



PMP Exam Preparation

Points to Remember-2

✓ **Project Selection Methods:**

1- Benefit Measurement Methods: a. Economic Models, b. Scoring Models, c. Comparative Approach, d. Benefit Contribution, and e. Murder Board

2- Constrained Optimization Methods: a. Linear, b. Non-Linear, c. Dynamic, d. Integer, and e. Multi-objective algorithms

✓ **Economic Value Add (EVA):** If a project does not make more money than the opportunity costs, it has not truly added economic value to the organization.

✓ **Internal Rate of Return (IRR):** Bigger is better.

✓ **Opportunity Cost:** 'what is the cost of the other opportunities we missed by investing our money in this project?'

✓ **Payback Period:** a shorter payback period is better.

✓ **Return on Investment (ROI):** Bigger is better.

✓ **Corrective and Preventive Actions** do not normally affect the Project Baselines, only the performance against the baselines.

✓ **Mid-Project Evaluations** are conducted while project work is still in progress. The main purpose of such evaluations is to determine if objectives are still relevant and if these objectives are being met.

✓ **Perform Integrated Change Control** is primarily focused on **MANAGING CHANGES** to the project's SCOPE.

✓ **Monitor and Control Project Work** is primarily focused on **MANAGING THE WAY** that SCOPE is executed.

✓ **CCB** is responsible for reviewing changes & change requests and its level of authority should be spelled out in the Project Management Plan.

✓ **Change control** is focused on identifying, documenting and controlling changes to the project and the product baselines.

✓ **Verify Scope** happens at the end of each phase /project, and upon delivery of Product/Service/Result.



- ✓ **Verify Scope** is concerned with completeness and acceptance.
- ✓ **Perform Quality Control** is concerned with correctness.
- ✓ Customer's interests should always be weighed heavily and disputes should be resolved in favor of the customer.
- ✓ **A Baseline** (whether for Scope, Schedule, Cost, or Quality) is the Original Plan + All Approved Changes.
- ✓ **Scope Creep** Results from :
 - Poor initial requirements definition.
 - Failure to involve users in early stages.
 - A missing Scope Baseline.
 - Poor Change Control.
 - Weak Management.
 - Failure to manage user expectations.
- ✓ **Mandatory Predecessors** are known as (Hard logic), **Discretionary Predecessors** are known as (Preferred logic, or Soft logic).
- ✓ **Resource Calendars** specify **WHEN** and **HOW LONG** identified project resource will be available during the project.
- ✓ **Schedule Compression** includes Fast-tracking and crashing.
- ✓ **Crashing** usually increases cost. Over Time is considered as Crashing. Cheapest Task has to be crashed first.
- ✓ **Heuristics**: Rules for which no formula exists. Usually derived through trial and error.
- ✓ **Free Float**: how much time an activity can be delayed without affecting the early start date of subsequent dependent activities.
- ✓ **Resource Leveling** can be used when shared or critical required resources are only available at certain times, or available in limited quantities, or to keep resource usage at a constant level. It can often cause the original critical path to change.



- ✓ **Path Convergence:** The merging or joining parallel schedule network paths into the same node in a project schedule network diagram.
- ✓ **Path Divergence** is extending or generating parallel schedule network paths from the same node in a project schedule network diagram.
- ✓ **Cost of quality** is the Cost that is incurred to achieve required quality.
- ✓ **Stranded/Sunk Costs** are uncured costs that cannot be reversed irrespective to future events.
- ✓ **Life Cycle Costing** includes Acquisition, Operation, Maintenance, and Disposal Costs.
- ✓ **Benchmarking** means using the results of quality planning on other projects to set goals for your own.
- ✓ **Design of experiments** is the list of all the kinds of tests you are going to run on your product.
- ✓ **Attribute Sampling** is binary, it either conforms to quality or it doesn't (**YES or NO**).
- ✓ **Variable Sampling** measures how well something conforms to quality (**RANGES**).
- ✓ **Special Causes** considered unusual and preventable by process improvement.
- ✓ **Common Causes** are generally acceptable.
- ✓ **Tolerances** deal with the limits your project has set for product acceptance.
- ✓ **Control Limits** are set at three standard deviations above and below the mean. As long as your results fall within
- ✓ **Cause and Effect Diagram** (Ishikawa/Fishbone): Used to show how different factors relate together and might be tied to potential problems. It improves quality by identifying quality problems and trying to UNCOVER THE UNDERLYING CAUSE.
- ✓ **Flow Chart** shows how processes interrelate.
- ✓ **Histogram (Column Chart)** it shows how often something occurs, or its frequency (no Ranking).
- ✓ **Pareto Charts (80-20 rule):** This is a **Histogram** showing defects RANKED from GREATEST to LEAST. This rule states that 80% of the problems come from 20% of the causes.
- ✓ **Run Chart** tells about TRENDS in the project. Shows the history and pattern.



- ✓ **Scatter Diagram** is a powerful tool for SPOTTING TRENDS in Data. Scatter Diagrams are made using two variables (a dependent variable and an independent variable).
- ✓ **Statistical Sampling** is a powerful tool where a RANDOM sample is selected instead of measuring the entire population.
- ✓ **Quality** is "the degree to which a set of inherent characteristics fulfill requirements."
- ✓ **Total Quality Management (TQM)**: Everyone in the company is responsible for quality and is able to make a difference in the ultimate quality of the product. TQM shifts the primary quality focus away from the product that is produced and looks instead at the underlying process of how it was produced.
- ✓ **Continuous Improvement Process (CIP)/KAIZEN**: A philosophy that stresses constant process improvement, in the form of small changes in products or services.
- ✓ **Just-In-Time (JIT)** is a manufacturing method that brings inventory down to Zero (or near Zero) levels. It forces a focus on quality, since there is no excess inventory on hand to waste.
- ✓ **Statistical Independence**: When the outcomes of two processes are not linked together or dependent upon each other, they are statistically independent.
- ✓ **Kinds of powers**: Reward power, Expert power, Referent power, Punishment power (Coercive), and legitimate power (Formal power) .Reward and Expert as the most effective forms of power and Punishment/Coercive as the least effective.
- ✓ **Recognition and Reward** (Theories of Motivation) :Win-win rewards as the best choices for team building.
- ✓ **Maslow's hierarchy of needs** : You can't achieve higher needs until you're satisfied with the lower ones.
>>>> 1. Physiological, 2. Security, 3. Acceptance. Higher Needs - 4. Esteem, 5. Self-Actualization.
- ✓ **Herzberg's Motivation-Hygiene Theory**: Hygiene factors (Company Policy, Supervision, Good relationship with boss, working conditions, Paycheck, Personal life, Status, Security, and Relationship with co-workers) does not make someone satisfied, but their absence will make someone unsatisfied. Hygiene factors do not motivate by themselves. **Motivation factors** (Achievement, Recognition, Work, Responsibility, Advancement, and Growth) will motivate, but they will not work without the Hygiene factors in place.



- ✓ **Douglas McGregor's Theory X and Theory Y:** Theory X - Team members are Selfish, Unmotivated, Dislike work (constant supervision is required - 'authoritarian management' style). Theory Y - Naturally motivated to do good work (manager trusts team members - 'participative management' style).
- ✓ **Expectancy Theory:** If workers believe their efforts are going to be successful and rewarded, they will tend to be highly motivated and productive.
- ✓ **Ground Rules:** Formal or informal rules that define the boundaries of behavior on the project.
- ✓ Stages of **Team Development** : 1. Forming, 2. Storming, 3. Norming, 4. Performing, and 5. Adjourning
- ✓ **Formal Verbal** (Presentations and Speeches)
- ✓ **Informal Verbal** (Meetings, Conversations)
- ✓ **Formal Written** (Project Plans, Contract, Charter)
- ✓ **Informal Written** (Status Updates, memos, Email)
- ✓ **90%** of the Project Manager's time is spent communicating
- ✓ **Sensitivity Analysis** (Tornado Diagram shows HOW SENSITIVE each analyzed area of the project is to risk. It ranks the bars from GREATEST to LEAST on the project so that the chart takes on a Tornado-like shape).
- ✓ **Buyers Risk** (from Highest to Lowest) - CPFF - T&M - CPIF - FPIF - FFP
- ✓ **IFB or RFB/P** used for 1. Single Price, 2. High \$ Value
- ✓ **RFQ** used for 1. Per Item/Hour Price, 2. Lower \$ Value, 3. May be used to develop info in RFP.
- ✓ **Buyers Risk** (from Highest to Lowest) : CPFF - T&M - CPIF - FPIF - FFP
- ✓ A **project baseline** serves as a control tool. Project plan execution and work results are measured against the project baselines.
- ✓ The **project plan** serves as a guide to all future project decisions.
- ✓ **Integrated Change Control** is a system to document changes, their impact, response to changes, and performance deficits.
- ✓ **Configuration management** involves making sure that everyone is working off the same documents and version.
- ✓ Only with **formal acceptance** can the project manager be sure the project work is really complete.
- ✓ The project with the highest **NPV** is the best one.



- ✓ **Constrained optimization** uses mathematical models.
- ✓ **Linear programming** is a mathematical model.
- ✓ The larger the **BCR, SPI** and **CPI** the better.
- ✓ It is better to capture data at the end of each phase of a project. Do not wait until the end.
- ✓ A **work authorization system** is used to coordinate **when** and **in what order** the work is performed.
- ✓ **Approved Changes** will lead to changes to the baseline.
- ✓ It is the sponsor's role to determine objectives. These objectives are described in the project charter.
- ✓ The lessons learned are project management deliverables.
- ✓ The archive is the last thing to create before releasing the team.
- ✓ **Scope verification** focuses on customer acceptance of a deliverable
- ✓ **Product verification** is focused on making sure all the work is completed satisfactorily.
- ✓ The project manager is also an integrator, and a communicator.
- ✓ The **scope statement** serves as a point of reference for all future project decisions.
- ✓ The **scope baseline** includes the WBS, WBS dictionary, and project scope statement.
- ✓ A team member should have flexibility at the work package level to make some changes as long as they are within the overall scope of the WBS dictionary.
- ✓ Work that is not in the WBS is outside the scope of the project.
- ✓ **Leveling resources** generally extends the schedule.
- ✓ **Corrective action** is anything done to bring expected future schedule performance in line with the project management plan.
- ✓ **Quality attributes** are the measurements that determine if the product is acceptable. They are based on the characteristics of the product for which they were designed.
- ✓ **Perform Quality Assurance** involves determining whether standards are being followed.



- ✓ Data points outside the control limits indicate the process is out of control, and production should be stopped until a solution is found.
- ✓ Inspections may be conducted at any level including the project team, and at any time throughout the product development. They are used to prevent defects from being delivered to the customer.
- ✓ Trend analysis examines project results over time to evaluate performance.
- ✓ The **control limits** are set based on the company's quality standard and indicate the acceptable range.
- ✓ The **halo effect** is the assumption that because the person is good at a technology they'd also be good at managing a project.(Which is a wrong assumption).
- ✓ **Confronting** means problem solving and problem solving is the best way to resolve conflict.
- ✓ **Staffing Management Plan:** WHEN and HOW resource will be ADDED and TAKEN OFF the team.
- ✓ A corner office is a "**perk**" whereas health benefits are a **fringe** benefit.
- ✓ The final steps of problem solving include: implement a decision, review it, and confirm that the decision solved the problem.
- ✓ A **communication matrix** is an excellent tool to identify the stakeholders and their requirements for communication.
- ✓ **Report Performance** is a monitoring and controlling process.
- ✓ **Nonverbal communication** carries **55%** of the message.
- ✓ **Progress Reports** generally show problems after they have occurred.
- ✓ An error value of seven percent represents the threshold the project is allowed to operate under.
- ✓ When the **scope** has been changed, the project manager should require risk planning to analyze the additions for risks to the project success.
- ✓ **Monte Carlo simulations** can reveal multiple scenarios and examine the risks and probability of impact. It is a Computer-based Analysis & useful for revealing Schedule Risks
- ✓ A **decision tree** allows you to make an informed decision today based on probability and impact analysis. You can decide based on the expected monetary value of each of your options.



- ✓ A **risk rating matrix** is developed by a department or a company to provide a standard method for evaluating risks. This improves the quality of the rating for all projects. A risk rating matrix is created during the Perform Qualitative Risk Analysis process.
- ✓ The **risk response owner** is assigned to carry out responses and must keep the project manager informed of any changes.
- ✓ A fair contract shares a reasonable amount of risk between the buyer and the seller
- ✓ An **SOW** can be a contract if both parties agree to the SOW and sign the document as a contract.
- ✓ A **single source seller** means there is only one seller the company wants to do business with.
- ✓ An **IFB** is typically a request for a sealed document that lists the seller's firm price to complete the detailed work.
- ✓ We **decompose** the Project using a **WBS**.
- ✓ The project manager should attend the bidder conference.
- ✓ A seller cannot issue a change order (although he could request one).
- ✓ Special provisions take precedence over general provisions.
- ✓ The only way to change the **cost plus fixed fee** contract is to negotiate a change to the contract, normally in the form of change orders. Change orders should include an additional fee if additional work is added to the contract.
- ✓ A **procurement audit** includes what went right and wrong for the purposes of creating historical records and improving future performance.
- ✓ When you must begin work immediately without a procurement statement of work, the most appropriate choice is **T&M**.
- ✓ The independent estimate is most concerned with cost, comparing cost estimates with in-house estimates, or with outside assistance.
- ✓ A letter of intent is not binding in a court of law, it does make the seller feel more comfortable about expending funds before a contract is signed.
- ✓ Generally in procurement situations, a change control board might review and approve or reject a change, but only the procurement manager has the authority to sign a change.
- ✓ Incentives are meant to bring the objectives of the seller in line with those of the buyer. That way both are progressing toward the same objective.



- ✓ Professional and social responsibility requires the investigation of any instance where the legitimate interests of the customer may be compromised. If such a compromise is found, action must be taken.
- ✓ Whenever you are uncertain of whether a payment is a bribe, you should discuss the situation with legal counsel.
- ✓ The project manager's responsibility is to provide truthful project information. He or she should thereafter discuss the impacts of their actions with the team members. If that does not work, the next step is to report it to their functional managers.
- ✓ The Project Manager should always be as **EXPLICIT, DIRECT**, and **UNAMBIGUOUS** as possible given the cultural conditions.
- ✓ All 10 Monitoring & Controlling Processes have Change Requests as an output.
- ✓ **Requirements Categories:** 1. Product Requirements (Technical Specifications); 2. Project Requirements (Operational Specifications)
- ✓ **Project Murder Board** is defined as a panel of people who try to shoot down a new project idea.
- ✓ Management By Walking Around done by Observation and Conversation
- ✓ Quality Benefits must outweigh the Cost.
- ✓ Prevention: Keeping errors out of the process.
- ✓ Inspection: Keeping errors out of the hands of the customer
- ✓ Leads and lags are **APPLIED** as part of the Develop Schedule process, but then they are **ADJUSTED** in the process of Control Schedule.
- ✓ A successful project manager will learn the art of delegation - what to delegate to others and what to not delegate.
- ✓ **The Budget at Completion (BAC)** and **Planned Value (PV)** can both be calculated before work begins.
- ✓ The **issue log** is a tool used in Manage Project Team in the Human Resource Management knowledge area.
- ✓ **Mutually Exclusive** is when two events cannot both happen at the same time.
- ✓ A **document management system** is a configuration management tool, useful in the project management information system. Configuration information in particular will assist with the tool of Variance Analysis in the process of Control Scope.



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"Good management is the art of making problems so interesting and their solutions so constructive that everyone wants to get to work and deal with them." Paul Hawken



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