Software Project Management

Property	
Tags	SWE 387

This is the slides summary, to get the most of this summary try to read the question and remember the answer without looking for the answer, if you could not remember or don't know the answer then look for it (Active recall method)

Chapter 4 - Project Integration Management

▼ What is project integration management?

Is to coordinate all of the other knowledge areas throughout a project's life cycle.

▼ Why Integration management is important?

Because many managers have trouble looking at the "big picture" and want to focus on too many details

▼ What are the main processes in project integration management

1. Develop project charter
2. Develop project management plan
3. Manage project execution
4. Manage project knowledge
5. Monitor and control project work
6. Perform integrated change control
7. Close the project or phase

▼ What is a strategic planning?

It is to determine the long-term objectives

▼ Name ways to determine the long-term objectives

1. Analyzing the strengths and weaknesses of an organization
2. Study opportunities and threats in the business environment
3. Predict future trends
4. Conduct SWOT Analysis (Strength, Weakness, Opportunities, Threats)

▼ What are the methods for selecting projects?

1. Focusing on broad organizational needs
2. Categorizing information technology projects
3. Performing financial analyses
4. Using weighted scoring model

▼ What does broad organizational needs means?

Broad organizational needs are much more likely to be successful because they will be important to the organization (improve safety, increase morale)

▼ Give examples about the financial analyses

1. Net present value (NPV)
2. Return on investment (ROI)
3. Payback analysis

▼ What is net present value analysis?

Method for calculating the expected net monetary gain or loss from a project by discounting all expected future cash inflows and outflows to the present point in time

▼ What is return on investment analysis?

Is a ratio between net profit and cost of investment

return/cost * 100 = ROI

▼ What is payback analysis?

Payback period is the amount of time it will take to regain the total dollars invested in a project.

▼ Describe the weighted scoring model

A systematic process for selecting projects based on many criteria

Steps:

1. Identify criteria important to the project selection process
2. Assign weights to each criteria so they add to 100%
3. Assign scores to each criteria
4. Multiply the scores by the weights to get the total weighted scores

▼ What is a project charter?

A project charter is a formal, typically short document that describes your project in its entirety — including what the objectives are, how it will be carried out, and who the stakeholders are

▼ What is a project management plan?

Document used to coordinate all project planning documents and help guide a project's execution and control

▼ What are the common elements of a project management plan?

1. Introduction/ overview of the project
2. Description of how the project is organized
3. Work to be done
4. Schedule and budget information

▼ What does managing project work means?

Managing and performing the work described in the project management plan (execution)

▼ What is the main objective of the project management plan?

Is to guide the project execution

▼ How can you increase the project's execution

1. Provide guidelines and templates
2. Track the performance throughout the project

▼ Name the two types of project knowledge

1. Explicit knowledge: easily explained using words

2. Tacit knowledge: difficult to express and highly personal

▼ When to manage the project knowledge?

Knowledge management should be done before, during and after the project

▼ Why monitoring and controlling the project work is important?

Because changes are inevitable on most projects, so it is important to develop and follow a process to monitor and control changes

▼ What is integrated change control?

It is the process of reviewing all change requests, approving changes, and managing changes to deliverables with documentation

▼ What is change control board (CCB)?

It is a formal group of people responsible for approving or rejecting changes on a project

▼ When to perform projects or phase closing?

To close a project or phase, you must finalize all activities and transfer the completed or cancelled work to the appropriate people

Chapter 5 - Project Scope Management

▼ What is project scope management?

Project scope management includes the processes involved in defining and controlling what is or is not included in a project

▼ Why project scope management is important?

To ensure that the project team and stakeholders have the same understanding of the project's scope and objectives

▼ What are the main processes in project scope management?

1. Planning scope management
2. Collecting requirements
3. Defining scope
4. Creating WBS
5. Validating scope

6. Controlling scope

▼ What tools are used in project scope management frequently?

1. Expert judgment
2. Data analysis
3. Meetings

▼ What are the contents of scope management plan?

1. Prepare a detailed project scope statement
2. Creating WBS
3. Maintain and approve the WBS
4. Obtain formal acceptance of the completed project deliverables
5. Control requests for changes to the project scope

▼ What is a requirement management plan?

A document describe how project requirements will be analyzed, documented and managed

▼ What are the objectives of a requirement management plan?

1. How to plan, track and report requirements activities
2. How to perform configuration management activities
3. How to prioritize requirements
4. How to use product metrics
5. How to trace and capture attributes of requirements

▼ What are the techniques used to collect requirements?

1. Interview stakeholders
2. Holding workshops
3. Decision-making techniques
4. Questionnaires and surveys
5. Conducting observation studies

▼ What is project scope statement?

A scope statement outlines the entire project, including any deliverables and their features, as well as a list of stakeholders who will be affected

▼ What are the elements of a project scope statement

1. Product scope description
2. Product user acceptance criteria
3. Detailed information on all project deliverables

▼ What additional information can be stated in the project scope statement?

1. Boundaries
2. Constraints
3. Assumptions

▼ What is work breakdown structure (WBS)?

It is a deliverable-oriented grouping of the work involved in a project which define the total scope of the project.

▼ How to create a WBS for a project?

By subdividing project deliverables into smaller pieces (Decomposition)

▼ What is scope baseline?

It is a document that includes the approved project scope statement and WBS and WBS dictionary.

▼ What are the approaches to create WBS?

1. Guidelines: Use predefined guidelines
2. Analogy approach: review WBSs of similar projects and try to adapt it for your project
3. Top-down: start with the largest item of the project them break them down
4. Bottom-up: start with the specific tasks and group them later
5. Mind mapping: Use branches radiating out from a core idea to structure thoughts and ideas

▼ What is a WBS dictionary?

A document that describes detailed information about each WBS item

▼ What does scope creep means?

Tendency for project scope to keep getting bigger and bigger

▼ What does scope validation means?

A process that shows the stakeholders have received what was agreed and formalizing their approval

▼ What does controlling scope means?

It means controlling changes to the project scope

▼ What are the goals of controlling scope

1. Ensure changes are processed according to the integrated change control
2. Manage changes when they occur

Chapter 6 - Project Time Management

▼ What is the least flexible constraints in the triple constraint?

Time

▼ What are the project time management processes?

1. Planning schedule management
2. Defining activities
3. Sequencing activities
4. Estimating activity durations
5. Developing the schedule
6. Controlling the schedule

▼ What are the elements in the schedule management plan?

1. Scheduling methodology
2. Units of measurement
3. Reporting formats
4. Process descriptions

▼ What is the meaning of Defining activities?

Defining activities involves identifying the specific actions that will produce the project deliverables in detail to determine resource and schedule estimates

▼ What is a milestone?

It is a significant event that normally has no duration

▼ What does sequencing activities means?

Evaluate the reasons for dependencies and the different types of dependencies between activities

▼ List the types of dependencies

1. Mandatory: is one that “must be” carried out at a particular time
2. Discretionary: is one that isn't based on a "have to", but on a "should". (may limit the time)
3. External: relationships between project and non-project activities

▼ What is the most used technique in sequencing activities?

Network diagrams

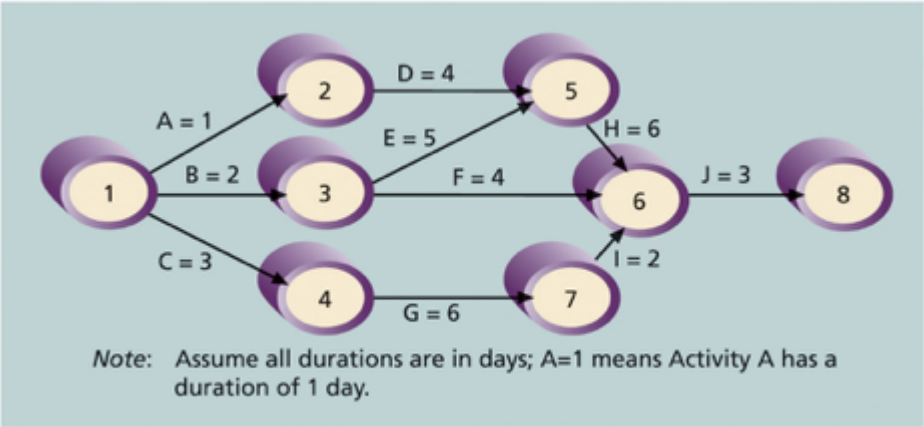


FIGURE 6-2 Network diagram for project X

▼ Describe the arrow diagramming method?

It is a way to represent network diagrams

Activity → Arrows

Node → Starting and end points of activities

▼ What types of dependencies in arrow diagramming method?

1. Finish-to-start
2. Start-to-start
3. Finish-to-finish
4. Start-to-finish

Task dependencies

The nature of the relationship between two linked tasks. You link tasks by defining a dependency between their finish and start dates. For example, the "Contact caterers" task must finish before the start of the "Determine menus" task. There are four kinds of task dependencies in Microsoft Project.

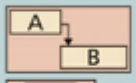
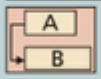
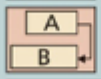
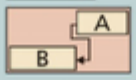
Task dependency	Example	Description
Finish-to-start (FS)		Task (B) cannot start until task (A) finishes.
Start-to-start (SS)		Task (B) cannot start until task (A) starts.
Finish-to-finish (FF)		Task (B) cannot finish until task (A) finishes.
Start-to-finish (SF)		Task (B) cannot finish until task (A) starts.

FIGURE 6-3 Task dependency types

▼ What is the difference between effort and duration?

Duration: the actual amount of time worked on an activity plus extra time

Effort: the work hours required to complete a task

▼ What does developing the schedule means?

To use the results of the other time management processes to determine the start and end date of the project

▼ What tools are used to develop an accurate schedule?

1. Gantt chart
2. Critical path analysis → Time
3. Critical chain scheduling → Resources

▼ What is gantt charts?

A standard format for displaying project schedule information by listing project activities and its start and finish dates

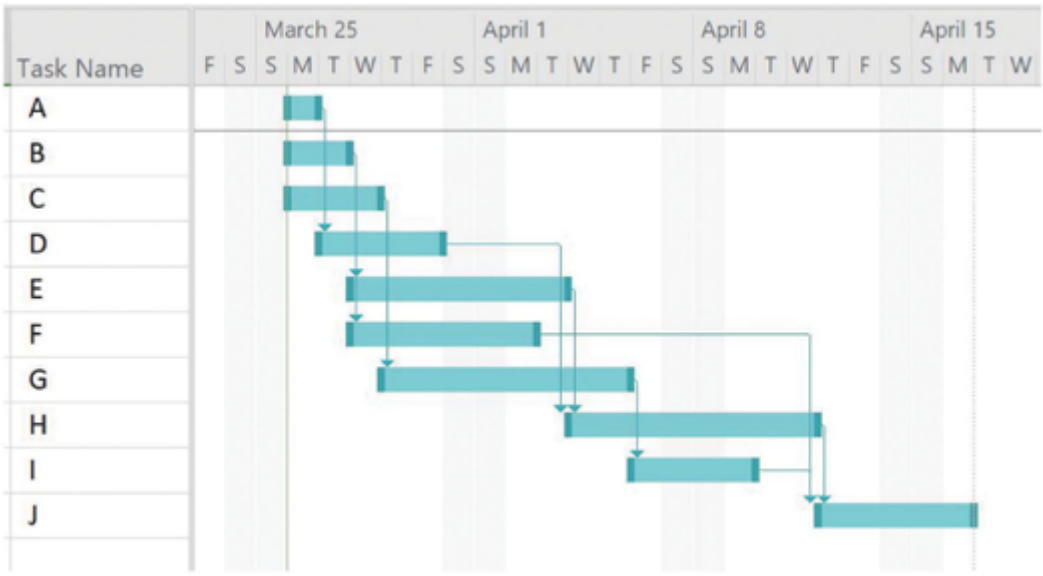


FIGURE 6-5 Gantt chart for project X

Black diamond → Milestones

Thick black bars → Summary tasks

Light gray horizontal bars → Duration of tasks

Arrows → Dependencies between activities

▼ What criteria can be used for milestones?

SMART

S → Specific

M → Measurable

A → Assignable

R → Realistic

T → Time-framed

▼ What is critical path method?

It is a network diagramming technique used to predict total project duration (longest path in the diagram)

▼ How to calculate the critical path?

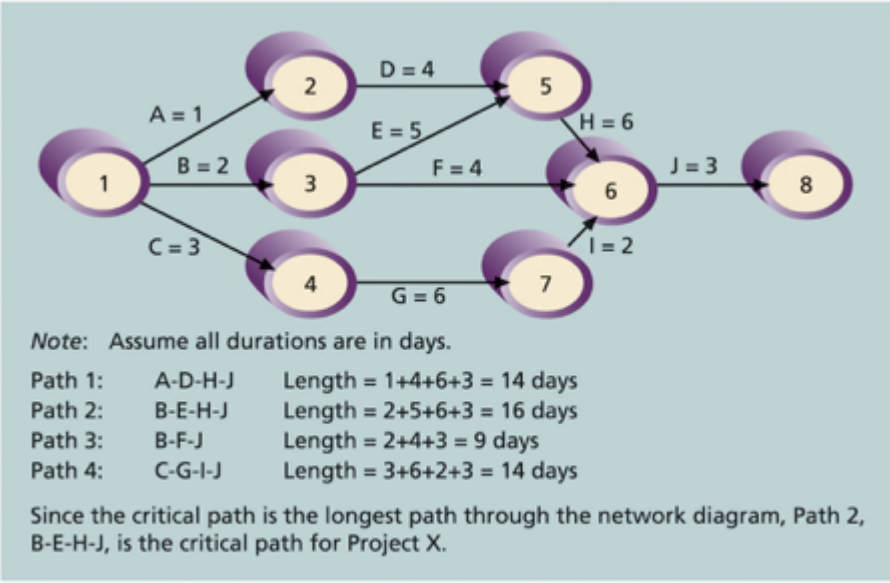


FIGURE 6-8 Determining the critical path for project X

▼ What is free slack?

Amount of time an activity can be delayed without delaying the early start of any following activity

▼ What is total slack?

Amount of time an activity may be delayed from its early start without delaying the project finish date

▼ What is a buffer?

It is the additional time to complete a task

▼ What is Murphy's law?

If something can go wrong then it will

▼ What is parkinson law?

Work expands to fill the time allowed

▼ What does feeding buffers means?

Additional time added before tasks on the critical path

▼ When to use PERT analysis

PERT analysis is used to estimate project duration when there is a high degree of uncertainty about the individual activity duration estimates

▼ What are the goals of schedule control?

1. Know the status of the schedule

2. Determine that the schedule has changed
3. Manage changes when they occur

Chapter 7 - Project Cost Management

▼ What is cost?

Cost is a resource sacrificed or foregone to achieve a specific objective or something given up in exchange

▼ What is project cost management?

It includes the processes required to ensure that the project is completed within an approved budget

▼ What are the processes in project cost management?

1. Planning cost management
2. Estimating costs
3. Determining the budget
4. Controlling costs

▼ What is planning cost management?

Determining the polices, procedures, and documentation that will be used for planning, executing and controlling the project cost.

▼ What does estimating costs means?

It is to develop an approximation or estimate of the costs of the resources needed to complete a project

▼ What is profit margin?

It is a ratio of (revenue-cost) to revenues

▼ What is a life cycle costing?

The total cost of ownership or development plus support costs for a project

▼ What does cash flow analysis means?

It determines estimated annual costs and benefits for a project and resulting annual cash flow

▼ List the types of costs and benefits

1. Tangible: can easily be measured with money
2. Intangible: difficult to measure with money
3. Direct: directly related to producing the product and services of the project
4. Indirect: not directly related to the products or services of the project, but indirectly related to performing the project
5. Sunk: money that has been spent in the past and cannot be recovered

▼ What does learning curve theory state in business?

It states that when many items are produced repetitively, the unit cost of those items decreases in a regular pattern as more units are produced

▼ What is reserved budget?

It is the amount included in a cost estimate to mitigate cost risk by allowing for future situations that are difficult to predict

▼ List the types of reserves

1. Contingency reserves → Known unknowns
2. Management reserves → Unknown unknowns

▼ What techniques used to develop a cost management plan?

1. Expert judgement
2. Analytical techniques
3. Meetings

▼ What are the levels of cost estimates?

1. Rough order of magnitude → done early in the project, initial estimate of the cost of the project
2. Budgetary → done in the middle, try to estimate the cost of activities and work packages
3. Definitive → Later in the project, to estimate the accurate amount of cost of activities and work package

▼ List the techniques used in cost estimation

1. Top-down or analogous → use previous, similar project data to estimate cost
2. Bottom-up → estimating individual activities and summing them to get a project total cost
3. Three-point → estimating the most likely, optimistic, and pessimistic costs for items
4. Parametric → use mathematical model or algorithm to estimate project's cost

▼ What are the common reasons for inaccurate estimation?

1. Estimates are done too quickly
2. Lack of estimating experience
3. Humans are biased toward underestimation
4. Management desires accuracy

▼ What is the best approach to have an accurate estimation

1. Gather as much data as possible about the project
2. Clarify the ground rules and assumptions
3. Try to include frequent risks

▼ How to perform budgeting for a project?

You have to allocate the project cost estimate to individual work items over time (The items often are derived from the WBS of the project)

▼ What does cost baseline means?

It is an approved time-phased budget that project managers use to measure and monitor cost performance

▼ What are the activities involved in controlling the cost?

1. Monitoring cost performance
2. Ensuring that only appropriate project changes are included in a revised cost baseline
3. Informing project stakeholders of authorized changes to the project that will affect costs

▼ What does earned value management (EVM) means?

It is a project performance measurement technique that integrates scope, time and cost data

▼ How to perform earned value management technique?

It is done by calculating three values for each activity from the project's WBS

1. Planned value
2. Actual cost
3. Earned value

▼ Why an earned value management is important to perform?

Because it answers three important questions regarding the project status

1. Where have we been?
2. Where are we now?
3. Where are we going?

▼ What data should be represented in an earned value chart?

1. Planned value (PV)
2. Actual cost (AC)
3. Earned value (EV)

▼ List the important formulas conducted in earn value management

Cost variance (CV) → EV-AC

Schedule variance (SV) → EV - PV

Cost performance index (CPI) → EV / AC

Schedule performance index (SPI) → EV / PV

Estimate at completion (EAC) → BAC(sum of all budget values) / CPI

Estimated to complete (ETC) → EAC-AC

Chapter 8 - Project Quality Management

▼ What is the meaning of quality?

Totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs

▼ What are the process in project quality management?

1. Planning quality management
2. Managing quality
3. Controlling quality

▼ What does planning quality management means?

It means the ability to anticipate situations and prepare actions to bring about the desired outcome

▼ What are the defect prevention methods?

1. Selecting proper material
2. Training people
3. Planning a process that ensures the appropriate outcome

▼ What are the quality factors in IT projects?

1. Functionality → Degree to which a system performs its intended function
2. Features → System's special characteristics that appeal to users
3. System outputs → Screens and reports the system generates
4. Performance → how well a product performs the customer's intended use
5. Reliability → Ability of the system to perform as expected under normal conditions
6. Maintainability → Ease of performing maintenance on a product

▼ What is quality assurance?

It is to include all the activities related to satisfying the relevant quality standards for a project

▼ What is the difference between quality assurance and quality control?

Quality assurance is performed in the process of creating the product. Quality control is used after the product is created and its aim to verify and maintain the quality after production

▼ List some approaches of quality assurance

1. Kaizen → To keep changing and improving the quality for the better
2. Benchmarking → comparing and measuring an the process of the project against those of a best-in-class performer from inside or outside its industry
3. Quality audit → process of systematic examination of a quality system carried out by an internal or external quality auditor or an audit team

▼ What are the main outputs of controlling quality?

1. Acceptance decisions
2. Rework
3. Process adjustments

▼ List the techniques used in quality control phase

1. Cause-effect diagrams →Demonstration technique that helps trace an undesirable effect back to the root cause.
2. Control chart → graphic display of process data over time and against established control limits (e.g. show number of bugs in the code over period of time)
3. Checksheet → simple tally sheets that are used to gather data (Simple check list to count some activities)
4. Scatter diagram → diagram is used to find the correlation between two variables, how they are related
5. Histogram → Histograms are graphs used to show frequency of distributions, or how often a value occur in a data set (often acquired from the cheecksheet)
6. Pareto chart → Pareto Charts are bar charts (Histogram) that are organized based on priority
7. Flowcharts → Graphical representation of the process flow

▼ List types of testing in building software

1. Unit testing → Test each component individually
2. Integration testing → software components are combined and tested as a group

3. System testing → Test the entire system as an entity
4. User acceptance testing → Test performed by end users prior to accepting the delivered system

▼ How modern quality management is different than the traditional approach?

Modern quality management focuses on main three points

1. Requires customer satisfaction
2. Prefer prevention to inspection
3. Recognizes management responsibility for quality

▼ Give suggestions for improving the overall quality of IT projects

1. Establish leadership that promotes quality
2. Understand the cost of quality
3. Provide a good workplace to enhance quality
4. Work toward improving the overall maturity level in software development and project management among the employees

▼ What is the major cause of poor quality?

Is the lack of good management

▼ What does cost of quality means?

It means the cost of usable and unusable quality requirements

▼ List the cost categories related to quality

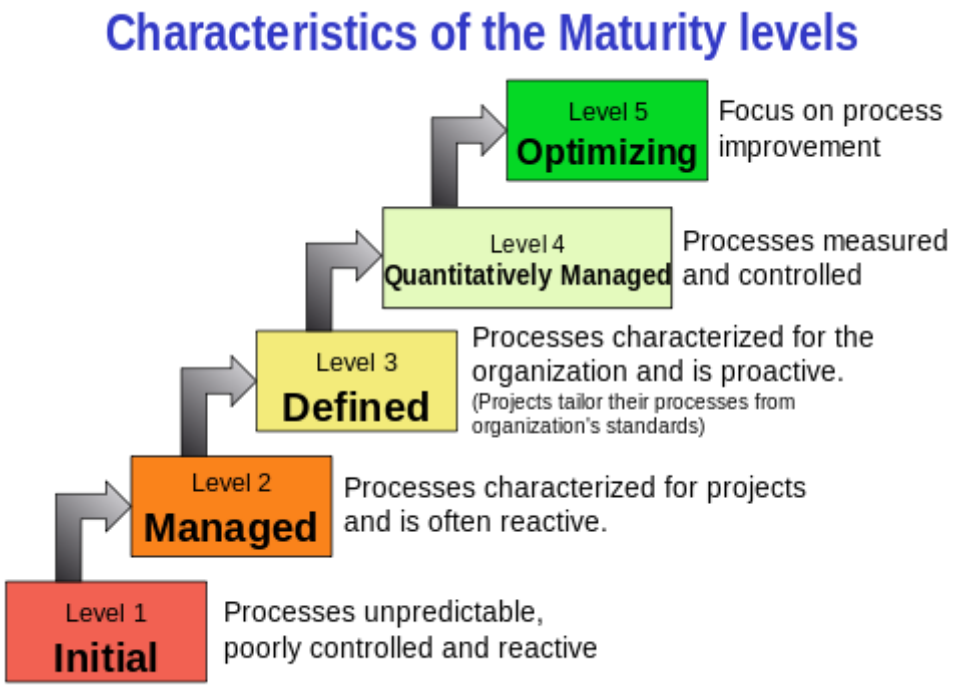
1. Prevention cost → Cost of planning and executing a project so it is error-free (e.g. training)
2. Appraisal cost → Cost of evaluating processes and their outputs to ensure quality (e.g. inspection and testing)
3. Internal failure cost → Cost incurred to correct and identified defect before the customer receives the product
4. External failure cost → Cost that relates to all errors not detected and corrected before delivery to the customer
5. Measurement and test equipment costs → Capital cost of equipment used to perform prevention and appraisal activities

▼ What is maturity models?

It is frameworks for helping organizations improve their processes and systems (e.g. CMMI)

▼ What are the five levels in CMMI?

1. Initial
2. Managed
3. Defined
4. Quantitatively managed
5. Optimizing



▼ What is the difference between CMMI and TCMMI

The difference is that TCMMI measures product maturity rather than process maturity

Chapter 9 - Project Resource Management

▼ Why resource management is important?

Because people determine the success and failure of the project

▼ What are the most common human resource needs?

1. Improving benefits
2. Redefining work hours
3. Finding future workers

▼ What is project resource management?

Making the most effective use of the human and physical resources involved with a project

▼ What are the processes involved in project resource management

1. Planning resource management
2. Estimate activity resources
3. Acquiring resources
4. Develop the project team
5. Manage the project team
6. Control resources

▼ What are the major keys that plays a huge role in managing people?

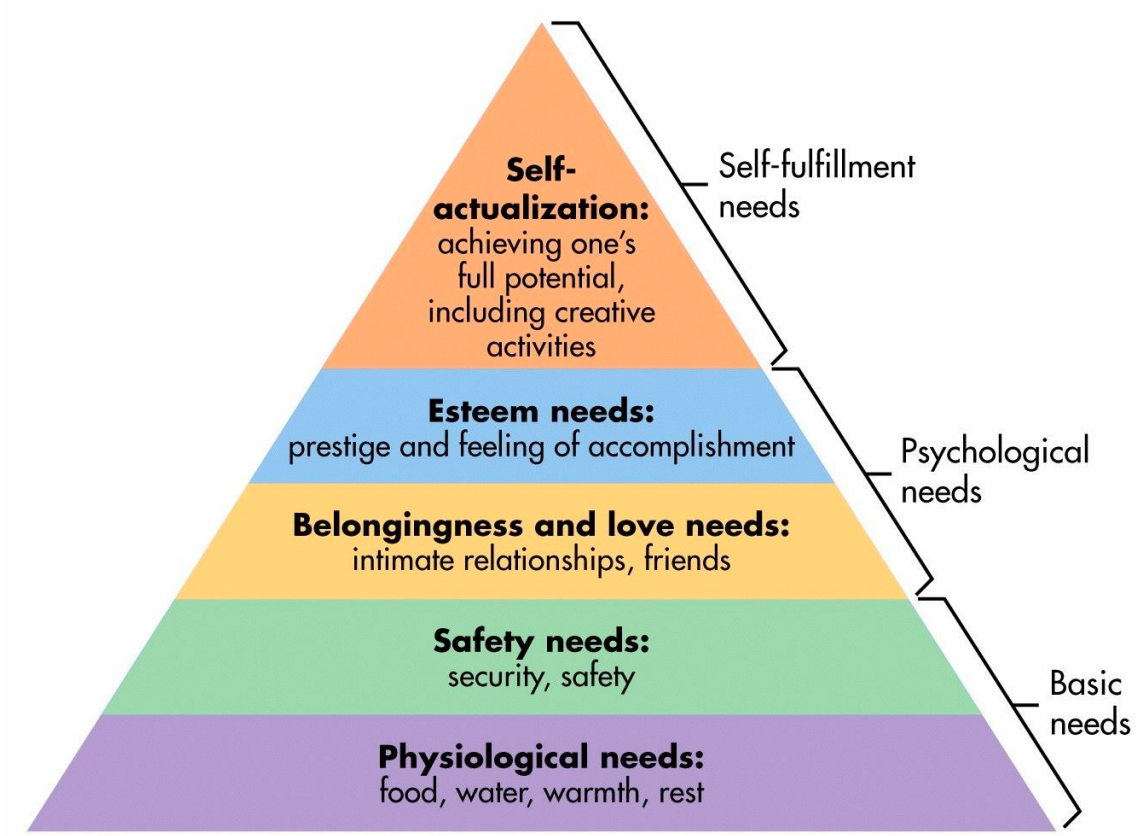
1. Motivational theories
2. Influence and power
3. Effectiveness
4. Emotional intelligence
5. Leadership

▼ What are the types of motivation?

1. Intrinsic motivation → Cause people to participate in an activity for their own enjoyment
2. Extrinsic motivation → Cause people to do something for a reward or to avoid a penalty

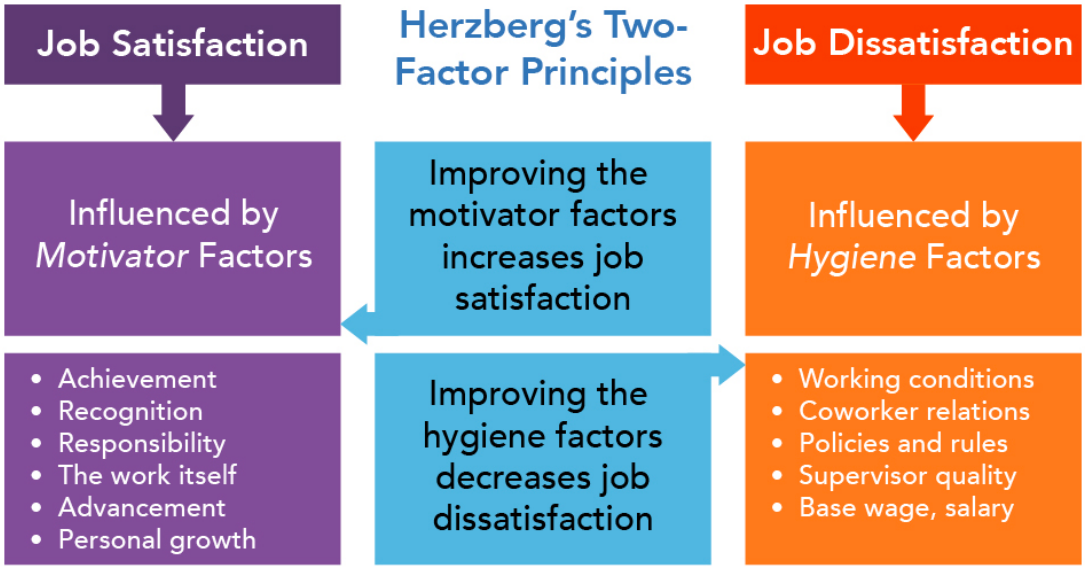
▼ What is Maslow's hierarchy of needs?

It is theory that states that people's behaviors are guided or motivated by a sequence of needs



▼ What is Herzberg's motivational-hygiene theory?

It is a theory that relate satisfaction in job with motivational factors and dissatisfaction with hygiene factors.



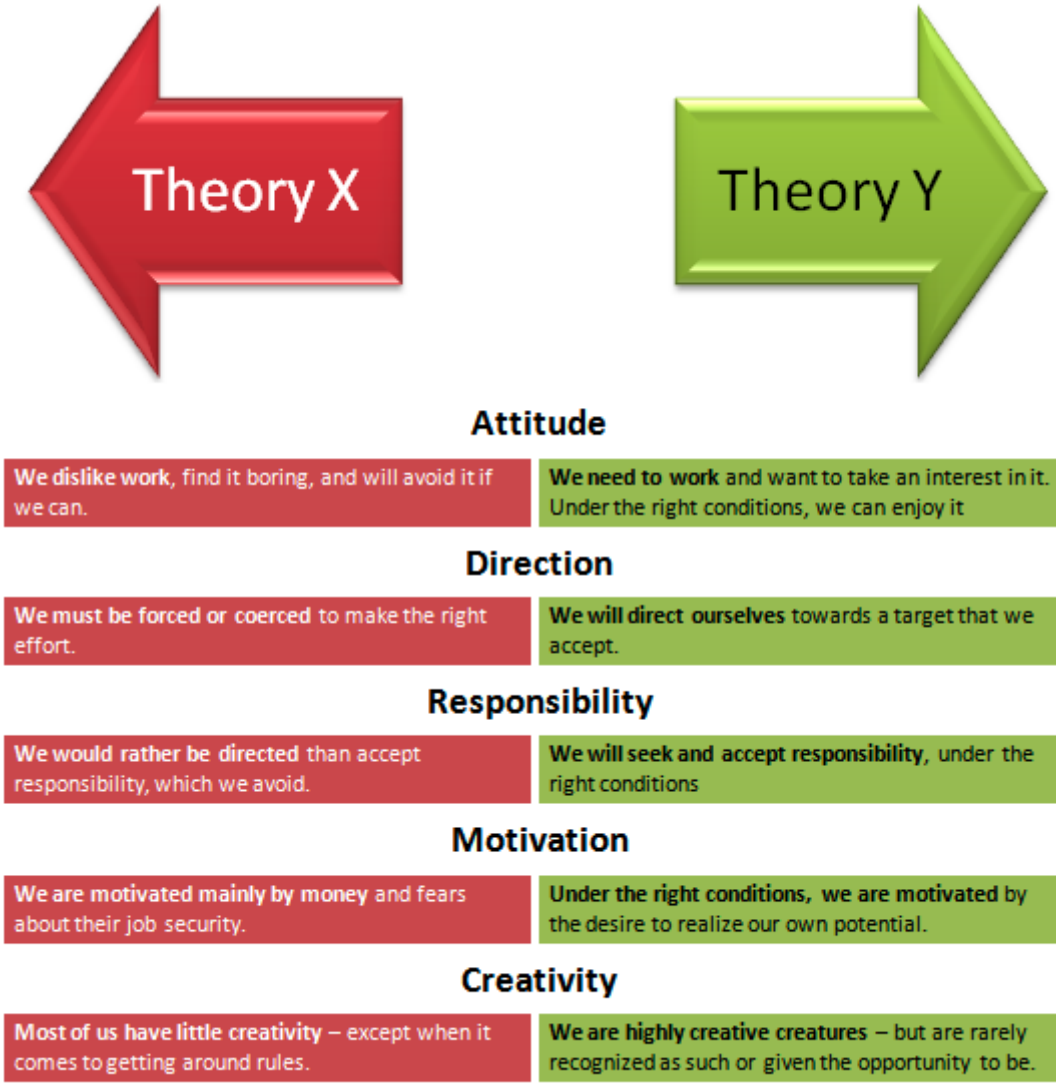
▼ What is McClelland's Acquired-Needs theory?

the theory states that every person has one of three main driving motivators: the needs for achievement, affiliation, or power.

▼ What is X and Y theories?

Theory X → Assumes workers dislikes and avoid work

Theory Y → Assumes workers like and enjoy the work



▼ What are the type of influence and power that can be found in a work place?

1. Authority → the right toe issue orders
2. Budget → Ability to authorize other's use of funds
3. Promotion → Ability to improve a worker's position
4. Money → Ability to increase a worker's salary
5. Penalty → Ability to cause punishment to a worker

▼ What is the meaning of having power in a project?

Power is the potential ability to influence behavior to get people to do things they would not otherwise do

▼ What is the difference between power and influence?

Power is much stronger than influence, because it is often used to force people to change their behavior

▼ What are the different types of power?

1. Coercive
2. Legitimate
3. Expert
4. Reward
5. Referent

▼ What are the seven habits stated by Covey?

1. Be proactive
2. Begin with the end in mind
3. Put first things first
4. Think win/win
5. Seek first to understand, than to be understood
6. Synergize
7. Sharpen the saw

▼ What makes a leader to be a good leader?

Experts agree that the best leaders are able to adapt their style to needs of the situation

▼ What is PMI talent triangle?

It is a triangle that emphasize the need for more than technical skills for project managers

▼ What are the contents of PMI talent triangle?

1. Technical project management
2. Strategic and business management
3. Leadership

▼ What tasks are done in developing resource management plan?

It involves identifying and documenting project resources, roles, responsibilities, skills, and reporting relationships

▼ What are the contents of resource management plan?

1. Project organizational charts → visual diagram that shows who is in the team and the role they play.
2. Responsibility assignment matrixes → Describes the participation by various roles in completing tasks or deliverables for a project or business process
3. Staffing management plan and resource histograms → Show number of people involved and what role they have played
4. Teams charters

▼ What tools that can help in estimating activities resources?

1. Expert judgment
2. Estimating approaches
3. Data analysis
4. Project management software
5. Meetings

▼ What is the step that should be taken after developing the resource requirements?

Project managers must work with other people in their organizations to assign them to their projects or to acquire additional human or physical resources needed for the project

▼ What does resource loading means?

It refers to the amount of individual resources and existing schedule requires during specific time periods

▼ What does overallocation means?

A resource is over-allocated when it is assigned too much work to complete within the resource's available time

▼ What is resource leveling technique?

it is a technique used to resolve conflicts by delaying tasks

▼ What is the goal of developing project team process?

The main goal is to help people work together more effectively to improve project performance

▼ How can Tuckman model helps building effective teams?

It can help by providing five fixed phases to form a team

1. Forming → Introduction to team members
2. Storming → Team members share opinions
3. Norming → Team members have developed a common working method
4. Performing → Emphasis on reaching the team goals rather than a team prcocess
5. Adjourning → Break-up the team after completion

▼ What is the social styles profile?

It is a profile to describe a person's attitude

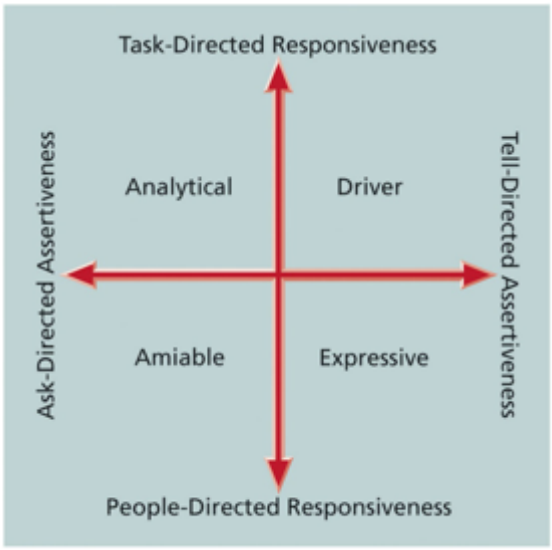


FIGURE 9-9 Social styles

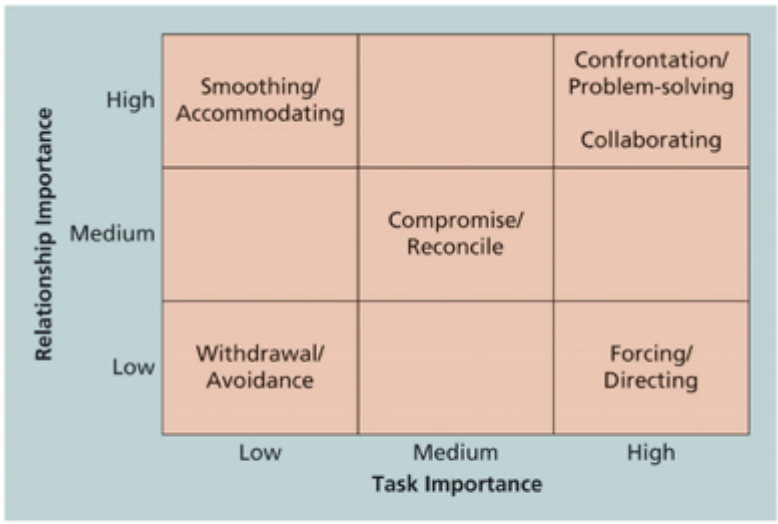
▼ In managing the project team process, what key decisions must be held by the project manager?

1. Changes to be requested
2. Corrective or preventive actions
3. Updates needed

▼ What are the conflict handling approaches?

1. Confrontation → Directly face a conflict using a problem-solving approach

2. Compromise → Use a give-and-take approach
3. Smoothing → Focus on areas of agreement
4. Forcing → Win-lose approach
5. Withdrawal → Retreat from and actual or potential disagreement
6. Collaborating → Decision makers incorporate different viewpoints and insights to develop agreement and commitment



Source: *Kathy Schwalbe, An Introduction to Project Management, Sixth Edition* (September 2017)

FIGURE 9-11 Conflict handling modes

▼ Can a conflict be good?

Yes, task-related conflicts often improve team performance and generate new ideas but emotional conflict often cause lower team performance

▼ What are the five indicators of a dysfunctional team?

1. Absence of trust
2. Fear of conflict
3. Lack of commitment
4. Avoidance of accountability
5. Inattention to results

▼ What does controlling resources means?

It means ensuring physical resources assigned to the project are available as planned

Chapter 10 - Project Communications Management

- What are the main processes in communication management?
  1. Plan communication management
  2. Manage communication
  3. Monitor communication
- Name some methods that help for an effective communication
  1. Focus on group and individual communication needs
  2. Use formal and informal methods for communicating
  3. Distribute important information in an effective and timely manner
  4. Set the stage for communicating bad news
  5. Determine the number of communication channels
- What is the skill that can lead for effective individual communication?

  To try to understand the person you are talking to. In other words, put yourself in someone else's shoes before you can truly communicate
- How can you distribute information in an effective and timely manner?
  1. Include detailed technical information that affects critical performance features
  2. Document any changes in technical specifications
  3. Report bad news
  4. Have short, frequent meetings
- How to deliver a bad news to a key stakeholder?

  First try to identify the cause of the issue and its impact on the project and put information in context
- What are communication channels?

  It is a pathways where people can talk to each other

Communication channels = n(n-1)/2
n → number of people involved

▼ What are the contents of communications management plan?

1. Stakeholder communication requirements
2. Information to be communicated, including the format and the content
3. Who will receive the information and who will produce it
4. Frequency of communication
5. Suggested methods or technologies for conveying the information
6. Escalation procedures for resolving issues
7. Revision procedures for updating the communications management plan
8. A glossary of common terminology

▼ What is the meaning of managing communications?

It is process where information should be delivered to the right people at the right time and in a useful format

▼ What considerations that can help in managing communication?

1. Use of technology
2. Appropriate methods and media to use
3. Performance reporting

▼ What are the types of communications?

1. Interactive communication → Two or more people interact to exchange information via meetings, phone calls or video conferencing
2. Push communication → information is sent or pushed to recipients without their request via reports, emails, faxes
3. Pull communication → information is sent to recipients at their request via websites, bulletin boards, blogs

▼ What is reporting performance?

It is to keep stakeholders informed about how resources are being used to achieve project objectives

▼ What are the types of performance reports?

1. Progress report → Describe what the project team has accomplished during a certain period of time
2. Status report → Describe where the project stands at a specific point in time
3. Forecasts → Predict future project status and progress based on past information and trends

▼ What is the main goal in monitoring communications?

The goal is to ensure the optimal flow of information throughout the entire project life cycle
(better to have a facilitator from outside the project team to monitor communication)

▼ List some suggestions for improving the project communication

1. Develop better communication skills
2. Run effective meetings
3. Use e-mail and other technologies effectively
4. Employ templates for project communication

▼ What are the guidelines for having an effective meeting?

1. Determine if a meeting can be avoided
2. Define the purpose and intended outcome of the meeting
3. Determine who should attend the meeting
4. Provide an agenda to participants before the meeting
5. Prepare handouts and visual aids, and make logistical arrangements ahead of time
6. Run the meeting professionally
7. Set the ground rules for the meeting
8. Build relationships

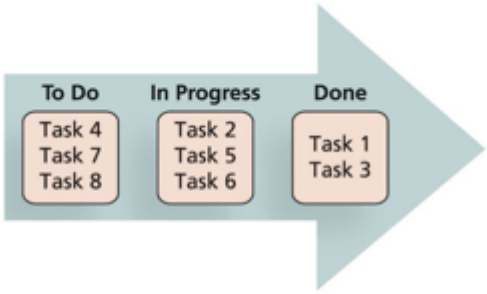
▼ What are the guidelines to use e-mail more effectively?

1. Be sure to send information to the right people
2. Use meaningful subject lines and limit the content of emails to only one main subject

3. Be as clear and concise as possible
4. Reread your e-mail before you send it
5. Limit the number and size of e-mail attachments
6. Delete e-mail that you do not need to save or that does not require a response
7. Make sure the virus protection software is up to date
8. Respond to e-mail quickly
9. If you need to keep e-mail, file each message appropriately

▼ What is the purpose of kanban boards?

Kanban boards are used to visualize workflow



Source: Kathy Schwalbe, *An Introduction to Project Management*, Fifth Edition (2015)

FIGURE 10-3 Sample kanban board

▼ How can providing templates help increasing the communication effectiveness?

It can help because some people are afraid to ask for help and these templates provide examples and guidance

▼ What is lessons-learned report?

It is a report that contains important information they have learned from working on the project

Chapter 11 - Project Risk Management

▼ What is project risk management?

It is the art and science of identifying, analyzing, and responding to risk throughout the life of a project

▼ What is the lowest mature knowledge area?

Risk management

▼ What is the meaning of risk?

Risk is an uncertainty that can have a negative or positive effect on meeting project objectives

▼ Give an example of positive risk?

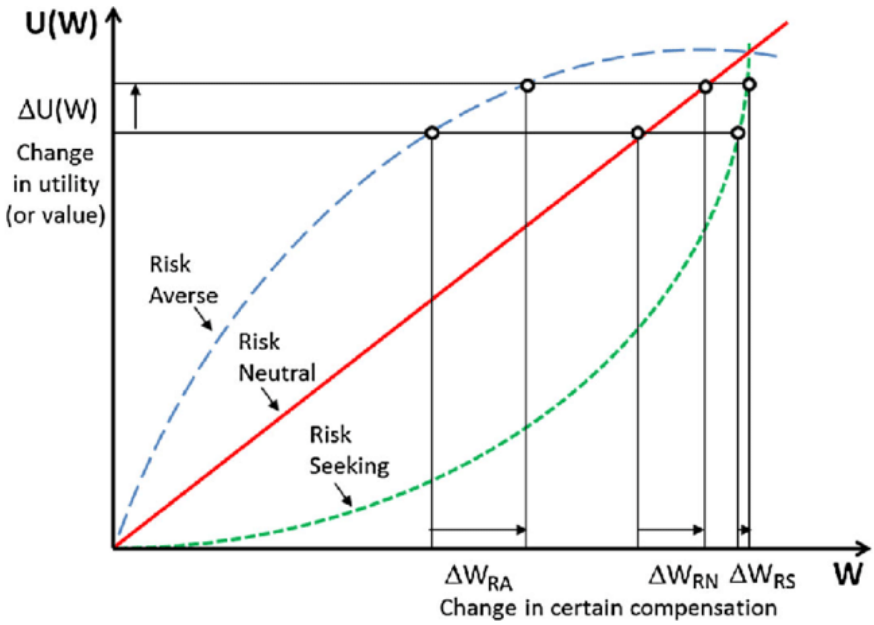
Investing in a new opportunity

▼ What is risk utility?

It is the amount of satisfaction or pleasure received from a potential payoff

▼ What are the kinds of people when dealing with risks?

1. Risk-averse → Try to avoid risks (low utility)
2. Risk-neutral → balance risk (medium utility)
3. Risk-seeking → Seek and look for risks (high utility)



▼ What are the processes in project risk management?

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. Monitoring risk

▼ What is the output in planning risk management process?

The main output is a risk management plan → documents the procedures for managing throughout a project

▼ what other plans could be formed in planning risk management process?

1. Contingency plan → Predefined actions that the project team will take if an identified risk even occurs
2. Fallback plans → Developed for risks that have a high impact on meeting project objectives
3. Contingency reserves → Funds included in the cost baseline that can be used to mitigate cost or schedule overruns if known risks occur
4. Management reserves → Funds help for unknown risks that are used for management control purposes

▼ What is risk breakdown structure?

It is a hierarchy of potential risk categories for a project

▼ Why identifying risks is important?

Because you cannot manage risks if you do not identify them first

▼ What techniques and tools that can be used to identify risks?

1. Brainstorming → Group attempts to generate ideas or fund a solution for a specific problem without any judgment
2. The Delphi technique → Used to derive an agreement among a panel of experts who make predications about future developments
3. Interviewing → Fact finding technique for collecting information in face-to-face, phone, emails

4. SWOT analysis → Analyze strengths, weaknesses, opportunities and threats

▼ What is risk register?

Details of all risks that have been identified along with their analysis and plans for how those risks will be treated

▼ Give an example of risk register

No.	Rank	Risk	Description	Category	Root Cause	Triggers	Potential Responses	Risk Owner	Probability	Impact	Status
R44	1										
R21	2										
R7	3										

▼ What is risk report?

is a document used to present information (e.g. no. of identified threats and opportunities, distribution of risks across risk categories, metrics and trends) on overall project risk

▼ What is the meaning of performing qualitative risk analysis?

It is a process to evaluate the likelihood and impact of identified risks to determine their magnitude and priority

▼ What techniques can be used to perform qualitative risk analysis?

1. Probability/ Impact matrixes
2. The top ten risk item tracking
3. Expert judgment

▼ What is the meaning of Probability/ Impact matrixes?

It lists relative probability of a risk occurring on one side of a matrix and the relative impact of the risk occurring

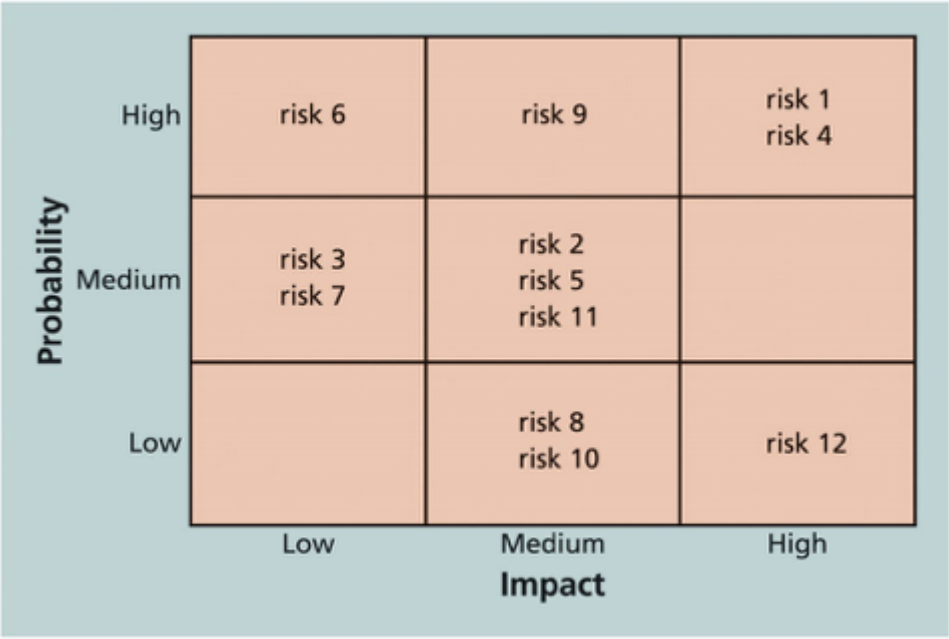


FIGURE 11-5 Sample probability/impact matrix

▼ What is top ten risk item tracking technique?

It is a technique that helps to identify risks and maintain an awareness of risks throughout the life of a project

	Monthly Ranking	Monthly Ranking	Monthly Ranking	
Risk Event	Rank This Month	Rank Last Month	Number of Months in Top Ten	Risk Resolution Progress
Inadequate planning	1	2	4	Working on revising the entire project management plan
Poor definition	2	3	3	Holding meetings with project customer and sponsor to clarify scope
Absence of leadership	3	1	2	Assigned a new project manager to lead the project after the previous one quit
Poor cost estimates	4	4	3	Revising cost estimates
Poor time estimates	5	5	3	Revising schedule estimates

▼ What is a watch list?

It is a list of risks that are low priority, but are still identified as potential risks

▼ What is quantitative risk analysis?

It is further analysis of the highest priority risks during a which a numerical or quantitative rating is assigned in order to develop a probabilistic analysis of the project.

▼ What are the techniques used to conduct quantitative analysis?

1. Decision tree analysis
2. Simulation
3. Sensitivity analysis

▼ What is decision tree technique?

It is a diagramming analysis technique used to help select the best course of action in situations in which future outcomes are uncertain

▼ What is expected monetary value?

It is a technique used to show how much money you can expect to make from a certain decision.

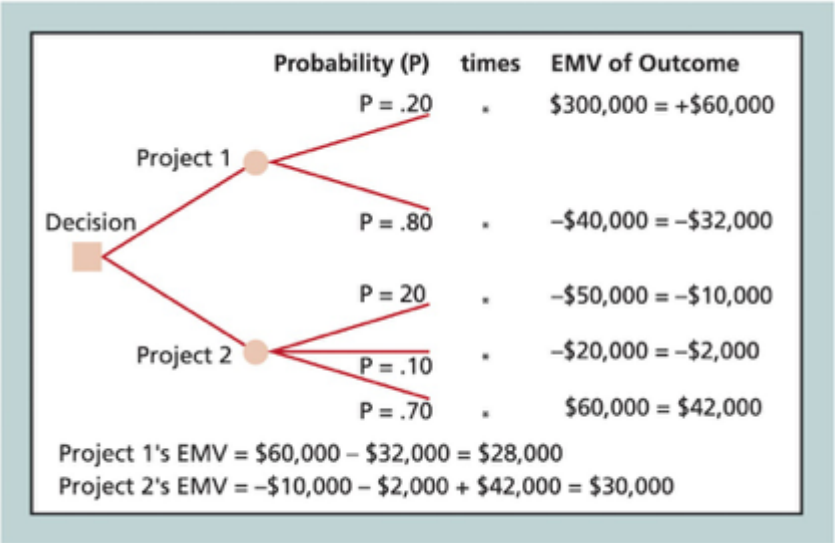


FIGURE 11-7 Expected monetary value (EMV) example

▼ What is simulation?

Uses a representation or model of a system to analyze the expected behavior or performance of the system

▼ What is monte carlo analysis?

Monte carlo analysis simulates a model's outcome many times to provide a statistical distribution of the calculated results (can be used to estimate the cost or when to finish the project)

▼ What are the steps to perform monte carlo analysis?

1. Collect estimates for the variables in the model (most likely, optimistic, pessimistic)
2. Determine the probability distribution of each variable
3. Select random value for the variables based on the probability distribution
4. Run the analysis
5. Repeat the steps many times to obtain the probability distribution of the model's results

▼ When to use sensitivity analysis?

It is used to show the effects of changing one or more variables on an outcome

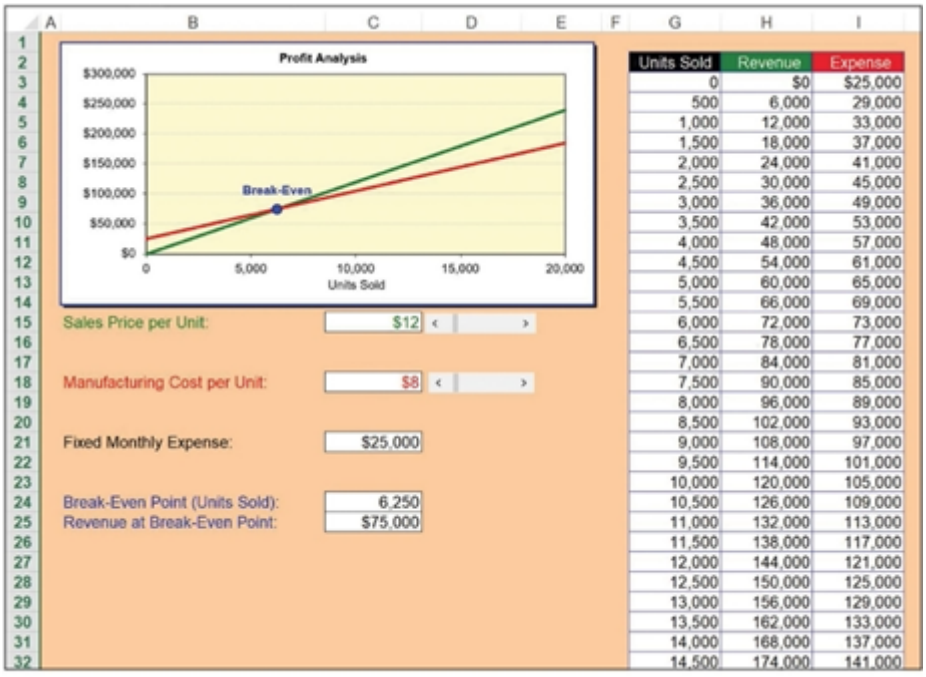


FIGURE 11-9 Sample sensitivity analysis for determining break-even point

▼ What are the strategies to respond for a negative risk?

1. Avoidance → Eliminate risk cause
2. Acceptance → Accepting the identified risk and not taking any other action
3. Transference → Shifting of the burden of loss for a risk to another party

4. Mitigation → Reduce the impact of the risk by reducing the probability of the risk
5. Escalation → Risk does not affect project objectives but could still impact another part of the organization

▼ What are the strategies to respond for a positive risk?

1. Exploitation → Do whatever to make sure the positive risk happens
2. Sharing → Share the ownership of the risk with other party
3. Enhancement → Strategy aimed at increasing the probability of a positive risk occurrence
4. Acceptance → Accepting the identified risk and not taking any other action
5. Escalation → Risk does not affect project objectives but could still impact another part of the organization

▼ What are residual risks?

They are the risks that remain after all of the response strategies have been implemented

▼ What are secondary risks

Risks that arise as a direct outcome of implementing a risk response

Chapter 12 - Project Procurement Management

▼ What does procurement means?

It means acquiring goods and/or services from an outside source

▼ Why companies often outsource?

1. Access skills and technologies
2. Reduce both fixed and recurrent costs
3. Allow the client organization to focus on its core business

4. Provide flexibility
5. Increase accountability

▼ What are the main processes in project procurement management?

1. Plan procurement management
2. Conduct procurements
3. Controlling procurements

▼ What is the main output of planning procurement management?

1. Decide how to procure, how much to procure, when to procure
2. Make-or-buy decision

▼ What are the types of contracts?

1. Fixed price or lump sum → Involve a fixed total price for a well-defined product or service
2. Cost-reimbursable → Involve payment to the seller for direct and indirect costs
3. Time and material → Hybrid of both fixed price and cost-reimbursable contracts
4. Unit price → Require the buyer to pay the seller a predetermined amount per unit of service

▼ What tools and techniques can be used for planning procurement management?

1. Make-or-buy analysis → Used to determine whether and organization should buy or make the resource
2. Expert judgement → Experts inside and outside an organization can provide advice in planning purchases and acquisitions
3. Market research → Provide general information about potential suppliers available

▼ What is statement of work (SOW)?

It is a description of the work required for the procurement (can be part of scope statement)

▼ What are the bid documents that can be used in procurement?

1. Request for proposal (RFP) → Used to request proposals from sellers
2. Request for quotation (RFQ) → Used to request quotes or bids from suppliers

▼ How to select good source for you procurement?

1. Prepare some form of evaluation criteria
2. Beware of proposals that look good on paper (Look for past performance and management approach)
3. For IT projects try to have a technical presentation

		Proposal 1		Proposal 2		Proposal 3		Etc.	
Criteria	Weight	Rating	Score	Rating	Score	Rating	Score		
Technical approach	30%	90	27	80	24	70	21		
Management approach	30%	85	25.5	75	22.5	85	25.5		
Past performance	20%	95	19	70	14	75	15		
Price	20%	75	15	95	19	80	16		
Total score	**100%**		**86.5**		**79.5**		**77.5**		

FIGURE 12-4 Sample proposal evaluation sheet

▼ What are the steps performed after planning for procurement management?

1. Decide whom to ask to do the work
2. Send appropriate documentation to potential sellers
3. Obtain proposals or bids
4. Select a seller
5. Award a contract

▼ What is bidders conference?

It is a meeting with prospective sellers prior to preparation of their proposals or bids

▼ What is the final output when performing a procurement?

It is a contract signed by the buyer and the selected seller

▼ What is performed in controlling procurement process?

Ensures the seller's performance meets contractual requirements based on the information in the contract

▼ Give some suggestions for change control in contracts

1. Changes to any part of the project need to be reviewed, approved, and documented by the same people in the same way that the original part of the plan was approved
2. Evaluation of any change should include an impact analysis
3. Changes must be documented in writing
4. Project managers and teams should stay closely involved to make sure the new system will meet business needs
5. Have backup plans
6. Use tools and techniques, such as a contract change control system, buyer-conducted performance reviews.

▼ What actions are performed in closing procurements?

1. Completing and settling contracts and resolving any open items
2. The project team should determine if all work was completed correctly and archive information for future use
3. The contract itself should include requirements for format acceptance and closure

Chapter 13 - Project Stakeholder Management

▼ What is the purpose of project stakeholder management?

The goal is to identify all people or organizations affected by a project, to analyze stakeholder expectations and to effectively engage stakeholders

▼ What are the project stakeholder management processes?

1. Identify stakeholders
2. Planning stakeholders management

3. Managing stakeholder engagement
4. Monitoring stakeholder engagement

▼ What are the two types of stakeholders?

1. Internal stakeholder → Sponsor, project team, support staff, and internal customers
2. External stakeholder → External customer, competitors, suppliers, government officials

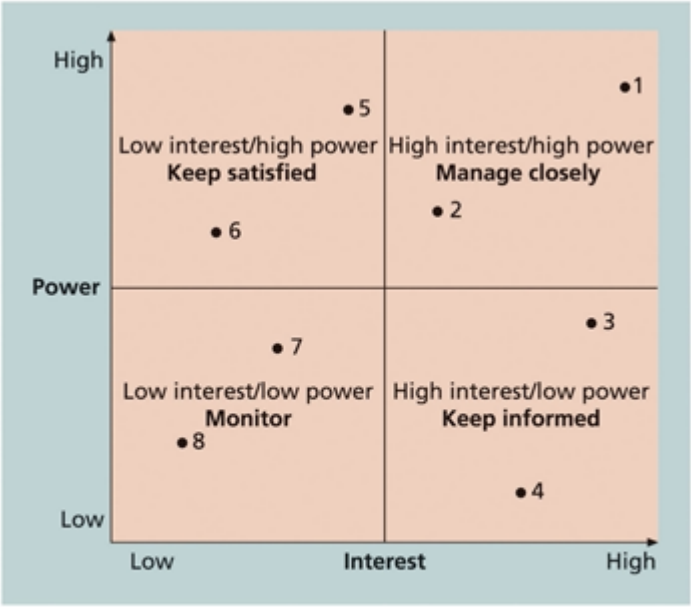
▼ What is a stakeholder register?

It is a document which contains basic information about stakeholders

Name	Position	Internal/ External	Project Role	Contact Information
Stephen	VP of Operations	Internal	Project sponsor	stephen@globaloil.com
Betsy	CFO	Internal	Senior manager, approves funds	betsy@globaloil.com
Chien	CIO	Internal	Senior manager, PM's boss	chien@globaloil.com
Ryan	IT analyst	Internal	Team member	ryan@globaloil.com
Lori	Director, Accounting	Internal	Senior manager	lori@globaloil.com
Sanjay	Director, Refineries	Internal	Senior manager of largest refinery	sanjay@globaloil.com
Debra	Consultant	External	Project manager	debra@gmail.com
Suppliers	Suppliers	External	Supply software	suppliers@gmail.com

▼ What tool can be used to determine the approach for managing stakeholder relationships?

A power/interest grid can be used to group stakeholders based on their level of authority (power) and their level of concern (interest) for project outcomes, and based on the outcome of this grid we can determine how to approach the stakeholders



Source: Kathy Schwalbe, *An Introduction to Project Management*, Fourth Edition (2012)

FIGURE 13-2 Power/interest grid

▼ What are the stakeholder engagement levels?

1. Unaware → Unaware of the project and its potential impact on them
2. Resistant → Aware of the project yet resistant to change
3. Neutral → Aware of the project yet neither supportive nor resistant
4. Supportive → Aware of the project and supportive of change
5. Leading → Aware of the project and its potential impacts and actively engaged in helping it succeed

▼ What are the components of the stakeholder management plan?

1. Current and desired engagement levels
2. Interrelationships between stakeholders
3. Communication requirements
4. Potential management strategies for each stakeholders
5. Methods for updating the stakeholder management plan

▼ Is the stakeholder management plan included on the official project documents?

No, because it contains sensitive information about the stakeholders and it should not be visible

▼ What is the expectation management matrix?

It is a matrix developed by the stakeholder to show what is the most important standards to them and in order.

Measure of Success	Priority	Expectations	Guidelines
Scope	1	The scope statement clearly defines mandatory requirements and optional requirements.	Focus on meeting mandatory requirements before considering optional ones. In this case, following corporate IT standards is optional.
Time	1	There is little give in the project completion date. The schedule is very realistic.	The project sponsor must be alerted if any issues might affect meeting schedule goals.
Cost	3	This project is crucial to the organization. If you can clearly justify the need for more funds, they can be made available.	There are strict rules for project expenditures and escalation procedures. Cost is very important, but it takes a back seat to meeting schedule and then scope goals.
Technology/ standards	2	There are several potential solutions available, but only one that meets all of the sponsor's technical requirements, especially for accounting.	While corporate IT standards are important, an exception makes sense in this case.

▼ What is issue log?

It is a simple list or spreadsheet that helps managers track the issues that arise in a project and prioritize a response to them

Issue #	Description	Impact	Date Reported	Reported By	Assigned to	Priority (H/M/L)	Due Date	Status	Comments
1	Need requirements categorized as mandatory and optional	Cannot do much without it	Feb. 4	Ryan	Stephen	H	Feb. 8	Closed	Requirements clearly labeled
2	Need shorter list of potential suppliers —no more than 10	Will delay evaluation without it	Feb. 6	Debra	Ryan	H	Feb. 12	Open	Almost finished; needed requirements categorized first
Etc.									

▼ Give suggestions to avoid challenges when managing stakeholders

1. Be clear from the start
2. Explain the consequences

3. Have a contingency plan
4. Avoid surprises
5. Take a stand

▼ What is the meaning of engagement?

Engagement involves a dialogue in which people seek understanding and solutions to issues of mutual concerns