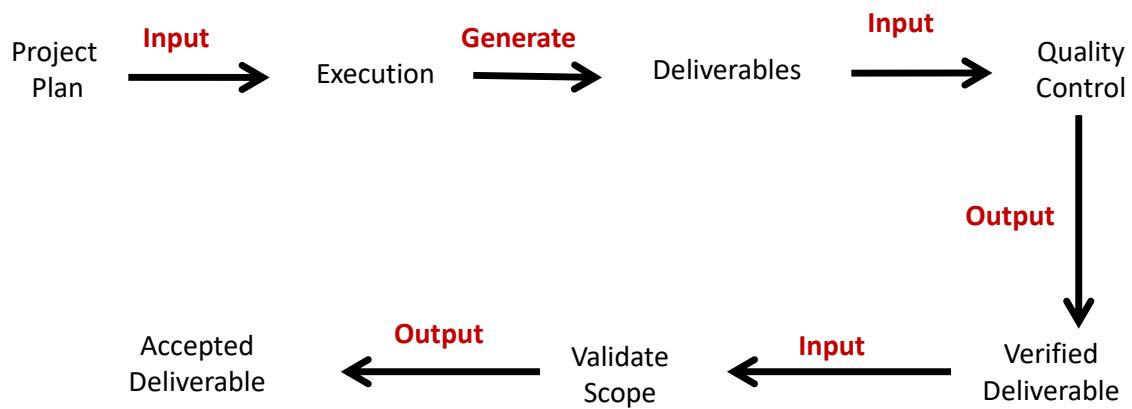
5 - Validate Scope

- ✓ Validate scope is the process of formalizing acceptance of the completed project deliverables.

- ✓ Validating scope includes reviewing deliverables with the customer or sponsor to ensure that they are completed satisfactorily and obtaining formal acceptance of deliverables by the customer or sponsor



Validate Vs. Verify



6 - Control Scope

- Control Scope monitors the status of the scope (project and product) and manages changes to the scope baseline.
- All change requests & recommended corrective/preventive actions are processed through the ICCP (Perform Integrated Change Control) process.
- Uncontrolled changes to scope are called “scope creep”

DAY 3

Schedule Management

Project Schedule Management

Project Schedule Management includes the processes required to manage the timely completion of the project.



Key Concepts

- Project scheduling provides a detailed plan that represents how and when the project will deliver its products, services and results.
- The schedule provides basis for communications.
- The project management team selects a scheduling method, such as critical path or an agile approach.
- When possible, the detailed project schedule should remain flexible throughout the project.
- For smaller projects, developing the schedule model steps are so tightly linked that they are viewed as a single process that can be performed by a person over a relatively short period of time.

TRENDS AND EMERGING PRACTICES

- Iterative scheduling with a backlog. This scheduling method is appropriate for many projects using adaptive life cycles for product development. The benefit of this approach is that it welcomes changes throughout the development life cycle.
- On-demand scheduling, typically used in a Kanban system, is based on the theory-of constraints and pull-based scheduling concepts from lean manufacturing.

Schedule Management Processes

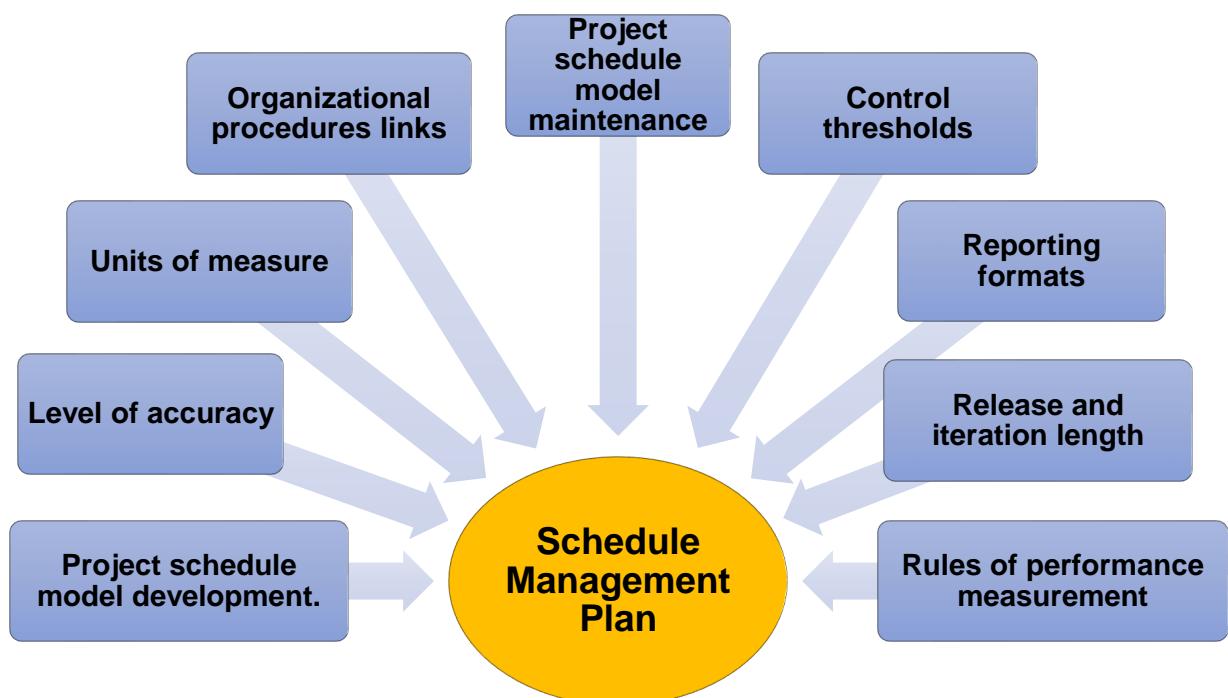
1. Plan Schedule Management
2. Define Activities
3. Sequence Activities
4. Estimate Activity Durations
5. Develop Schedule
6. Control Schedule

1 - Plan Schedule Management

The process of establishing the policies, procedures, and documentation for planning, developing, managing, executing, & controlling the project schedule



Schedule Management Plan



2 - Define Activities

The process of identifying and documenting the specific actions to be performed to produce the project deliverable

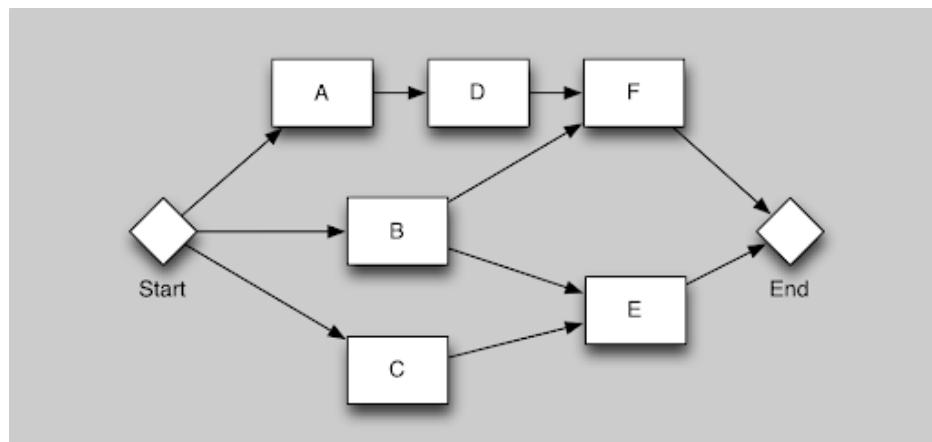


Activity list / Activity Attributes

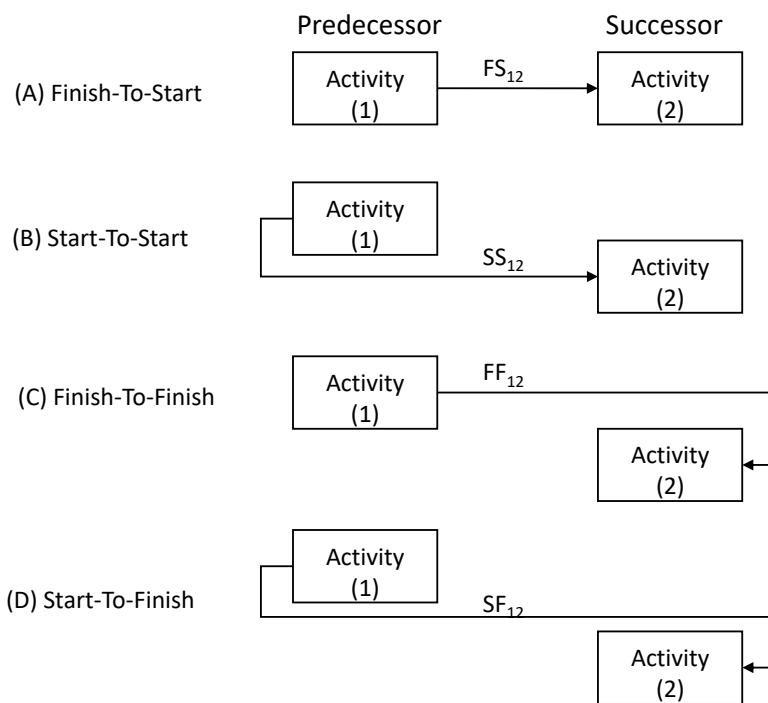
| Activity List | | | |
|-----------------------------------|--|---|---|
| Project: Billing Group Relocation | | | Date: 03/01/20xx |
| Activity ID No | Activity Name | Description of Work | Responsibility |
| 1001 | Complete work area parking | This activity consists of packing all billing group employee work areas into clearly labeled boxes with employee names written on the outside. This activity also includes disconnecting all workstations, telephone and electrical items. | J. Doe has primary responsibility and P. Brown is the alternate |
| 1002 | Complete preparation of new work area | This activity consists of ensuring electrical, telephone and network services are turned on for employees in the new work area. This activity also includes labeling and configuring cubicles per the workspace layout and ensuring all work areas are complete and serviceable. The workspace should also be safe and free of trash and clutter. | F. White is responsible for this activity |
| 1003 | Transport employee equipment | This activity consists of loading packed boxes into the company vehicle, transporting them to the new workspace and unloading the boxes into the labeled cubicles in the new location. Employees will unpack their respective boxes. | B. Black is responsible for this activity |
| 1004 | Complete discarding/recycling boxes and moving materials | This activity includes turning in all unused packing and shipping materials as well as breaking down and recycling all boxes. This also includes discarding used packing material in the appropriate bins. | B. Black has primary responsibility and P. Brown is the alternate |
| 1005 | Complete new workspace connections | This activity includes connecting all telephone services, network services and any other electrical items for employees in their new workspace. | F. White is responsible for this activity |

3 - Sequence Activities

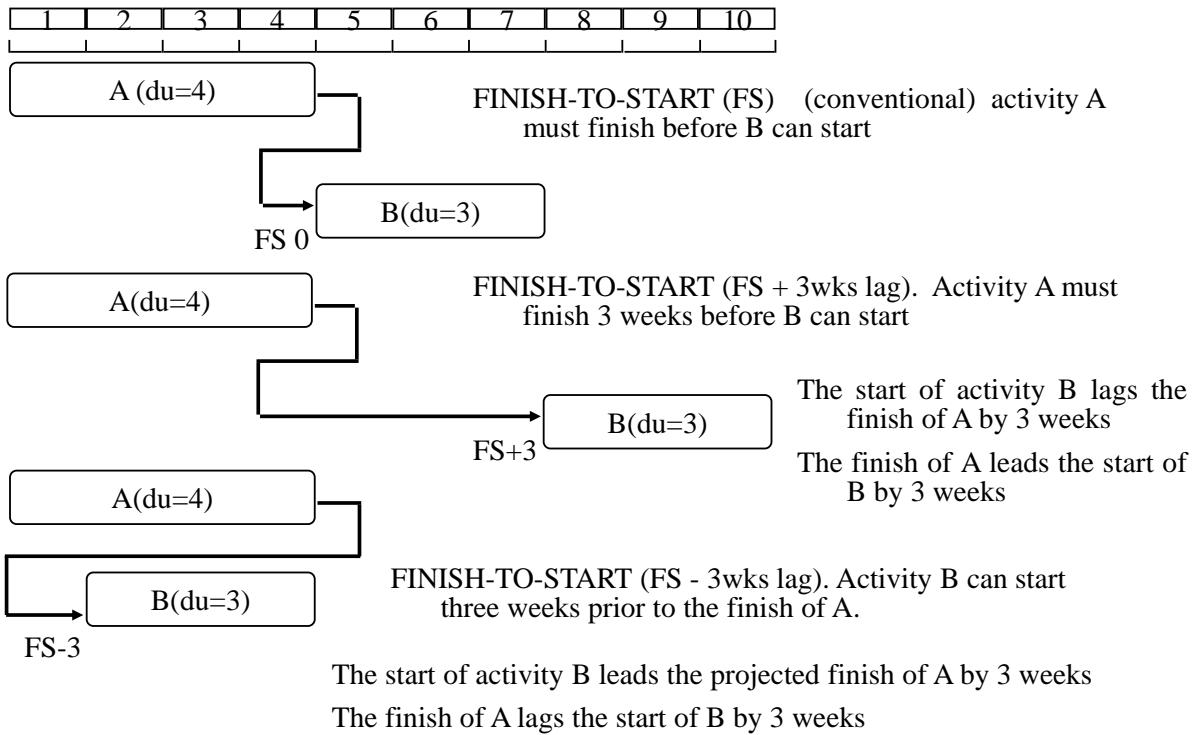
The process of identifying and documenting relationships among the project activities .



Dependencies Relationships



Lags and Leads

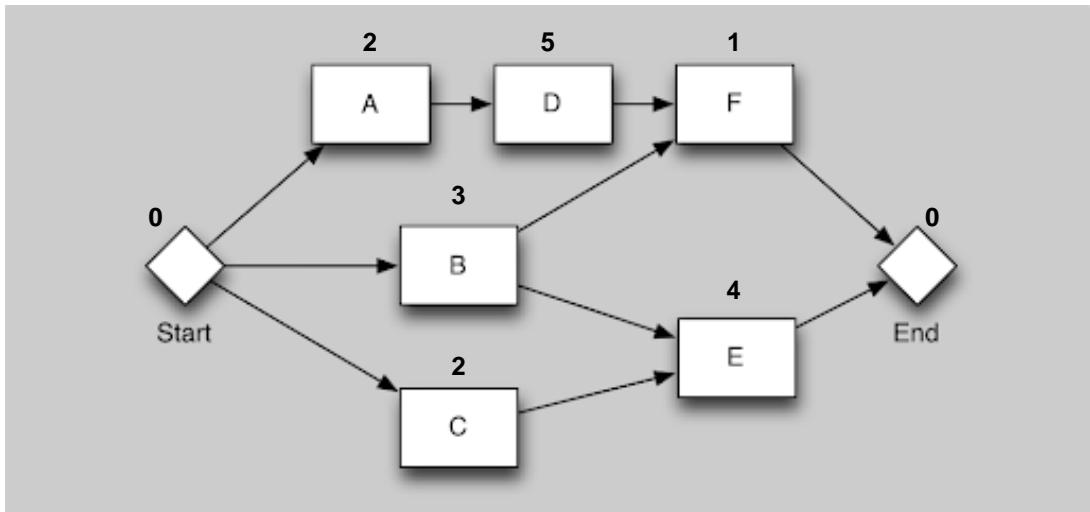


4 - Estimate Activity Durations

The process of estimating the number of work periods needed to complete individual activities with the estimated resources



Estimate Activity Durations



***Develop the network
Diagram***



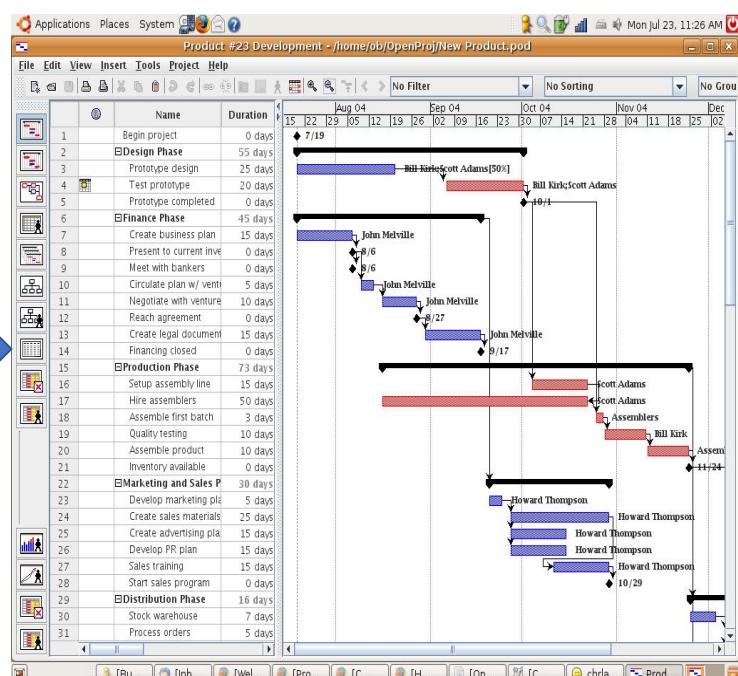
5 - Develop Schedule

The process of analyzing activity sequences , durations, resource requirements, and schedule constraints to create the project schedule model for project execution and monitoring and controlling

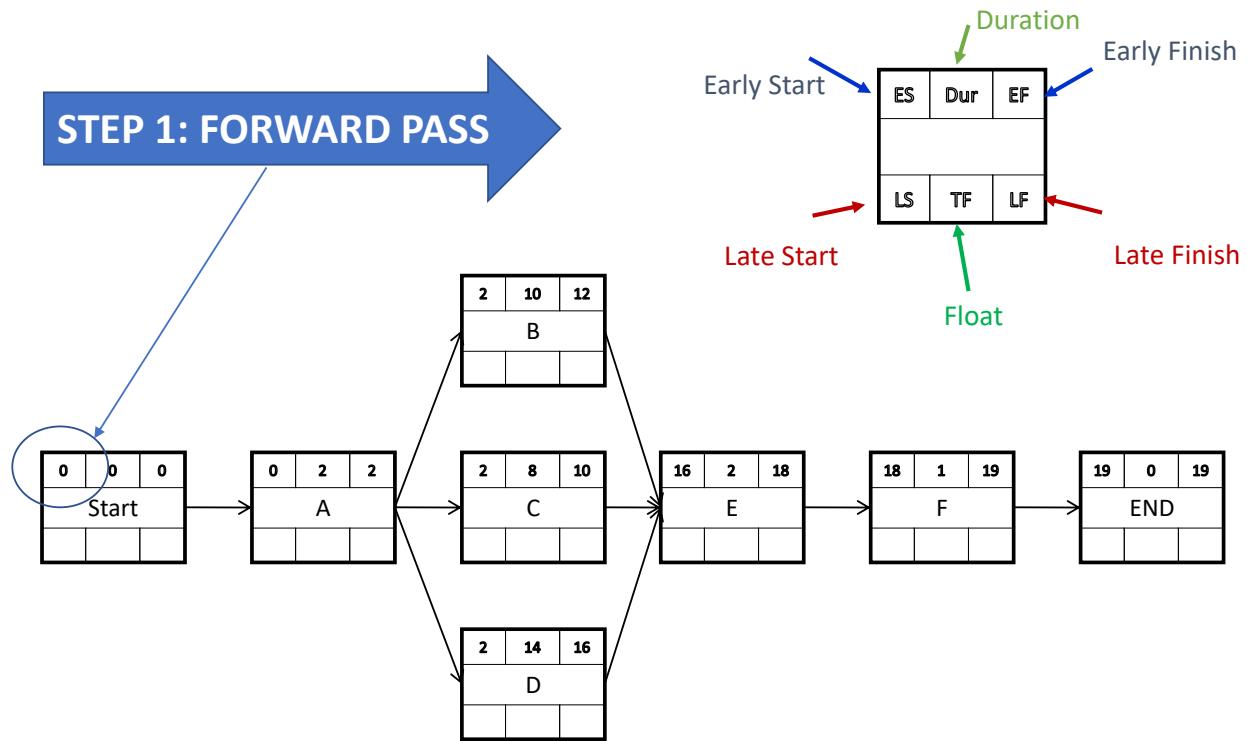
5 - Develop Schedule

- Activities,
- Durations,
- Logic
- Dependencies,
- Resources requirements,
- Schedule constraints

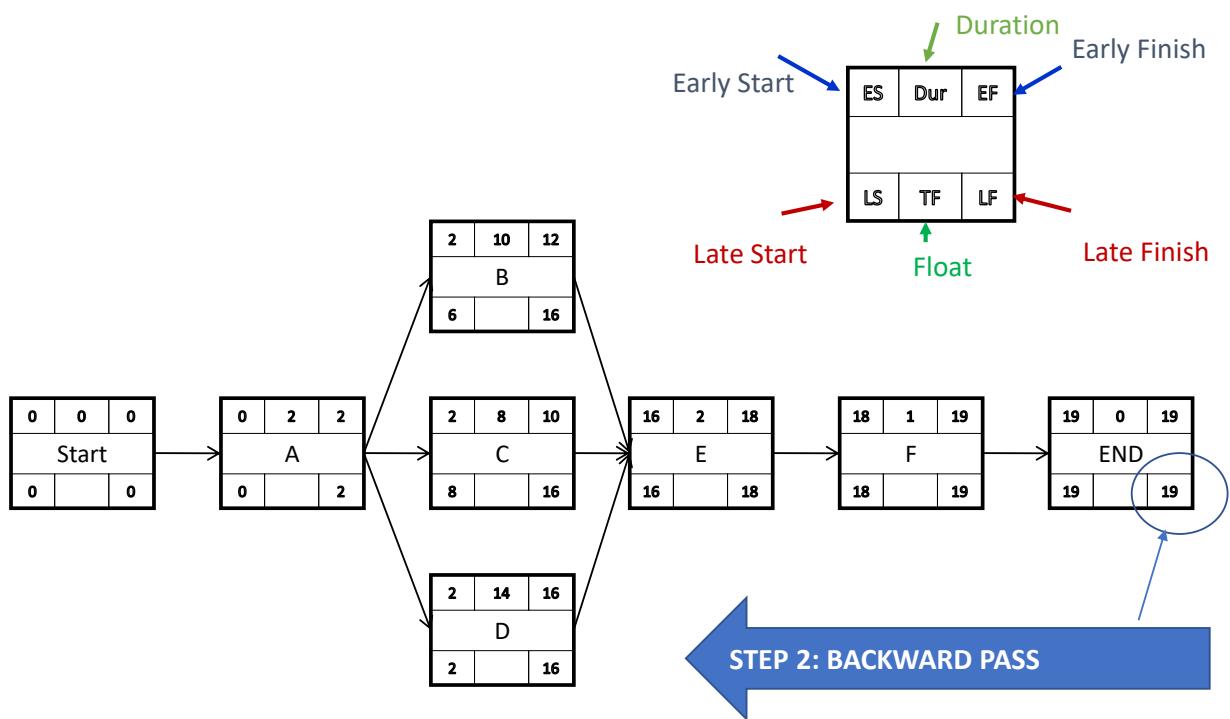
Scheduling using CPM



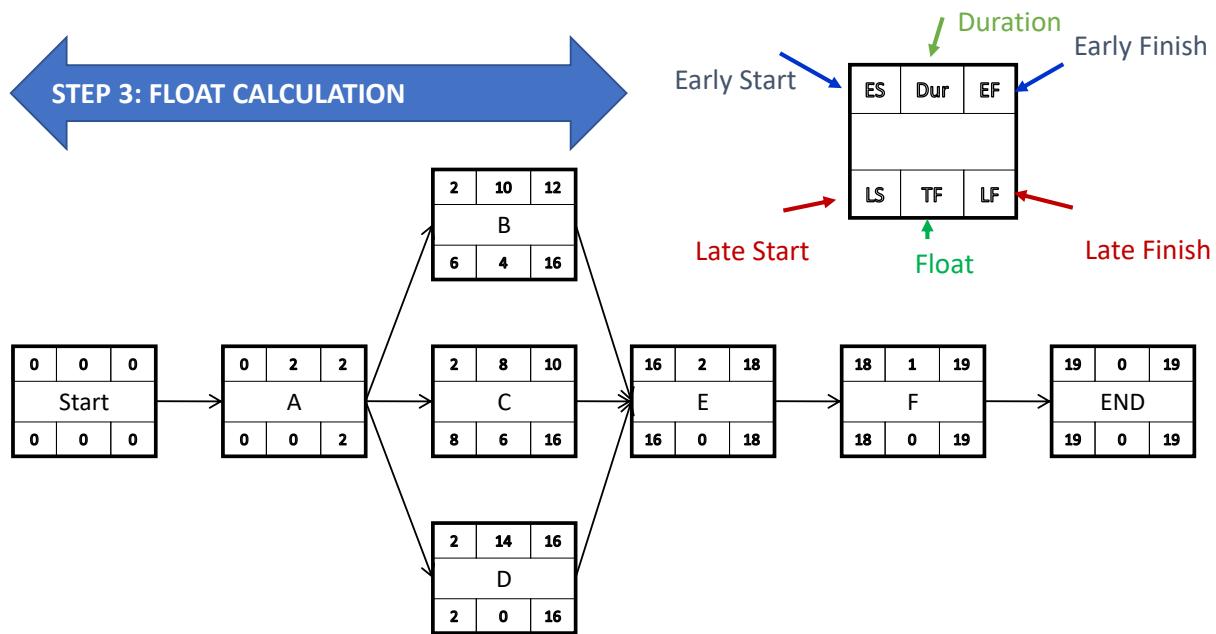
CRITICAL PATH METHOD



CRITICAL PATH METHOD

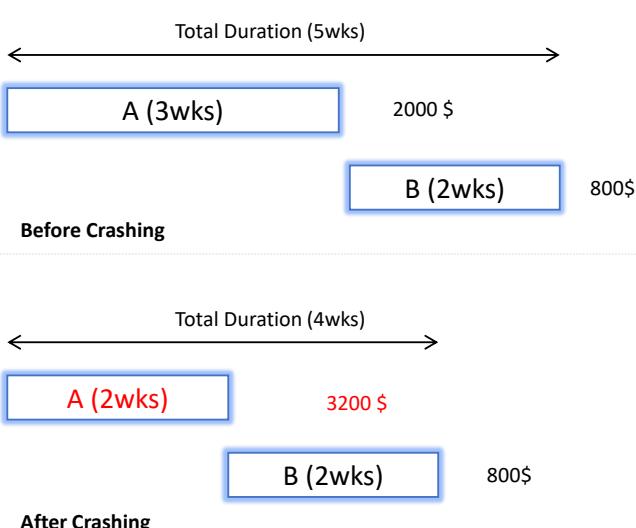


CRITICAL PATH METHOD

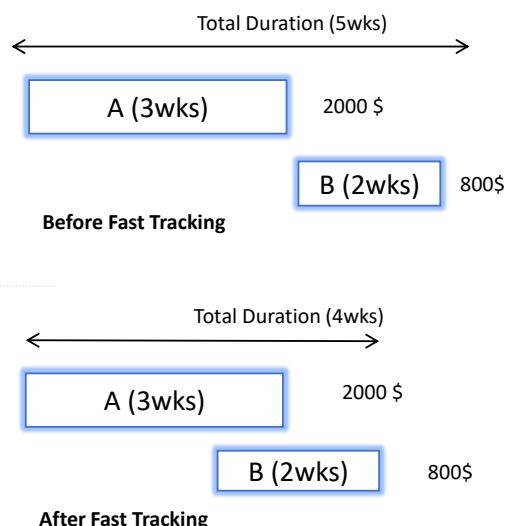


Duration Compression

1- Crashing



2 - Fast Tracking

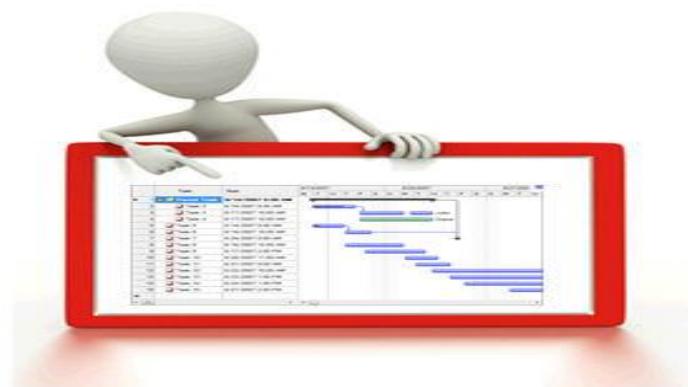


Use CPM to Calculate the Total Float



6 - Control Schedule

The process of monitoring the status of the project to update the project schedule and managing changes to the schedule baseline.



Cost Management

Cost Management

Project Cost Management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget



KEY CONCEPTS

- Cost Management is mainly concerned with the cost of the resources.
- The effect of project decisions on the subsequent recurring cost of using and maintaining resources.
- Each stakeholder may measure the cost in different way.
- Financial performance may be performed outside the project

TRENDS & EMERGING PRACTICE

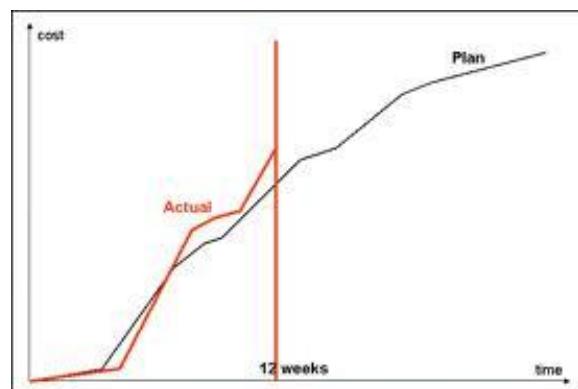
- Usage of Earned schedule
- SPI_T
- Actual time

Cost Management Process

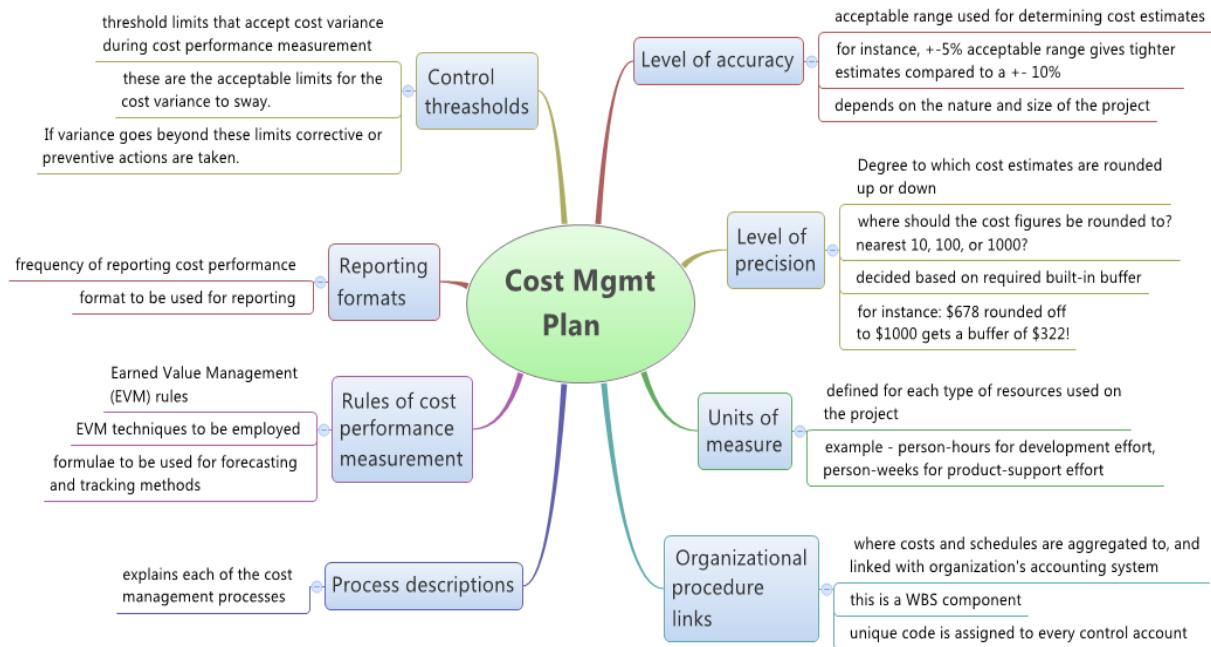
1. Plan Cost Management
2. Estimate Cost
3. Determine Budget
4. Control Cost

1 - Plan Cost Management

The process of defining how the project costs will be estimated, budgeted, managed, monitored , and controlled



Cost Management Plan



2 - Estimate Costs

The process of developing an approximation of the cost of resources needed to complete project work

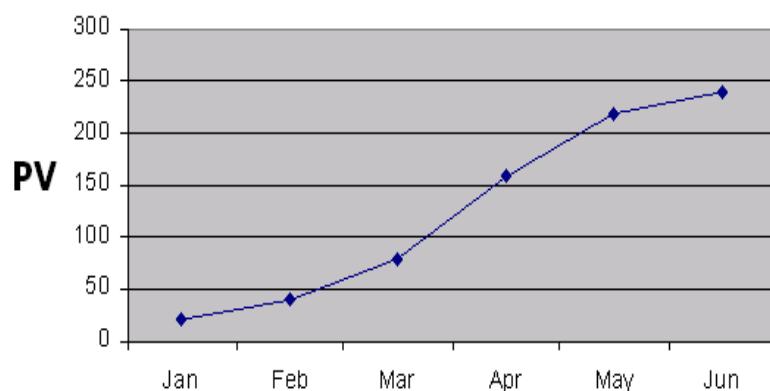


Type of cost

- ✓ Direct # Indirect
- ✓ Variable # Fixed

3 - Determine Budget

- The process of aggregating the estimated costs of individual activities or work package to establish an authorized cost baseline
- This baseline includes all authorized budgets, but excludes management reserves



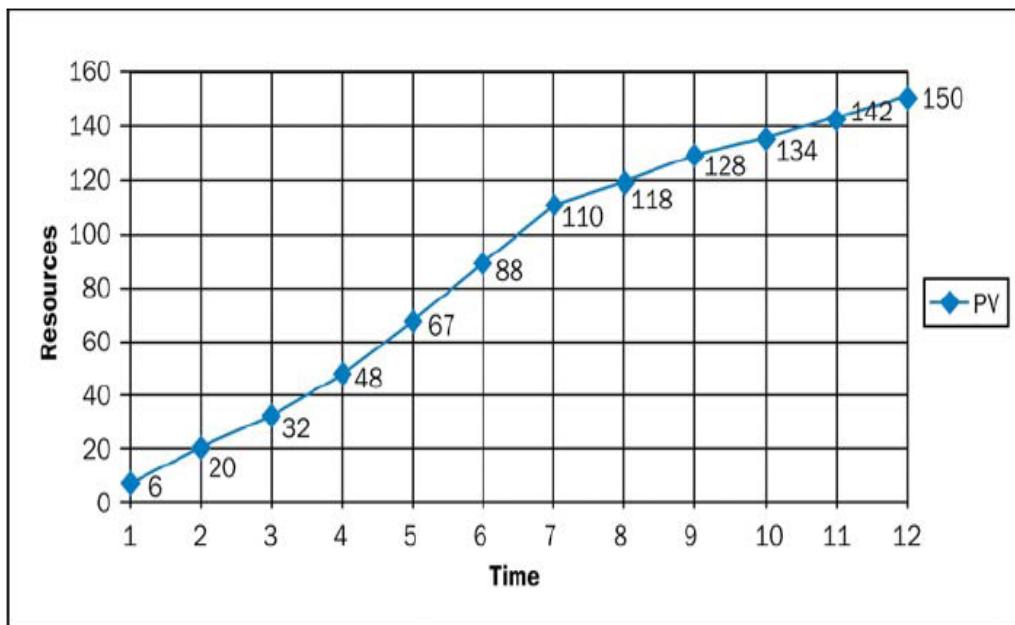
Cost Baseline – S Curve

- A time-phased budget that is used as a basis against which to measure, monitor, and control overall cost performance on the project.
- The cost baseline is a component of the project management plan.
- Many projects, especially large ones, have multiple cost or resource baselines.

Cost Baseline – S Curve

| Task | Budget | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------------|------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|----------|----------|----------|
| | | 6 | 6 | | | | | | | | | | |
| 1 | 12 | 12 | 8 | 12 | 16 | 12 | | | | | | | |
| 2 | 48 | | 8 | 12 | 16 | 12 | 7 | 21 | | | | | |
| 3 | 28 | | | | 7 | 18 | | | | | | | |
| 4 | 18 | | | | | 4 | 8 | 10 | 6 | | | | |
| 5 | 28 | | | | | | 4 | 8 | 8 | 8 | | | |
| 6 | 16 | | | | | | | 8 | 8 | 8 | | | |
| Σ | 150 | 6 | 14 | 12 | 16 | 19 | 21 | 22 | 8 | 10 | 6 | 8 | 8 |
| CUM | - | 6 | 20 | 32 | 48 | 67 | 88 | 110 | 118 | 128 | 134 | 142 | 150 |

Cost Baseline – S Curve

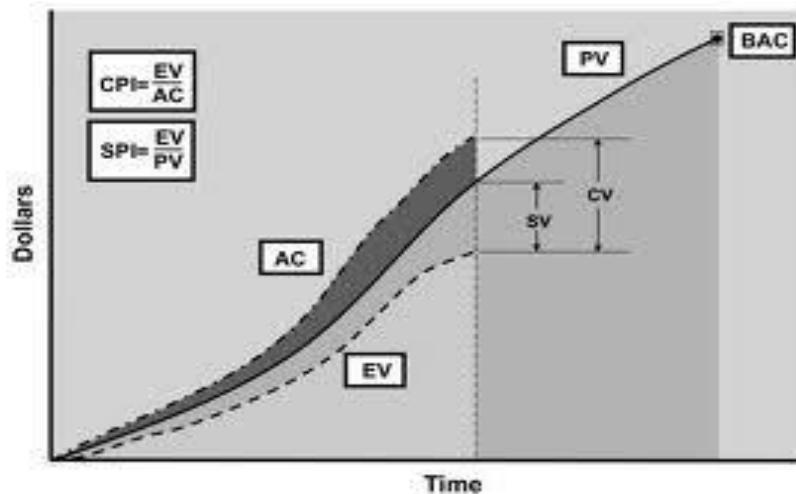


Develop the S-curve

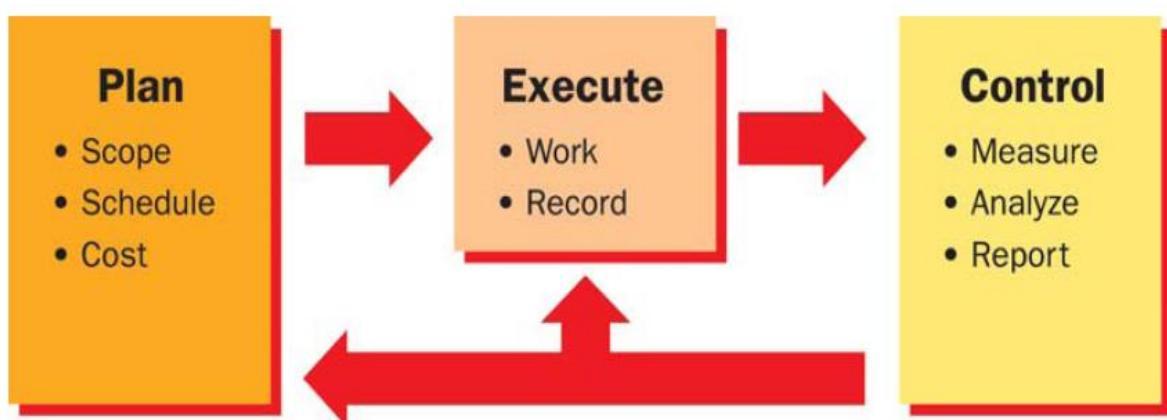


4 - Control Costs

The process of monitoring the status of the project to update the project costs and manage changes to the cost baseline.



Earned Value Management

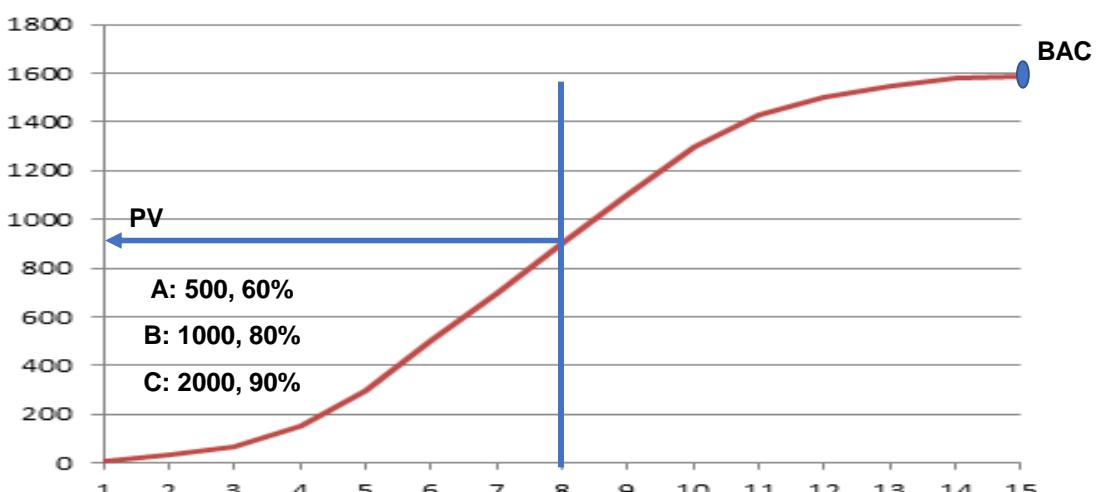


EVM and Basic PM Process

Earned Value Management

1. Planned Value (PV)
2. Earned Value (EV)
3. Actual Costs (AC)
4. Budget at Completion (BAC)

Earned Value Management



$$EV = (500 * 60\%) + (1000 * 80\%) + (2000 * 90\%) = 300 + 800 + 1800 = 2900$$

Earned Value Management

| ACRONYM | TERM | INTERPRETATION | OLD ACRONYM |
|-----------|------------------------|--|---------------------------------------|
| PV (BCWS) | Planned Value | What is the estimated value of the work <i>to be done?</i> | BCWS: Budgeted cost of work scheduled |
| EV (BCWP) | Earned Value | What is the estimated value of the work <i>actually accomplished?</i> | BCWP: Budgeted cost of work performed |
| AC (ACWP) | Actual Cost | What is the <i>actual cost incurred?</i> | ACWP: Actual cost of work performed |
| BAC | Budget at Completion | How much did we <i>BUDGET</i> for the <i>TOTAL JOB?</i> | |
| EAC | Estimate at Completion | What do we currently expect <i>TOTAL project to cost?</i> | |
| ETC | Estimate to Complete | From this point on, how much <i>MORE</i> do we expect to cost to finish the project? | |
| VAC | Variance at Completion | How much <i>MORE or UNDER budget</i> do we expect to be at the end of the project? | |

Earned Value Management

| NAME | FORMULA | INTERPRETATION |
|----------------------------------|----------------|--|
| Cost Variance (CV) | $CV = EV - AC$ | NEGATIVE is over budget, POSITIVE is under budget. |
| Schedule Variance (SV) | $SV = EV - PV$ | NEGATIVE is behind schedule, POSITIVE is ahead of schedule. |
| Cost Performance Index (CPI) | $CPI = EV/AC$ | We are getting \$ _____ out of every 1 \$. |
| Schedule Performance Index (SVI) | $SPI = EV/PV$ | We are only progressing at _____ % of the rate originally planned. |
| Estimate To Complete (ETC) | $EAC - AC$ | How much more will the project cost? |
| Variance At Completion (VAC) | $BAC - EAC$ | How much over budget will be at the end of the project? |

Earned Value Management

| NAME | FORMULA | INTERPRETATION |
|------------------------------|---|--|
| Estimate at Completion (EAC) | | As of now, how much do we expect the total project to cost? \$_____ |
| | BAC/CPI | Used if no variances from the BAC have occurred or you will continue at the same rate of spending. |
| | AC+ETC | Actual plus a new estimate for remaining work. Used when original estimate was fundamentally flawed. |
| | AC+BAC-EV | Actual to date plus remaining work. Used when current variances are thought to be a typical of the future. |
| | AC+ $\frac{(\text{BAC}-\text{EV})}{\text{CPI} \times \text{SPI}}$ | Actual to date plus remaining budget modified by performance. Used when current variances are thought to be typical of the future. |

TCPI

What is the cost performance that should be achieved (on remaining work) in order to meet certain management objective

- $\text{TCPI} = (\text{BAC} - \text{EV}) / (\text{BAC} - \text{AC})$

Remaining work / Remaining Fund

- $\text{TCPI} = (\text{BAC} - \text{EV}) / (\text{EAC} - \text{AC})$

Remaining work / Remaining Fund

Develop Earned Value Management Report



Quality Management

Quality management

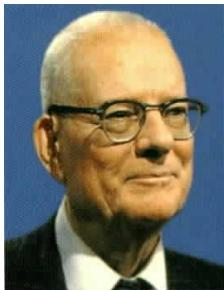
- It includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements in order to meet stakeholder's objectives.
- Quality Management addresses both of the:
 - ✓ Management of the project
 - ✓ The product of the project

Quality Concepts



- Grade is a category assigned to products or services having the same functional use but different technical characteristics.
- A product can be of high quality (no obvious defects, readable manual) and low grade (a limited number of features), or of low quality (many defects, poorly organized user documentation) and high grade (numerous features).

Quality Concepts



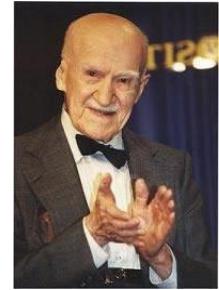
DEMING, W. Edward

- Continuous improvement PDCA (Plan–Do–Check–Act)
- Top down support (top management support)



CROSBY, Philip

- Performance standard is “Zero defect ”
- Cost of quality is measured by cost of non-conformance
- Conformance to requirements
- Quality comes from Prevention



JURAN, J. Moses

- Fitness for use (The product must satisfy real needs)
- Juran's Trilogy
 - ✓ Quality improvement,
 - ✓ Quality planning and
 - ✓ Quality Control

TRENDS & EMERGING PRACTIC

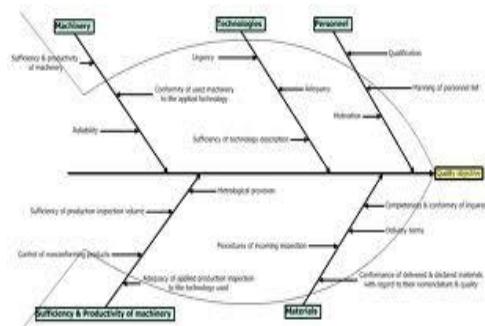
- Customer Satisfaction
- Continual Improvement
- Management Responsapility
- Mutually Beneficial Partnership with Suppliers

Quality Management Process

1. Plan Quality Management
2. Manage Quality
3. Control Quality

1 - Plan Quality

The process of identifying quality requirements and/or standards for the project and its deliverables, and documenting how the project will demonstrate compliance with quality requirements and/or standards



Cost of quality(COQ)

Cost of quality(COQ) refers to the total cost of all efforts to achieve product/service quality, and includes all the work to ensure conformance to requirements, as well as all work resulting from non-conformance to requirements.



Quality Management Plan

Quality standards that will be used by the project

Quality objectives of the project;

Quality roles and responsibilities

Project deliverables and processes subject to quality review

Quality control and quality management activities planned for the project

Quality tools that will be used for the project

Major procedures relevant for the project (dealing with non-conformance, corrective actions procedures,& continuous improvement procedures

2 - Manage Quality

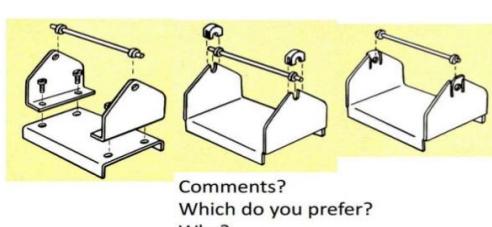
The process of translating the quality management plan into executable quality activities that incorporate the organization's quality policies into the project.



Design for X

- It is a set of technical guidelines that may be applied during the design of a product for the optimization of a specific aspect of the design
- Can control or even improve the product's final characteristics.
- The X in DfX can be different aspects of product development
- Using the DfX may result in cost reduction, quality improvement, better performance, and customer satisfaction.

Three solutions to the same design issue.



3 - Control Quality

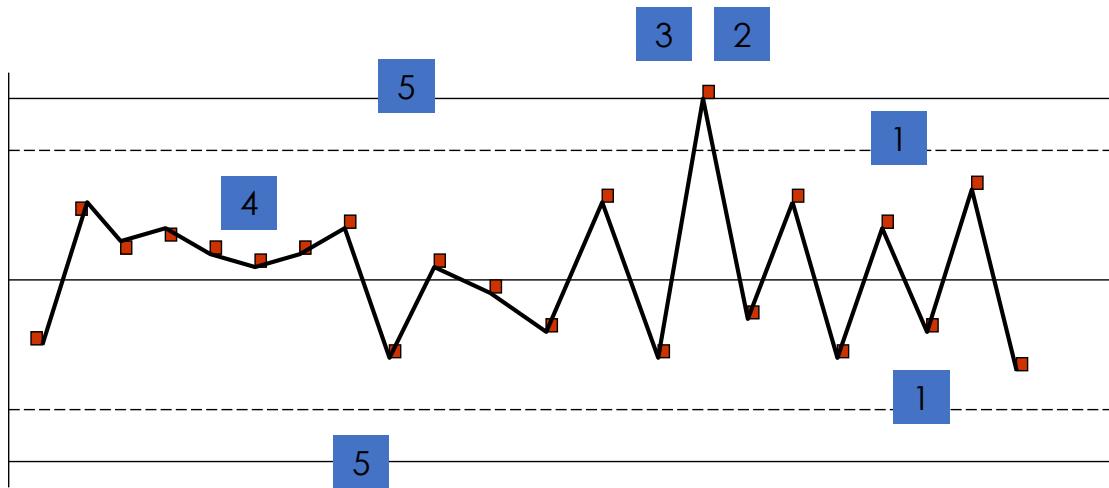
The process of monitoring and recording the results of executing the quality management activities to assess performance and ensure the project outputs are complete, correct and meet customer expectations.



Control Chart

- Graphic displays of the results, over time, of a process; used to assess whether the process is in control.
- Identify the allowable range of variation for particular product characteristic
- The process average is the mean of the averages for the samples taken over a long period of time

Control Chart



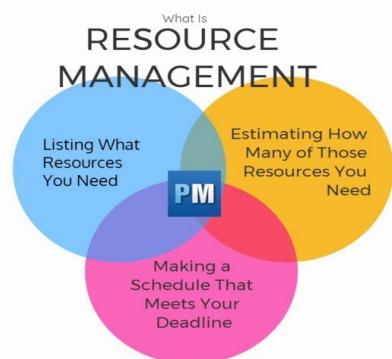
- 1.Upper & lower control limit
- 2.Assignable cause
- 3.The process is out of control
- 4.Rule of seven
- 5.Specification limits

DAY 4

Resources Management

Project Resource Management

Project Resource Management includes the processes and activities that are needed for successful completion of the project and to ensure that the right resources are available to the project manager and the project team.



KEY CONCEPTS

- Resources are divided into two categories, physical resources (facilities, equipment, material), and human resources.
- In order for the PM to successfully influence his team members, he should be aware of aspects such as team environment, culture issues within the organization, internal and external policies and organization chart management
- For the physical resource management, the PM should have information regarding resource demand, configuration, and the supply chain. Having that will enable him to secure critical equipment on time and order the proper quantities to fulfill project demand as well as keeping inventory cost as low as possible.

Resource Management Processes

There are six processes in this knowledge area:

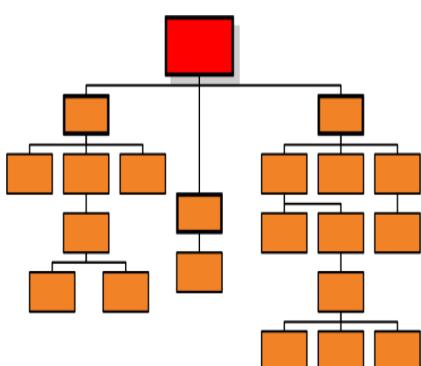
1. Plan Resource Management
2. Estimate Activity Resources
3. Acquire Resources
4. Develop Team
5. Manage Team
6. Control Resources

1 - Plan Resource Management

The process of defining how to estimate, acquire, manage, and use physical and human project resources.



Organization Charts and Position Descriptions



Hierarchical

| Activity | Test | Develop |
|----------|------|---------|
| Mohamed | | |
| Ahmed | | |
| Ibrahim | | |
| | | |
| | | |
| | | |
| | | |

Matrix

Name: _____
Role: _____
Responsibility: _____
Authority: _____

Text oriented

RACI

| RACI Chart | | Person | | | | |
|------------|---|---------|--------|---------|-------|-----|
| Activity | | Mohamed | Khaled | Ibrahim | Maged | Amr |
| Define | A | R | I | I | I | |
| Design | I | A | R | C | C | |
| Develop | I | A | R | C | C | |
| Test | A | I | I | R | I | |

R = Responsible A = Accountable C = Consult I = Inform

Resource Plan

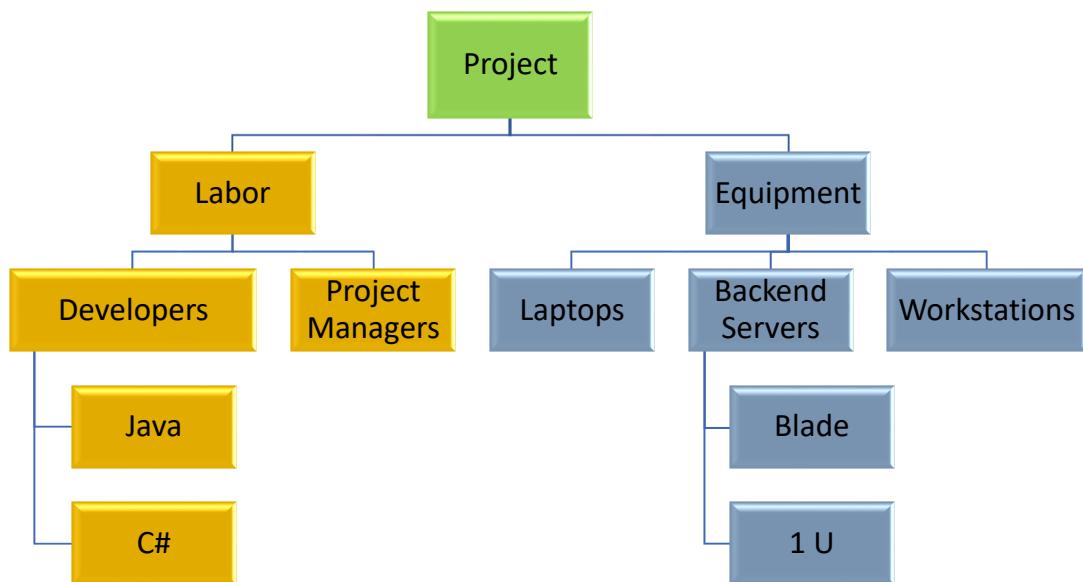


2 - Estimate Activity Resources

The process of estimating team resources and the type and quantities of material, equipment, and supplies necessary to perform project work



RBS



3 - Acquire Resources

The process of obtaining team members, facilities, equipment, material, supplies, and other resources necessary to complete project work



Pre-Assignment

- In some cases, project team members are known in advance
- This situation can occur if:
 - ✓ The project is the result of specific people being promised as part of a competitive proposal
 - ✓ The project is dependent on the expertise of particular persons
 - ✓ Some staff assignments are defined within the project charter.

Virtual Teams

Virtual teams can be defined as groups of people with a shared goal, who fulfill their roles with little or no time spent meeting face to face.



4 - Develop Team

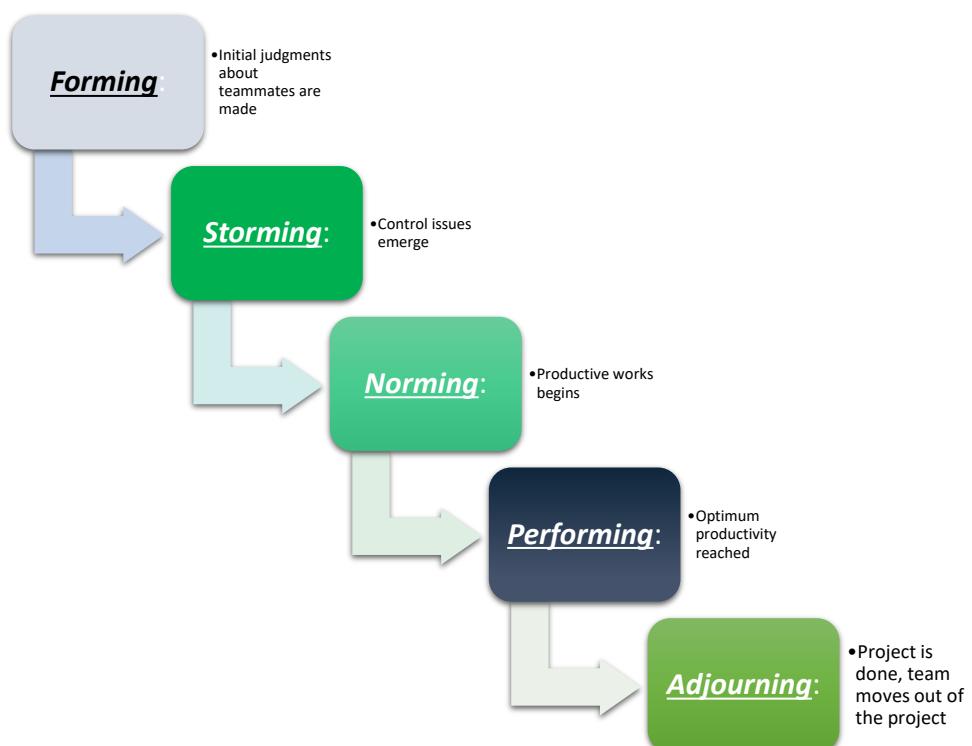
Develop Team is the process of improving the competencies, team interaction, and the overall team environment to enhance project performance

- ✓ Improve knowledge and skills of team members
- ✓ Improve feelings of trust and agreement among team members
- ✓ Create a dynamic and cohesive team culture

Interpersonal skills

- ✓ Leadership
- ✓ Team Building
- ✓ Motivation
- ✓ Communication
- ✓ Influencing
- ✓ Decision Making
- ✓ Political and Cultural Awareness
- ✓ Negotiations

Team Formation



5 - Manage Team

The process of tracking team member performance, providing feedback, resolving issues, and managing team changes to optimize project performance .



6 - Control Resources

The process of ensuring that the physical resources assigned & allocated to the project are available as planned, as well as monitoring the planned versus actual utilization of resources and taking corrective action as necessary

Risk Management

Project Risk Management

- Project Risk is defined as an uncertain event or condition that, if it occurs, has a positive or negative effect on a project objective.

- Project Risk Management Is the systematic process of Identifying, Analyzing, and Responding to project risk



Elements of Risk

Each risk has three elements:

1. Event
2. Probability: the likelihood of occurring
3. Impact: consequence or amount at stake

Key Concepts

- Every project is risky
- Stakeholders expectations (conflicting and changing)
- Each project has 2 levels of risk
 1. Individual Project Risk
 2. Overall Project Risk
- Risk management is iterative process

Trends and Emerging Practices

- Non-event Risk
- Project Resilience
- Integrated Risk Management

Project Risk Management

There are seven process in the this knowledge area

1. Plan Risk Management
2. Identify Risks
3. Perform Qualitative Risk Analysis
4. Perform Quantitative Risk Analysis
5. Plan Risk Responses
6. Implement Risk Responses
7. Monitor Risks

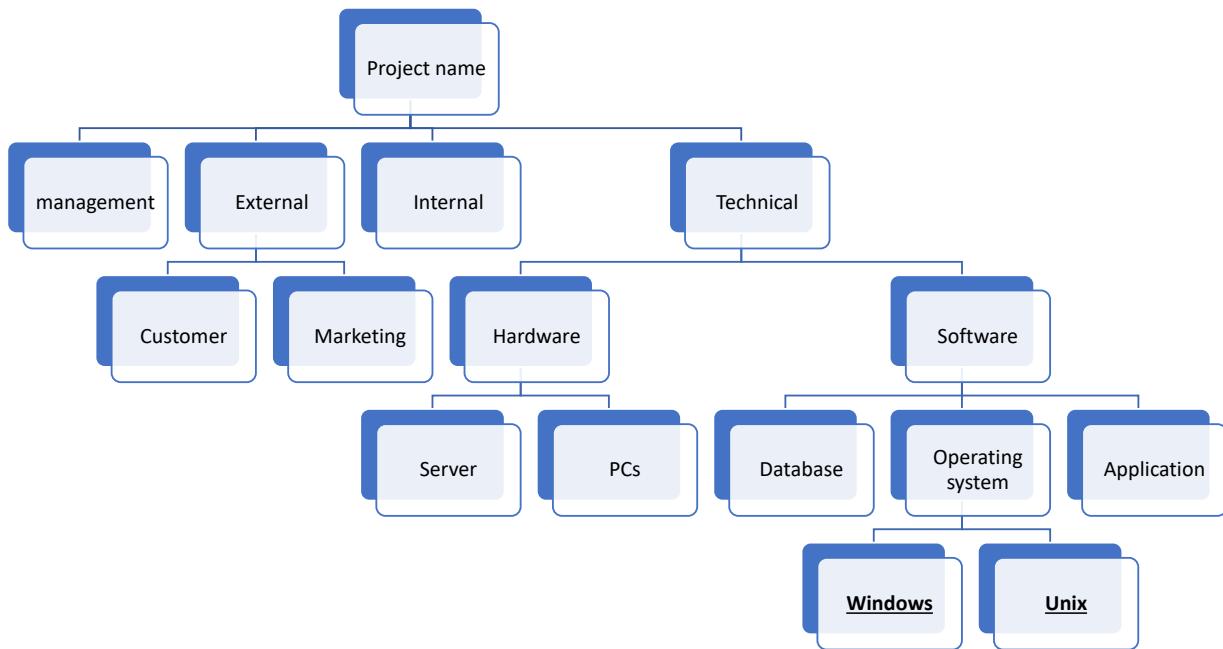
1 - Plan Risk Management

Risk management plan is the component that will manage and guide the work needed to complete the risk management activities in the project

Risk Management Plan

| Risk management activities | Assigned resources | Duration | Methodology (technique) | Budget (cost) |
|------------------------------------|--------------------|--------------------|-------------------------|---------------|
| Identify Risks | Mohamed | 4 weeks | Brainstorming | LE2000 |
| Perform Qualitative Risk Analysis | Amr | 3 weeks | P & I assessment | LE4000 |
| Perform Quantitative Risk Analysis | Khaled | 2 week | Monte Carlo | LE2500 |
| Plan Response to Risks | Ibrahim | 2 week | Response strategies | LE6000 |
| Monitoring & Control Risks | Ahmed | All Project period | Audit | LE18,000 |

RBS



PI Matrix

| Impact Probability | Very Low | Low | Moderate | High |
|-----------------------|----------|------|----------|------|
| High | H. VL | H. L | H. M | H. H |
| Moderate | M. VL | M. L | M. M | M. H |
| Low | L. VL | L. L | L. M | L. H |

2 - Identify Risks

The process of identifying individual project risks as well as sources of overall project risk and documenting their characteristics.



Risk Register

| ID | Risk name | Type | Category | Reason | Response | Probability | Impact | | | PI Score |
|----|-----------------------------|------|-----------|------------------------|----------|-------------|--------|-------|-------|----------|
| | | | | | | | Obj 1 | Obj 2 | Obj 3 | |
| 1 | Unit test takes longer time | T | Technical | Resource qualification | Avoid | | | | | |

Develop the Risk Register



3 - Perform Qualitative Risk Analysis

The process of prioritizing individual project risks for further analysis or action by assessing their probability of occurrence and impact as well as other characteristics

Risk Analysis

| ID | Risk name | Type | Category | Reason | Response | Probability | Impact | | | PI Score |
|----|-----------------------------|------|-----------|------------------------|----------|-------------|--------|-------|-------|----------|
| | | | | | | | Obj 1 | Obj 2 | Obj 3 | |
| 1 | Unit test takes longer time | T | Technical | Resource qualification | | M | L | H | - | MH |

PI Matrix

| Probability | | Impact Very Low | Low | Moderate | High |
|-------------|--|---------------------------|-----|-----------|------------------|
| High | | H VL R21 | H L | H M | H H R4 |
| Moderate | | M VL R23, R41 | M L | M M | M H <u>R1</u> |
| Low | | L VL R541, R19, R32 | L L | L M R3 | L H |

Perform Qualitative Risk Analysis



4 - Perform Quantitative Risk Analysis

The process of numerically analyzing the combined effect of identified individual project risks & other sources of uncertainty on overall project objectives

| | | Impact | | | | |
|-------------|----------------|---------------|----------|-------------|-----------|-----------------|
| | | Very Low 1 | Low 2 | Medium 4 | High 8 | Very High 16 |
| Probability | Very High 5 | 5 | 10 | 20 | 40 | 80 |
| | High 4 | 4 | 8 | 16 | 32 | 64 |
| | Medium 3 | 3 | 6 | 12 | 24 | 48 |
| | Low 2 | 2 | 4 | 8 | 16 | 32 |
| | Very Low 1 | 1 | 2 | 4 | 8 | 16 |

Expected Monetary Value (EMV)

| Status | Payoff | Probability % |
|----------------------------|---------|---------------|
| Good Market - Good Quality | 80,000 | 15 |
| Good Market - Poor Quality | 50,000 | 45 |
| Poor Market - Good Quality | 20,000 | 25 |
| Poor Market - Poor Quality | -20,000 | 15 |

Expected Payoff for good market = $80,000 * 0.15 + 50,000 * 0.45 = \text{LE } 34,500$

Expected Payoff for good quality = $80,000 * 0.15 + 20,000 * 0.25 = \text{LE } 17,000$

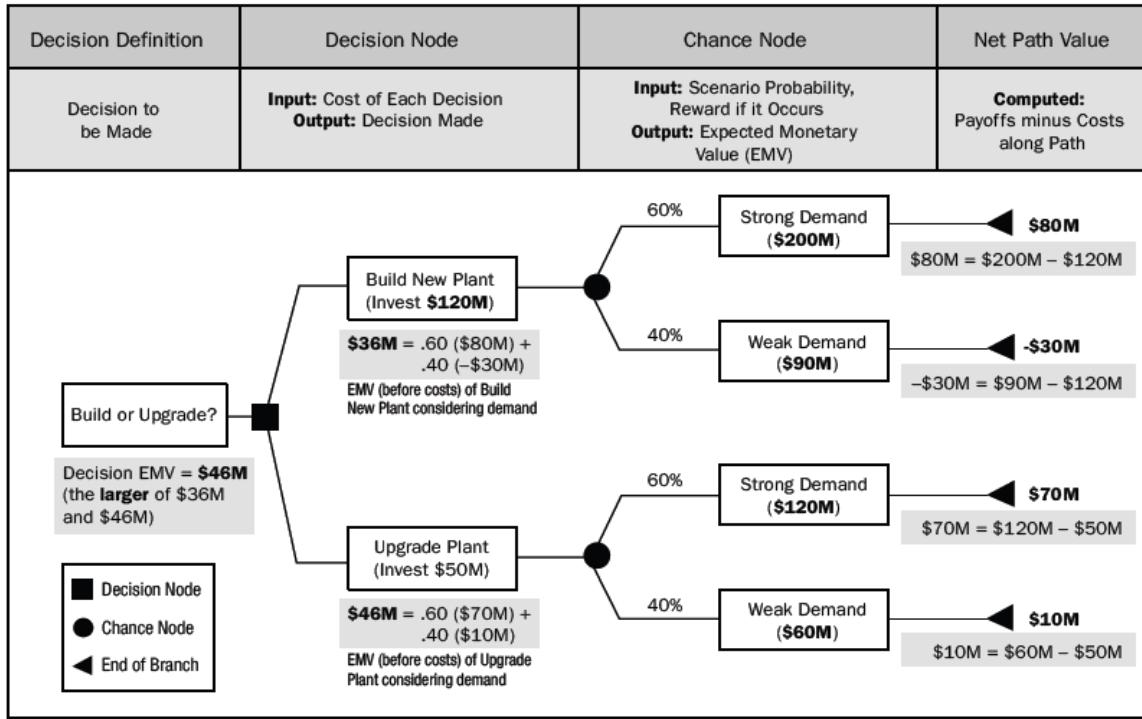
EMV = $80,000 * 0.15 + 50,000 * 0.45 + 20,000 * 0.25 + (-20,000) * 0.15 = \text{LE } 36,500$

Expected monetary value

Project BUDGET baseline = \$500,000

| Risk Event | Probability × Impact | Expected Value |
|--|--|------------------|
| 1. Weather Snowstorm in March (T) | $0.60 \times -\$60,000$ | -36,000 |
| 2. There is a 20% probability of the price of construction material dropping (O) | $0.20 \times \$100,000$ | 20,000 |
| 3. Labor quality (T) | $0.10 \times \$ -100,000$ | -10,000 |
| | Total value of risk events | 26,000 |
| | Project budget/ cost baseline | \$500,000 |
| | Adjusted total project baseline | 526,000 |

Decision Tree



5 - Plan Risk Responses

The process of developing options, selecting strategies and agreeing on actions to address overall project risk exposure as well as to treat individual project risks.



Threats Response Strategy

1. Avoid: Eliminate the threat by eliminating the cause
2. Mitigate: Reduce the probability or the impact
3. Transfer: Make another party responsible for the risk

Opportunity Response Strategy

1. Exploit: ensure that the opportunity is realized
2. Enhance: Increase the probability or the impact
3. Share: sharing responsibility and accountability with another party

Risk Escalate

- Appropriate when the project team or the project sponsor agrees that a risk is outside the scope of the project or that the proposed response would exceed the project manager's authority
- Escalated risks are managed at the program level, portfolio level, or other relevant part of the organization, and not on the project level.
- Risks are usually escalated to the level that matches the objectives that would be affected if the risk occurred.
- Escalated risks are not monitored further by the project team after escalation.

Risk Acceptance

The decision not to change the project plan to deal with a risk.

▪ WHY

- Extremely low possibility of occurrence
- No suitable risk response strategy is identified.

▪ HOW

- Passive: do nothing!
- Actively: contingency plan

Reserves

Reserves: Amount of money and/or time provided for in the project management plan to handle and manage cost, schedule, or performance risks in the project

- **Management reserves:**
- **Contingency reserves:**

Develop the Risk Response Strategies



6 - Implement Risk Responses

- The process of implementing agreed-upon risk response plans
- (It is performed throughout the project)



7 - Monitor Risks

The process of monitoring the implementation of agreed-upon risk response plans, tracking identified risks, identifying and analyzing new risks, & evaluating risk process effectiveness throughout the project



DAY 5

Procurement Management

Project Procurement Management

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team to perform the work. The topic presents two perspectives of procurement: The buyer and the seller



Key Concepts

- There can be significant legal obligations and penalties tied to the procurement process.
- The project manager is typically not authorized to sign legal agreements binding the organization.
- Agreements describe the relationship between two parties—a buyer and a seller, and should be written in a manner that complies with local, national, and international laws regarding contracts.
- Anything not in the contract cannot be legally enforced.
- The legally binding nature of a contract means it will be subjected to a more extensive approval process, often involving the legal department.

TRENDS AND EMERGING PRACTICES

- Advances in tools. e-procurement, BIM-Mandate, etc
- More advanced risk management. write contracts that accurately allocate specific risks to those entities most capable of managing them.
- Changing contracting processes. International contract conditions in response to globalization.
- Logistics and supply chain management. Long-lead items, back, primary and secondary back-up sources.
- Technology and stakeholder relations. Updates using webcams.
- Trial engagements. for initial deliverables and work products on a paid basis before making the full commitment

Project Procurement Management

1. Plan Procurements
2. Conduct Procurements
3. Control Procurements

1 - Plan Procurement Management

What, When, How

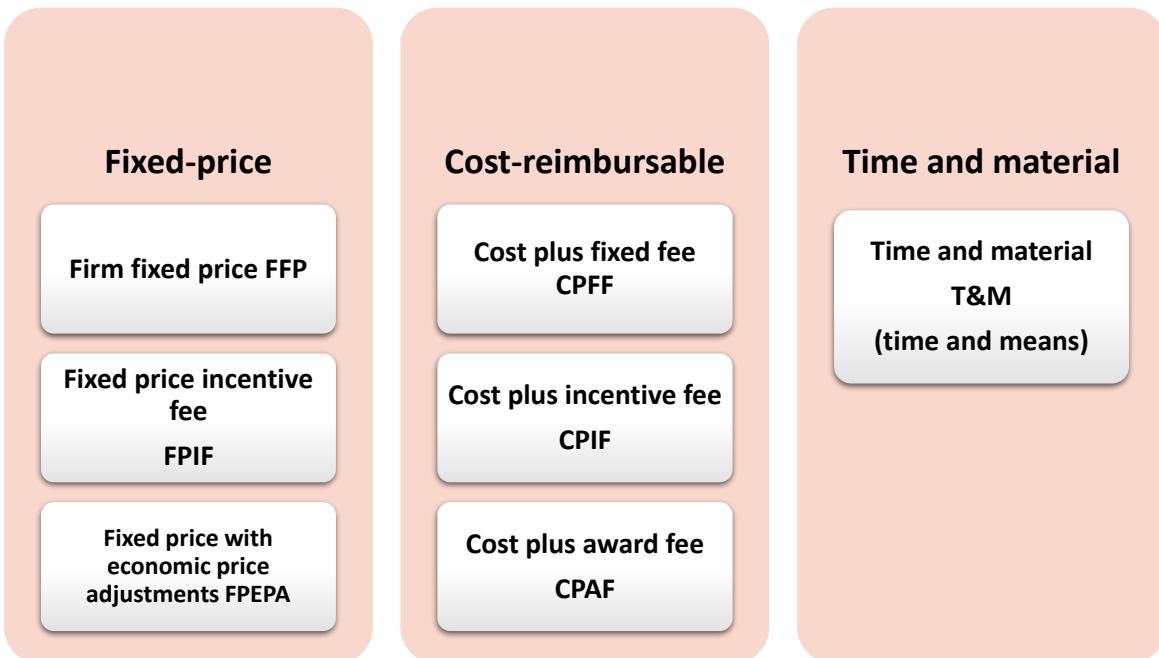
The process of documenting project procurement decisions, specifying the approach, and identifying potential sellers



Procurement Management Plan



Contract's Types



Example: Cost Plus

- Seller managed to save on cost!
- Cost savings = $210 - 200 = \$10K$
- Seller's share (incentive) of savings = $20\% * 10K = \$2K$
- Seller's total fees = $25 + 2 = \$27K$
- Final price = cost + fees = $200 + 27 = \$227k$

| | |
|---------------|-----------|
| Target Cost | \$210,000 |
| Target Fee | \$25,000 |
| Target Price | \$235,000 |
| Sharing Ratio | 80/20 |
| Actual Cost | \$200,000 |

Example: Cost Plus

- Seller EXCEEDED cost!
- They will get penalized!
- Excess Cost= $150 - 160 = (\$10K)$
- Seller's share (penalty) of loss = $20\% * 10K = (\$2K)$
- Seller's total fees = $20 - 2 = \$18K$
- Final price = cost + fees = $160 + 18 = \$178k$

| | |
|---------------|--------|
| Target Cost | \$150k |
| Target Fee | \$20k |
| Target Price | \$170k |
| Sharing Ratio | 80/20 |
| Actual Cost | 160k |

Procurement Documents

| Request for information (RFI) | Request for quotation (RFQ) | Request for proposal (RFP) |
|--|---|--|
| <ul style="list-style-type: none"> • More information on the goods and services to be acquired is needed from the sellers. • It will typically be followed by an RFQ or RFP. | <ul style="list-style-type: none"> • Request for material or service – asks for a price quote per item, hour, foot, etc. | <ul style="list-style-type: none"> • Request <u>PRICE + PROPSAL</u> on how work will be done, who will do it, resumes, company experience. Often Evaluated based on <u>PRICE + TECHNICAL</u> criteria |

2 - Conduct Procurements

The process of obtaining seller responses, selecting a seller and awarding a contract



Bidders Conference

Meetings with prospective sellers prior to preparation of a proposal to:

- Ensure all prospective sellers have a clear, common understanding of the procurement
- Responses to questions may be incorporated into the procurement documents as amendments
- All potential sellers are given equal standing during this initial buyer and seller interaction to produce the best bid



Evaluation Criteria

Evaluation criteria – Used to rate or score proposals:

- Understanding of the need
- Overall or life-cycle cost
- Technical capability
- Management approach
- Financial capacity
- Production capacity and interest
- Proprietary rights

3 - Control Procurements

The process of managing procurement relations, monitoring contract performance, and making changes and corrections as appropriate; closing out contracts.



Integration Management

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 within the Project Management Process Groups.



Key Concepts

- Inregration Management is for Project Mangers
- Development of the project management plan
- Creation and using the needed knowledge
- Key decisions
- Measuring and monitoring the project performance
- Completing all the project work
- Closing the project as per the project management plan

Trends and Emerging Practices

- Using Automated tools
- Using Visual tools
- Project knowledge management
- Expanding project manager responsibilities
- Hybrid methodology

PROJECT INTEGRATION MANAGEMENT

There are seven processes in this knowledge area

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

Develop Project Charter

The process of developing a document that formally authorizes the existence of a project & provides the project manager with the authority to apply organizational resources to project activities

Project Charter

- 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
- Key Stakeholder list
- Project approval requirements
- Assigned project manager, responsibility, and authority level, and
- Name and authority of the sponsor or other person(s) authorizing the project charter

Develop Project Management Plan

The process of defining, preparing, and coordinating all plan components and consolidating them into an integrated project management plan



Project Management Plan

Project baselines

- Scope baseline
 - ✓ scope statement,
 - ✓ work breakdown structure (WBS)
 - ✓ WBS dictionary
- Schedule baseline
- Cost baseline

Subsidiary plans

- Scope management plan
- Requirements M. plan
- Schedule management plan
- Cost management plan
- Quality Management plan
- Resource management plan
- Communications M. plan
- Risk management plan
- Procurement M. plan
- Stakeholder M. plan

Additional components

- Change management plan
- Configuration management plan
- Performance measurement baseline
- Project life cycle
- Development approach
- Management reviews

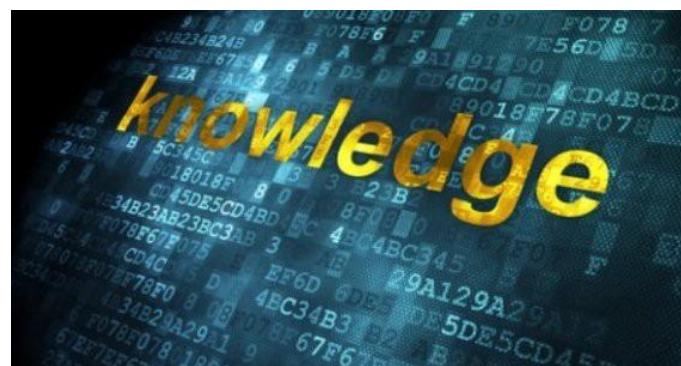
Direct and Manage Project Work

The process of leading & performing the work defined in the project management plan & implementing approved changes to achieve the project's objectives



Manage Project Knowledge

The process of using existing knowledge & creating new knowledge to achieve the project's objectives and contribute to organizational learning



Project Knowledge

- What is knowledge?
- Knowledge management
- Knowledge types
- Knowledge solutions

Monitor and Control Project Work

The process of tracking, reviewing, and reporting overall progress to meet the performance objectives defined in the project management plan



Perform Integrated Change Control

The process of reviewing all change requests; approving changes & managing changes to deliverables, organizational process assets, projects documents ; the project management plan;& communicating the decisions



Change Requests

| | |
|--------------------------|---|
| Corrective action | <ul style="list-style-type: none">An intentional activity that realigns the performance of the project work with the project management plan. |
| Preventive action | <ul style="list-style-type: none">An intentional activity that ensures the future performance of the project work is aligned with the project management plan |
| Defect repair | <ul style="list-style-type: none">An intentional activity that modifies a nonconforming product or product component |

Close Project or Phase

The process of finalizing all activities in the project, phase, or contract



Project Final Report

- ✓ Financial
- ✓ Technical
- ✓ Administrative
- ✓ Legal

Q & A

THANK YOU



**TRUST, MUTUAL RESPECT
AND LONG-TERM VISION.
WITH THESE THOUGHTS IN MIND
WE ARE CONFIDENT THAT THIS IS JUST
A BEGINNING OF YOUR ASPIRING
JOURNEY WITH LEORON.**