Engineering Project Management & Finance

(UESTC 3031 & UESTCHN 3012)

Project Management (Part 3)

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Outline

- **Part 1:** Introduction, The Role of the Project Manager
- **Part 2:** Project Scope Management, Project Schedule Management
- **Part 3:** Project Cost Management, Project Resource Management
- **Part 4:** Project Communications Management, Project Risk Management

PROJECT COST MANAGEMENT

Session Overview

- Cost Management Processes
  - Plan Cost Management
  - Estimate Costs
  - Determine Budget
  - Control Costs

Project 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.

Plan Cost Management

- The Plan Cost Management process is the process of defining how the project costs will be estimated, budgeted, managed, monitored, and controlled.

- The key benefit of this process is that it provides guidance and direction on how the project costs will be managed throughout the project.

Inputs:

1. Project charter
2. Project management plan
3. Enterprise Environmental Factors
4. Organizational Process Assets

Tools & Techniques:

1. Expert Judgment
2. Data analysis
3. Meetings

Outputs

1. Cost management plan

Plan Cost Management - Tools and Techniques

Expert Judgment

Data analysis

Meetings

Alternatives analysis

- Strategic funding options such as
  - self-funding
  - funding with equity
  - funding with debt

Ways to acquire project resources such as

- Making
- Purchasing
- Renting
- Leasing

Inputs:

1. Project charter
2. Project management plan
3. Enterprise Environmental Factors
4. Organizational Process Assets

Tools & Techniques:

1. Expert Judgment
2. Data analysis
3. Meetings

Outputs

1. Cost management plan

Plan Cost Management - Outputs

- The cost management plan describes how the project costs will be planned, structured, and controlled.

Cost management plan

- Units of measure
- Level of precision
- Level of accuracy
- Organizational procedures links
- Control thresholds
- Rules of performance measurement
- Reporting formats
- Additional details

Estimate Costs

Plan Cost Management → Estimate Costs → Determine Budget → Control Costs

- The process of developing an approximation of the cost of resources needed to complete project work.
- Various alternatives and trade-offs and risks should be considered (Ex: make versus buy versus lease, resource sharing)
- May include labor, materials, equipment, services, facilities, IT, inflation allowance, exchange rates, cost of financing, contingency reserve, management reserve, indirect costs, etc.

- The key benefit of this process is that it determines the monetary resources required for the project.
- The key principle in the Estimate Costs process is that the less that is known earlier in the project, the wider the tolerance of cost range, as compared to when more is known later in the project, when the range is minimized.

Inputs:

1. Project management plan
2. Project documents
3. Enterprise Environmental Factors
4. Organizational Process Assets

Tools & Techniques:

1. Expert judgment
2. Analogous estimating
3. Parametric estimating
4. Bottom-up estimating
5. Three-point estimating
6. Data analysis
7. Project management information system
8. Decision making

Outputs

1. Cost estimates
2. Basis of estimates
3. Project documents updates

Accuracy of Estimates

Rough Order of Magnitude (ROM)

- Ranges from -25% to 75%
- Used in initiating process (analogous)

Definitive Estimate

- Ranges from -5% to 10%
- Used late in planning process (bottom-up)

If a project has a $250,000 USD estimate, assuming it didn't change as it went through the estimating process, the rough order of magnitude tolerance is $187,500 to $437,500. The definitive or control estimate tolerance is $237,500 to $275,000.

- Aligning with the *PMBOK® Guide*, in the Initiating process group a tolerance range for a Rough Order of Magnitude (ROM) estimate could be **-25% to + 75%** and as the project gains momentum into the Executing process group, the tolerance could narrow to **-5% to +10%.**

Determine Budget

Plan Cost Management → Estimate Costs → Determine Budget → Control Costs

- The process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline.

- The key benefit of this process is that it determines the cost baseline against which project performance can be monitored and controlled.

Inputs:

1. Project management plan
2. Project documents
3. Business documents
4. Agreements
5. Enterprise Environmental Factors
6. Organizational Process Assets

Tools & Techniques:

1. Expert judgment
2. Cost aggregation
3. Data analysis
4. Historical information review
5. Funding limit reconciliation
6. Financing

Outputs

1. Cost baseline
2. Project funding requirements
3. Project documents updates

Determine Budget - Tools and Techniques

Cost aggregation

- Summing up activity costs to a work package, then to higher levels (control accounts or deliverables), and further up to project level

Funding limit reconciliation

- Funding limits may require rescheduling work if planned costs exceed available funds.

Financing

- External funding for long term infrastructure, public and industrial projects

Inputs:

1. Project management plan
2. Project documents
3. Business documents
4. Agreements
5. Enterprise Environmental Factors
6. Organizational Process Assets

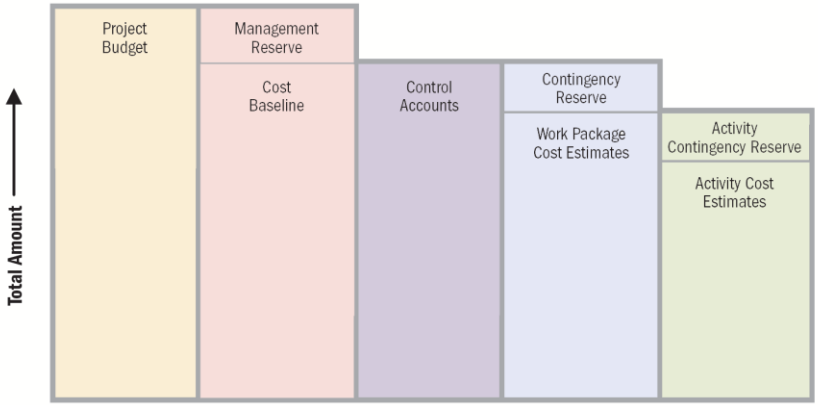
Tools & Techniques:

1. Expert judgment
2. **Cost aggregation**
3. Data analysis
4. Historical information review
5. **Funding limit reconciliation**
6. **Financing**

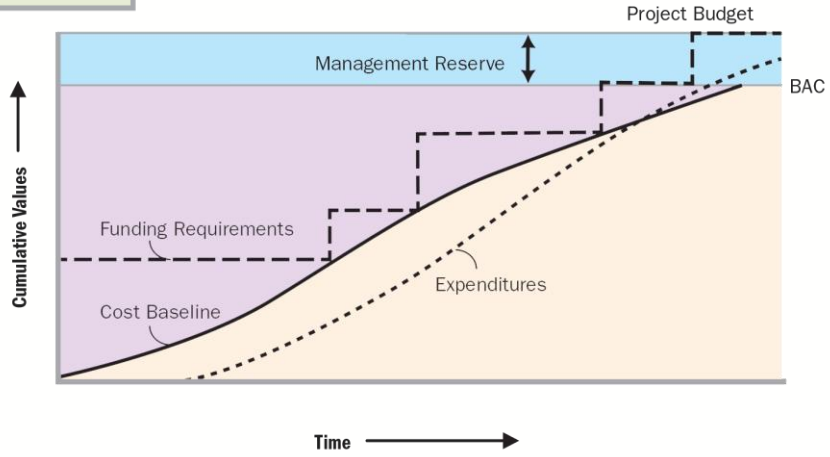
Outputs

1. Cost baseline
2. Project funding requirements
3. Project documents updates

Determine Budget - Outputs



Project Budget Component



Cost Baseline, Expenditures, and Funding Requirements

Inputs:

1. Project management plan
2. Project documents
3. Business documents
4. Agreements
5. Enterprise Environmental Factors
6. Organizational Process Assets

Tools & Techniques:

1. Expert judgment
2. Cost aggregation
3. Data analysis
4. Historical information review
5. Funding limit reconciliation
6. Financing

Outputs

1. Cost baseline
2. Project funding requirements
3. Project documents updates

Control Costs

Plan Cost Management → Estimate Costs → Determine Budget → Control Costs

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

- The key benefit of this process is that the cost baseline is maintained throughout the project.

Inputs:

1. Project management plan
2. Project documents
3. Project funding requirements
4. Work performance data
5. Organizational Process Assets

Tools & Techniques:

1. Expert judgment
2. Data analysis
3. To-complete performance index (TCPI)
4. Project management information system

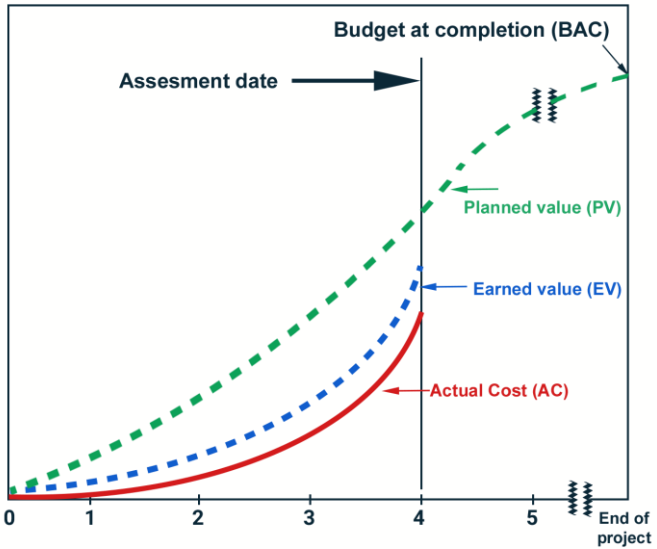
Outputs

1. Work performance information
2. Cost forecasts
3. Change requests
4. Project management plan updates
5. Project documents updates

Control Costs - Tools and Techniques
Data analysis

Earned value analysis (EVA):

- EVM develops and monitors three key dimensions:
  - **Planned Value (PV)**: Authorized budget assigned to scheduled work.
  - **Earned Value (EV)**: EV is a measure of work performed in terms of the budget authorized for that work.
  - **Actual Cost (AC)**: AC is the realized cost incurred



Inputs:

1. Project management plan
2. Project documents
3. Project funding requirements
4. Work performance data
5. Organizational Process Assets

Tools & Techniques:

1. Expert judgment
2. **Data analysis**
3. To-complete performance index (TCPI)
4. Project management information system

Outputs

1. Work performance information
2. Cost forecasts
3. Change requests
4. Project management plan updates
5. Project documents updates

Project Management Institute, A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) – Sixth edition, Project Management Institute, Inc., 2017, Figure 7-12, Page 264.

Control Costs - Tools and Techniques
Data analysis

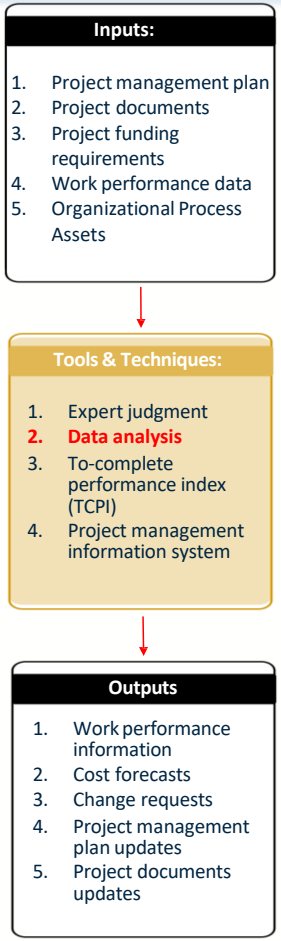
Example (EVA):

- Total Project Budget (BAC) = $1,000
- Planned Completion by Now: 50% of the work was planned to be completed by this point in time.
- Actual Completion by Now: 40% of the work has actually been completed.
- Actual Money Spent = $550

Planned Value (PV) = 50% of $1,000 = $500
(By now, the plan was to complete $500 worth of work.)

Earned Value (EV) = 40% of $1,000 = $400
(The work actually done so far is worth $400.)

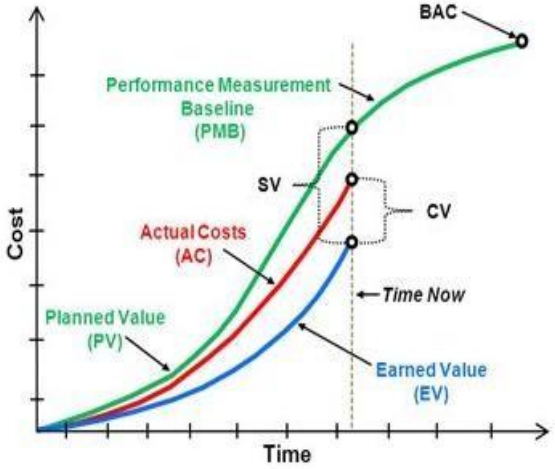
Actual Cost (AC) = $550
(You spent $550 to complete $400 worth of work.)



Control Costs - Tools and Techniques
Data analysis

Variance analysis:

- Examples of variance analysis:
  - **Schedule Variance (SV)**: The difference between the earned value and the planned value. **Equation:** **SV=EV-PV**
  - **Cost Variance (CV)**: The difference between the earned value and the actual cost. **Equation:** **CV=EV-AC**



The EVA Schedule Variance (SV) is a useful metric in that it can indicate when a project is falling behind or is ahead of its baseline schedule. The Cost Variance (CV) is particularly critical because it indicates the relationship of physical performance to the costs spent. Negative CV is often difficult for the project to recover.

Inputs:

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2. Project documents
3. Project funding requirements
4. Work performance data
5. Organizational Process Assets

Tools & Techniques:

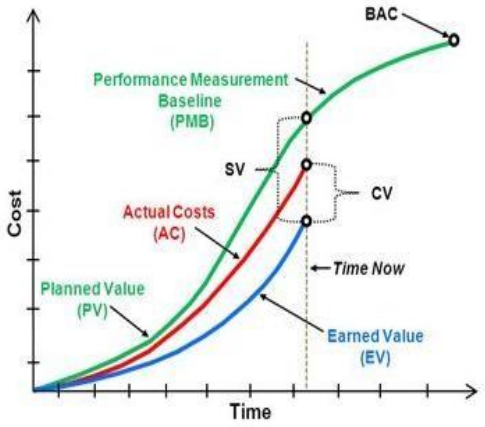
1. Expert judgment
2. **Data analysis**
3. To-complete performance index (TCPI)
4. Project management information system

Outputs

1. Work performance information
2. Cost forecasts
3. Change requests
4. Project management plan updates
5. Project documents updates

Control Costs - Tools and Techniques
Data analysis

- **Schedule Performance Index (SPI)**: Ratio of earned value to planned value. **Equation: SPI=EV/PV**
- **Cost Performance Index (CPI)**: Ratio of earned value to actual cost. **Equation: CPI = EV/AC**



- CPI is greater than 1 - this is good - project is under budget.
- SPI is less than 1 - this is bad - project is behind schedule.

Name	Formula
Cost Variance (CV)	EV – AC
Schedule Variance (SV)	EV – PV
Cost Performance Index (CPI)	EV / AC
Schedule Performance Index (SPI)	EV / PV

Inputs:

1. Project management plan
2. Project documents
3. Project funding requirements
4. Work performance data
5. Organizational Process Assets

Tools & Techniques:

1. Expert judgment
2. **Data analysis**
3. To-complete performance index (TCPI)
4. Project management information system

Outputs

1. Work performance information
2. Cost forecasts
3. Change requests
4. Project management plan updates
5. Project documents updates

Earned Value Measurement Example

You have been assigned to a project whose activities along with estimates shown below. The project progressed for 90 days so far, and you have to assess and report the project health using the Earned value analysis. Total Value of the project is $100 Million and so far, 26% of the work has been accomplished costing $30.5 Million.

WBS	Est. Duration	Est. Cost
1.1 Work Category 1		
1.1.1 Activity A	10 days	$13M
1.1.2 Activity C	37 days	$ 4M
1.2 Work Category 2		
1.2.1 Activity D	16 days	$ 6M
1.2.2 Activity B	15 days	$ 3M
1.2.3 Activity E	12 days	$ 3M
1.3 Work Category 3		
1.3.1 Activity I	30 days	$11M
1.3.2 Activity H	17 days	$21M

90 Days

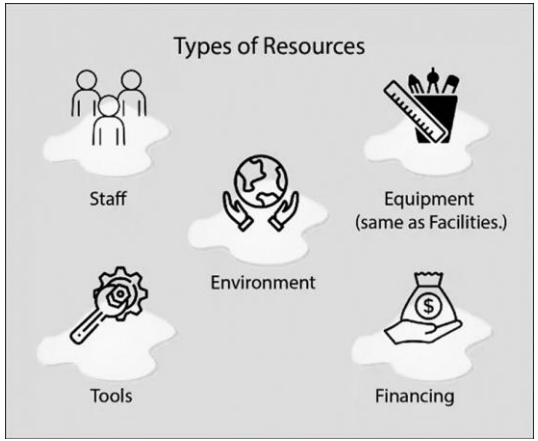
PROJECT RESOURCE MANAGEMENT

Session Overview

- Resource Management
  - Plan Resource Management
  - Estimate Activity Resources
  - Acquire Resources
  - Develop Team
  - Manage Team
  - Control Resources

Key concepts

- Resources are a risk if not well managed & controlled (timeliness, quality, inventory).



- The project manager should be aware of different aspects that influence the team, such as:
  - Team environment,
  - Geographical locations of team members,
  - Communications among stakeholders,
  - Internal and external politics,
  - Cultural issues and organizational uniqueness, and
  - Other factors that may alter project performance.

Project Resource Management

Project Resource Management includes the processes to identify, acquire and manage resources required for successful project completion

These processes help ensure the availability of right resources at the right time and place to the project manager and the project team.

Plan Resource Management

Plan Resource Management → Estimate Activity Resources → Acquire Resources → Develop Team → Manage Team → Control Resources

- Plan Resource Management is the process of defying how to estimate, acquire, manage, and use physical and human project resources.
- The key benefit of this process is that it establishes the approach and level of management effort needed for managing project resources based on the type and complexity of the project.

Inputs:

1. Project charter
2. Project management plan
3. Project documents
4. Enterprise environmental factors
5. Organizational process assets

Tools & Techniques:

1. Expert judgment
2. Data representation
3. Organizational theory
4. Meetings

Outputs

1. Resource management plan
2. Team charter
3. Project documents updates

Plan Resource Management - Tools and Techniques

Expert judgment

- Negotiating for the best resources with organization
- Talent management
- Personal development
- Estimating lead times required for acquisition
- Identifying risks associated with resource acquisition, retention and release plans
- Managing sellers and logistic efforts to ensure materials and supplies are available when needed

Data representation

- Hierarchical charts
  - ✓ Work breakdown structures (WBS)
  - ✓ Organizational breakdown structure (OBS)
  - ✓ Resource breakdown structure (RBS)
- Responsibility Assignment Matrix (RAM)
- Text-oriented formats

Organizational Theory

Provides information regarding the way in which people, teams and organizational units behave
Ex:
Herzberg's Theory of Motivation
McGregor's Theory of X and Y
Maslow's Hierarchy of Needs

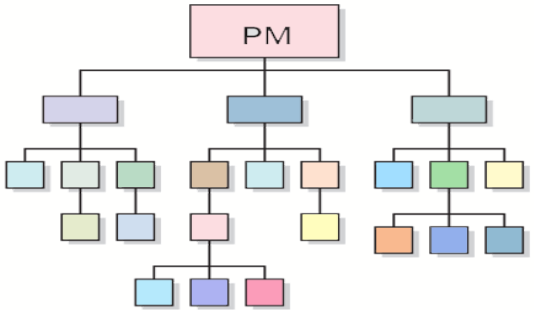
Meetings

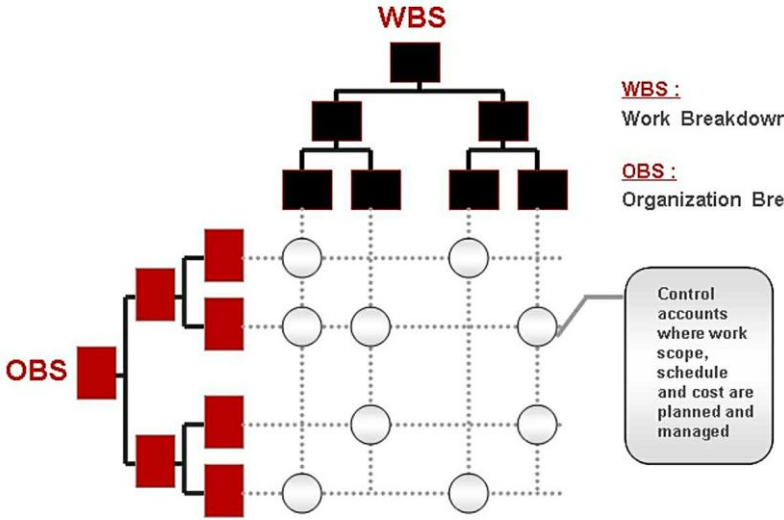
Resource planning related meetings

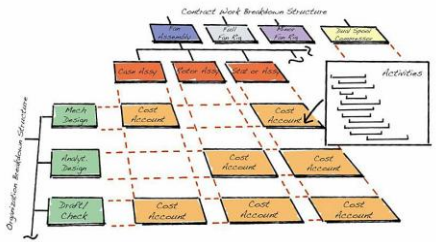
Data representation

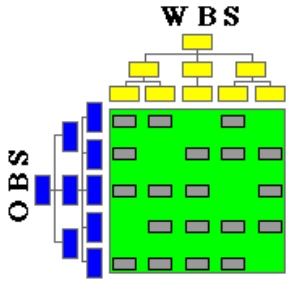
Hierarchical charts

- Work Breakdown Structure (WBS)
- Organizational Breakdown Structure (OBS)
- Resource Breakdown Structure (RBS)









Data representation

Responsibility Assignment Matrix (RAM)

- RAM shows the project resources assigned to each work package.
- Ensures that there is only one person accountable for any one task to avoid confusion of responsibility.
- Example of a RAM is a RACI (responsible, accountable, consult, and inform) chart

RACI Chart	Person				
Activity	Ann	Ben	Carlos	Dina	Ed
Create charter	A	R	I	I	I
Collect requirements	I	A	R	C	C
Submit change request	I	A	R	R	C
Develop test plan	A	C	I	I	R

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

- **R**esponsible – A person to whom the work is assigned
- **A**ccountable – A person who can take final decision or who has ultimate ownership
- **C**onsulted – A person to be consulted before taking a decision
- **I**nformed – A person to whom the decision taken is to be informed

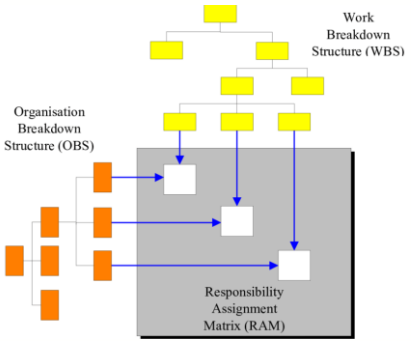
Text-oriented formats

Role

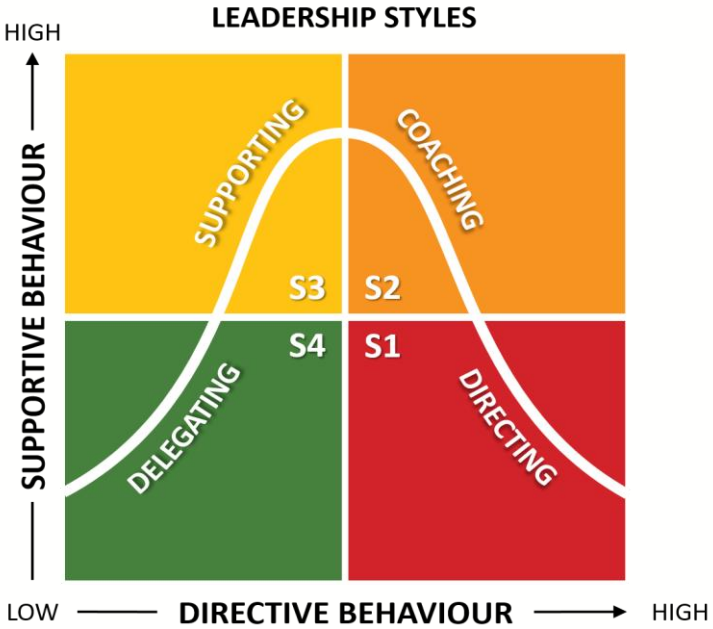
Responsibilities

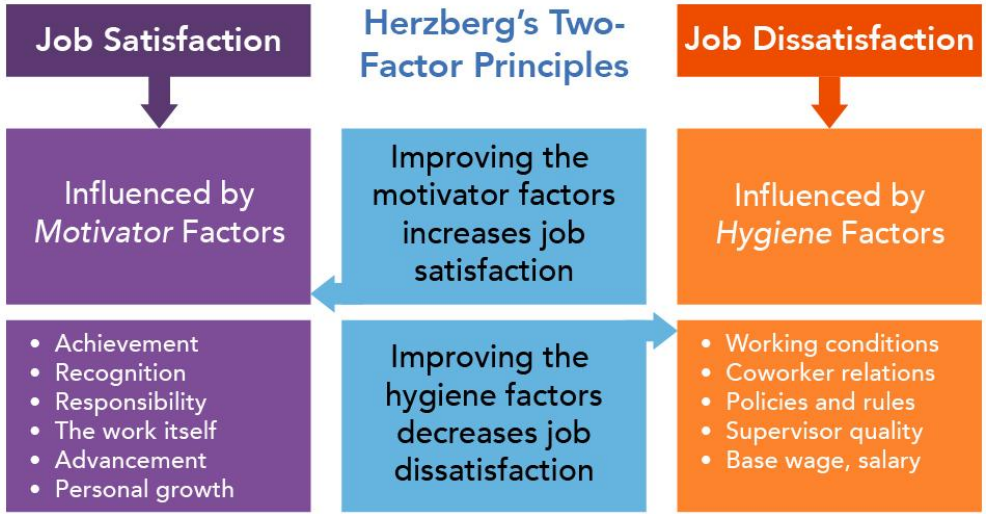
Authority

Task/Deliverable	Role/Team Member 1	Role/Team Member 2	Role/Team Member 3	Role/Team Member 4	Role/Team Member 5
Task 1	R	A	C	I	C
Task 2	A	R	I	C	A
Task 3	I	C	R	A	I
Task 4	C	U	A	R	C
Task 5	A	C	I	C	R



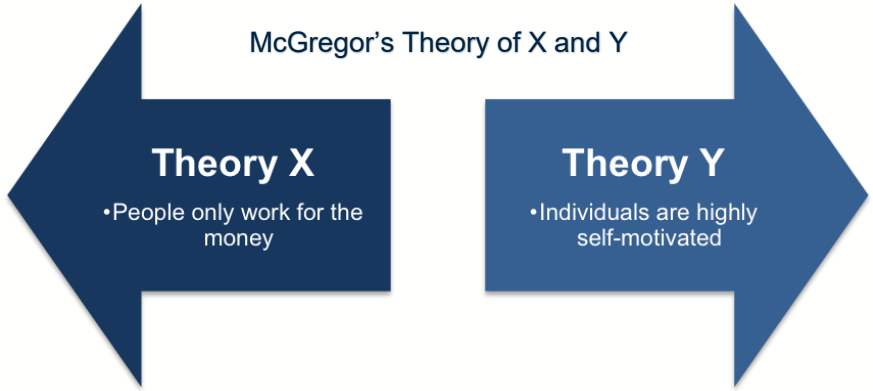
Organizational and Motivation Theories





- There is no single "best" style of leadership. A PM must lead based on the situations that are present.

Organizational and Motivation Theories



- Theory X – people needs to be watched every minute
- Theory Y – people are willing to work without supervision

Estimate Activity Resources

Plan Resource Management → Estimate Activity Resources → Acquire Resources → Develop Team → Manage Team → Control Resources

- Estimate Activity Resources is the process of estimating team resources and the type and quantities of material, equipment, and supplies necessary to perform project work.

- The key benefit of this process is that it identifies the type, quantity, and characteristics of resources required to complete the project.

Inputs

1. Project management plan
2. Project documents
3. Enterprise environmental factors
4. Organizational process assets

Tools & Techniques:

1. Expert judgment
2. Bottom-up estimating
3. Analogous estimating
4. Parametric estimating
5. Data analysis
6. Project management information system
7. Meetings

Outputs

1. Resource requirements
2. Basis of estimates
3. Resource breakdown structure
4. Project documents updates

Acquire Resources

Plan Resource Management → Estimate Activity Resources → Acquire Resources → Develop Team → Manage Team → Control Resources

- Acquire Resources is the process of obtaining team members, facilities, equipment, materials, supplies, and other resources necessary to complete project work.

- The key benefit of this process is that it outlines and guides the selection of resources and assign them to their respective activities.

Inputs:

1. Project management plan
2. Project documents
3. Enterprise Environmental Factors
4. Organizational Process Assets

Tools & Techniques:

1. Decision making
2. Interpersonal and team skills
3. Pre-assignment
4. Virtual teams

Outputs

1. Physical resource assignments
2. Project team assignments
3. Resource calendars
4. Change requests
5. Project management plan updates
6. Project documents updates
7. Enterprise environmental factors updates
8. Organizational process assets updates

Develop Team

Plan Resource Management → Estimate Activity Resources → Acquire Resources → **Develop Team** → Manage Team → Control Resources

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

- The key benefit of this process is that it results in improved teamwork, enhanced interpersonal skills and competencies, motivated employees, reduced attrition, and improved overall project performance.

Inputs:

1. Project management plan
2. Project documents
3. Enterprise environmental factors
4. Organizational process assets

Tools & Techniques:

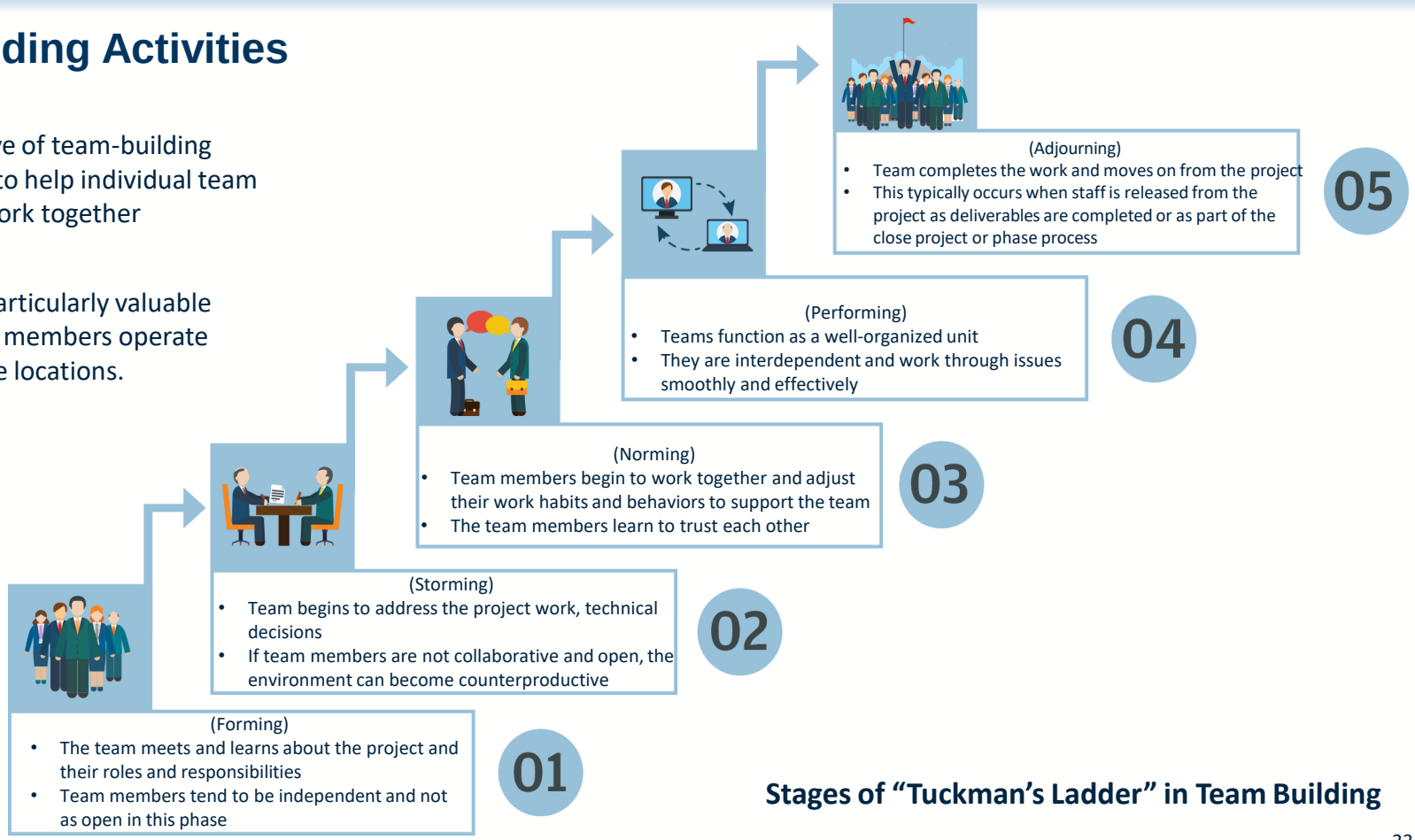
1. Colocation
2. Virtual teams
3. Communication technology
4. Interpersonal and team skills
5. Recognition and rewards
6. Training
7. Individual and team assessments
8. Meetings

Outputs

1. Team performance assessments
2. Change requests
3. Project management plan updates
4. Project documents updates
5. Enterprise environmental factors updates
6. Organizational process assets updates

Team-Building Activities

- The objective of team-building activities is to help individual team members work together effectively.
- These are particularly valuable when team members operate from remote locations.



Stages of "Tuckman's Ladder" in Team Building

Develop Team - Tools and Techniques

Recognition and Rewards

- Tangible, Ex: Money
- Intangible, Ex: Appreciation

Training

- Classroom
- Online
- Computer-based
- On the job training
- Mentoring
- Coaching

Individual and team assessments

- Of strengths, weaknesses, aspirations, preferences, abilities, interactions
- Via surveys, assessments, interviews, tests, focus groups

Meetings

- Team building/development/orientation related

Inputs:

1. Project management plan
2. Project documents
3. Enterprise environmental factors
4. Organizational process assets

Tools & Techniques:

1. Colocation
2. Virtual teams
3. Communication technology
4. Interpersonal and team skills
5. **Recognition and rewards**
6. **Training**
7. **Individual and team assessments**
8. **Meetings**

Outputs

1. Team performance assessments
2. Change requests
3. Project management plan updates
4. Project documents updates
5. Enterprise environmental factors updates
6. Organizational process assets updates

Manage Team

Plan Resource Management → Estimate Activity Resources → Acquire Resources → Develop Team → **Manage Team** → Control Resources

- Manage Team is the process of tracking team member performance, providing feedback, resolving issues, and managing team changes to optimize project performance.

- The key benefit of this process is that it influences team behavior, manages conflict, resolves issues.

Inputs:

1. Project management plan
2. Project documents
3. Work performance reports
4. Team performance assessments
5. Enterprise environmental factors
6. Organizational process assets

Tools & Techniques:

1. Interpersonal and team skills
2. Project management information system

Outputs

1. Change requests
2. Project management plan updates
3. Project documents updates
4. Enterprise environmental factors updates

Conflict Management

Steps for Handling Conflict in Project Management:

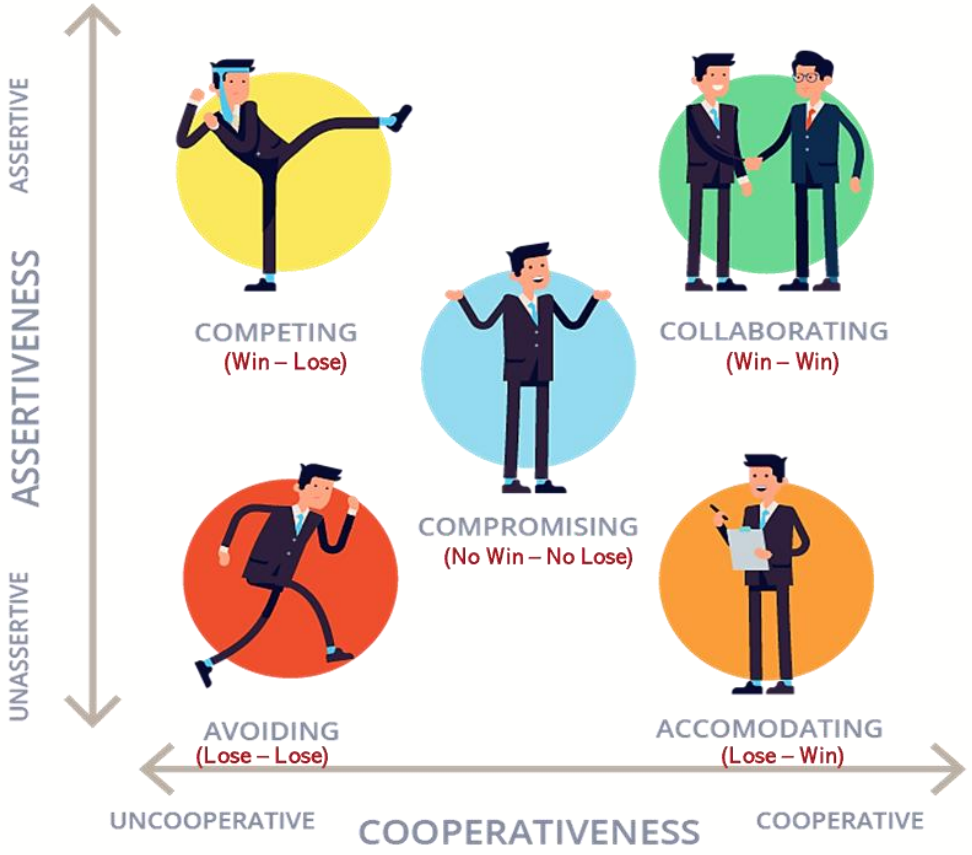
1. **Recognize the Conflict:** Pay attention to signs of conflict, such as tension, disagreements, or poor communication.
2. **Assess the Situation:** Determine whether the conflict is affecting the project or if it can be resolved quickly.
3. **Choose a Strategy:** Select one of the conflict management strategies (Avoiding, Accommodating, Competing, Compromising, or Collaborating).
4. **Communicate:** Encourage open and honest communication to ensure everyone understands each other's concerns and viewpoints.
5. **Seek a Solution:** Work with the team to find the best solution. Make sure it's fair and works for everyone involved.
6. **Follow-Up:** After resolving the conflict, check in to ensure that everyone is satisfied with the solution and that no new issues arise.

Conflict Management

Techniques for resolving Conflict

➢ Avoiding

- **What It Is**: The conflict is ignored or postponed. No action is taken, and people move on without resolving the issue.
- **When to Use**: Use this when the conflict is minor or when you don't have enough time or energy to deal with it.
- **Example**: If a team member disagrees with a small part of a plan that doesn't affect the overall project, it might be best to avoid engaging in the conflict.

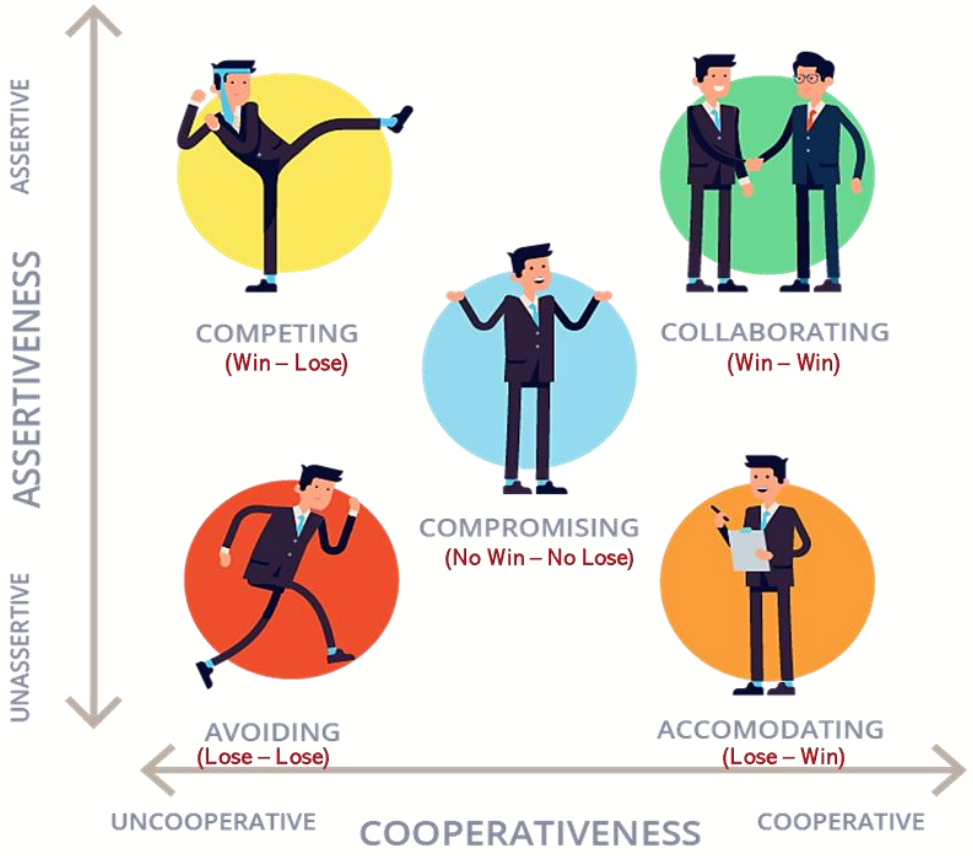


Conflict Management

Techniques for resolving Conflict

➢ Accommodating

- **What It Is:** One person gives in to the other's desires to maintain peace and harmony.
- **When to Use:** Use this when the issue is not important to you, and you want to preserve a good relationship.
- **Example:** A team member insists on a different method for solving a problem, and you agree to their method just to keep things smooth, even if you prefer a different approach.

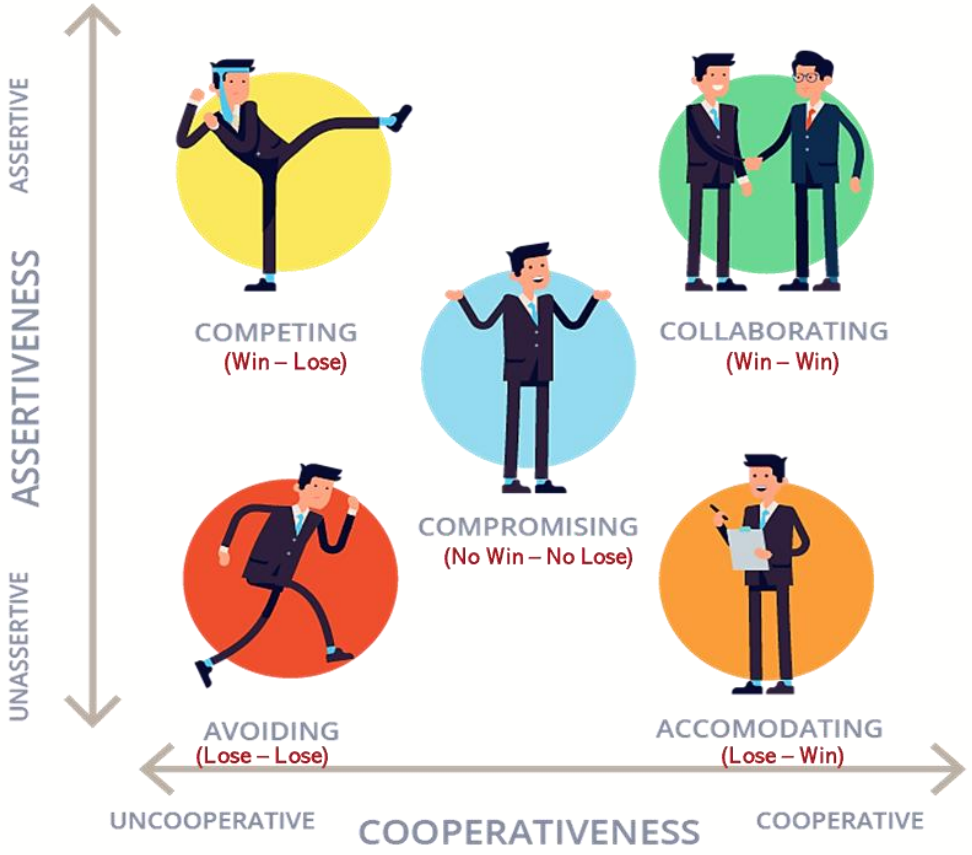


Conflict Management

Techniques for resolving Conflict

➢ Compromising

- **What It Is:** Both parties give up something in order to reach a middle ground.
- **When to Use:** Use this when both sides have valid points and need to find a solution that everyone can live with.
- **Example:** If two people argue over the project timeline, you could decide to extend the deadline a little to make both sides happy.

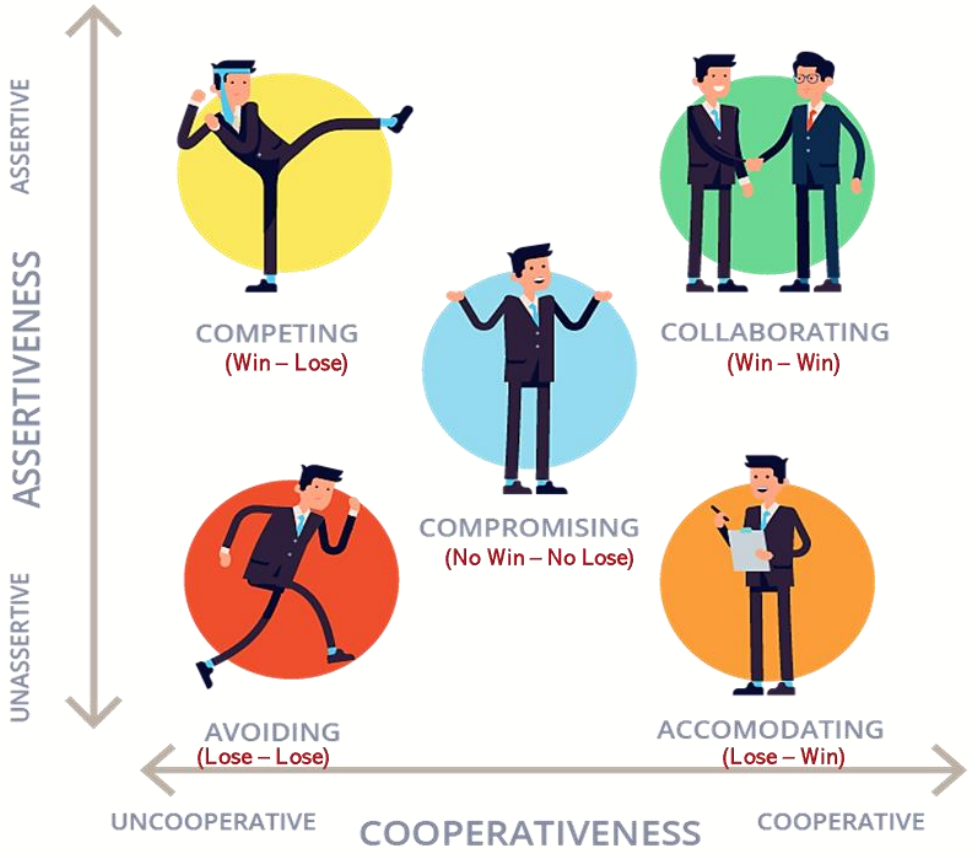


Conflict Management

Techniques for resolving Conflict

➢ Competing

- **What It Is:** One person asserts their viewpoint and pushes for their solution, often at the expense of others.
- **When to Use:** Use this when there is a need for a quick decision and there's no room for compromise.
- **Example:** During a critical project decision, you might need to make the final call quickly, even if not everyone agrees.

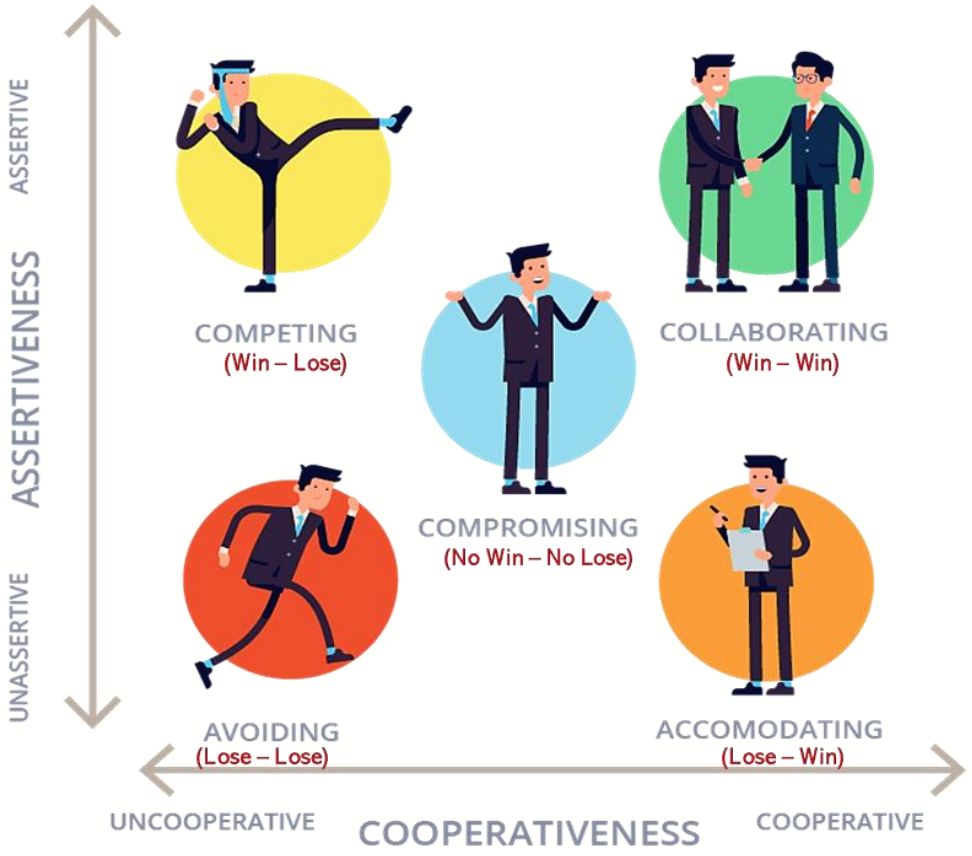


Conflict Management

Techniques for resolving Conflict

➢ Collaborating (Problem Solving)

- **What It Is:** Both parties work together to find a solution that fully satisfies everyone involved.
- **When to Use:** Use this when the conflict is important, and you want a long-term, mutually beneficial solution.
- **Example:** If two team members have different ideas about a project approach, you could set up a meeting to discuss both ideas and combine the best parts of each to create a better solution.



Control Resources

Plan Resource Management → Estimate Activity Resources → Acquire Resources → Develop Team → Manage Team → Control Resources

- Control Resources is the process of ensuring that the physical resources assigned and allocated to the project are available as planned, as well as monitoring the planned versus actual use of resources, and performing corrective action as necessary.

- The key benefit of this process is ensuring that the assigned physical resources are available to the project at the right time and in the right place and are released when no longer needed.

Inputs:

1. Project management plan
2. Project documents
3. Work performance data
4. Agreements
5. Organizational process assets

Tools & Techniques:

1. Data analysis
2. Problem solving
3. Interpersonal and team skills
4. Project management information system

Outputs

1. Work performance information
2. Change requests
3. Project management plan updates
4. Project documents updates


Q
A

1. Interoperable Systems Corp is estimating costs for a new project they recently won. Funding limits will be set based on these cost estimates, and if they're too low, it could cause serious delays and adverse management attention. What type of estimating will be most appropriate and why?

A. Analogous estimating because this will capture previous project experience.

B. Parametric estimating because nearly 20 percent of project cost is fencing, which has a predictable cost per linear foot.

C. Bottom-up estimating, because this will be most thorough.

D. Top-down estimating because the estimates need to be aligned with anticipated funding limits.

1. Interoperable Systems Corp is estimating costs for a new project they recently won. Funding limits will be set based on these cost estimates, and if they're too low, it could cause serious delays and adverse management attention. What type of estimating will be most appropriate and why?

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D. Top-down estimating because the estimates need to be aligned with anticipated funding limits.

Explanation: Bottom-up estimates are made by looking at the very most granular level of detail appropriate for the task and have potential to yield the most accurate estimates, albeit with significant effort. Where tasks lend themselves to being estimated with parametric estimating techniques, this can certainly be adopted within a bottom-up estimating effort.

2. Interoperable Systems Corp is developing a project plan for an RFP (Request for Proposal) response. Many activities have been defined that are of quite a short duration - 1 to 3 days in many cases. What earned value recognition scheme would be most appropriate for these tasks?

A. Weighted milestone

B. Fixed Formula

C. Physical Measurement

D. Percent Complete

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A. Weighted milestone

B. Fixed Formula

C. Physical Measurement

D. Percent Complete

Explanation: Fixed Formula is appropriate for very short duration activities.

3. Which of the following is an accurate description of the Cost baseline?

A. The cost baseline is compared against plan to calculate cost variances and CPI

B. The cost baseline is an output of Determine Budget, is subject to formal change control and does not include any management reserves

C. The Cost baseline is an input to Determine Budget

D. The Cost baseline is an output of Determine Budget, is subject to change control and includes contingency and management reserves

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A. The cost baseline is compared against plan to calculate cost variances and CPI

B. The cost baseline is an output of Determine Budget, is subject to formal change control and does not include any management reserves

C. The Cost baseline is an input to Determine Budget

D. None of above

Explanation: Choice B is correct

4. Which of the following is the correct list of processes in the Cost Management Knowledge Area?

A. Estimate Costs; Create Budget; Control Costs

B. Plan Cost Management, Estimate Costs, Determine Budget, Minimize Costs

C. Plan Cost Management, Estimate Costs, Secure Funding, Minimize Costs

D. Plan Cost Management, Estimate Costs, Determine Budget, Control Costs

4. Which of the following is the correct list of processes in the Cost Management Knowledge Area?

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Explanation: Choice D is correct

5. The server refresh project has incurred costs of $675,000, while the work completed was expected to cost $525,000.

What is the CPI?

A. 0.778

B. 1.29

C. 0.286

D. $150,000

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What is the CPI?

A. 0.778

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Explanation: CPI = EV / AC = 525,000 / 675,000 = 0.778

6. Silver Springs Financial Services is migrating servers as part of a data center exit project, triggered by a need to slash costs - the fallout of a recent rogue trading fiasco. The project manager's EVM report today is showing a CPI of 1.1 and an SPI of 0.9. What should we understand from this?

A. Trading controls need to be tightened

B. The project is over budget

C. The project is ahead of schedule

D. The project is under budget and behind schedule

6. Silver Springs Financial Services is migrating servers as part of a data center exit project, triggered by a need to slash costs - the fallout of a recent rogue trading fiasco. The project manager's EVM report today is showing a CPI of 1.1 and an SPI of 0.9. What should we understand from this?

A. Trading controls need to be tightened

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D. The project is under budget and behind schedule

Explanation: CPI is greater than 1 - this is good - project is under budget.

SPI is less than 1 - this is bad - project is behind schedule.

7. At which stage does a project have maximum cost?

A. Initial stage

B. Middle stage

C. Final stage

D. Cost is same at all stages

7. At which stage does a project have maximum cost?

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B. Middle stage

C. Final stage

D. Cost is same at all stages

Explanation: In the middle stages, the resources and cost usage is maximum.

8. You are the project manager for a construction company. When you are checking the project status you observed that the project is under budget and behind schedule. Which of the following tool and technique do you use to bring the project to the planned stage ?

A. Earned value management

B. Reserve analysis

C. Variance analysis

D. Crashing

8. You are the project manager for a construction company. When you are checking the project status you observed that the project is under budget and behind schedule. Which of the following tool and technique do you use to bring the project to the planned stage ?

A. Earned value management

B. Reserve analysis

C. Variance analysis

D. Crashing

Explanation: In this situation CPI is greater than 1 and SPI is less than one. We need to bring the schedule back to the planned position. Crashing is the only tool and technique which helps the situation.

9. Which of the following are tools and techniques used in Acquire Resources?

A. Advertise, offer, and hire

B. Beg, borrow and steal

C. Pre-assignment, Decision making, Collocation

D. Pre-assignment, Decision making, Virtual Teams

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C. Pre-assignment, Decision making, Collocation

D. Pre-assignment, Decision making, Virtual Teams

Explanation: Choice D is correct.

10. Which of the following is true of Team performance assessments

A. First impressions are always bad, but usually they improve with time.

B. They are an input to Develop Team

C. They are an output from Develop Team

D. They are a tool or technique within Manage Team

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A. First impressions are always bad, but usually they improve with time.

B. They are an input to Develop Team

C. They are an output from Develop Team

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Explanation: Option C is correct. Team performance assessments are output of Develop Team and input to Manage Team.

11. You are assigned to a project which is at execution stage, since the previous project manager has left the organization. You are trying to trace out who is responsible for executing the tasks. Which plan / document provide this information ?

A. Resource Management Plan

B. Resource histograms

C. Responsibility assignment matrix

D. Talk to the team and find out who is responsible for executing each task

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A. Resource Management Plan

B. Resource histograms

C. Responsibility assignment matrix

D. Talk to the team and find out who is responsible for executing each task

Explanation: Role responsibility authority forms (RACI charts) help in identifying team members responsibilities.

12. Which of the following is true of change requests?

A. They are an output of Manage Team

B. They are a tool or technique within Develop Team

C. They are an output of Plan Resource Management

D. They are an output of Estimate Activity Resources

12. Which of the following is true of change requests?

A. They are an output of Manage Team

B. They are a tool or technique within Develop Team

C. They are an output of Plan Resource Management

D. They are an output of Estimate Activity Resources

Explanation: Change requests are output from the process Manage Team.

13. When project team members are selected in advance, they are considered what?

A. Holder of the short straw

B. Pre-assigned

C. A weak player

D. "Sponsor's Pet”

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C. A weak player

D. "Sponsor's Pet”

Explanation: Choice B is correct.

14. Which of the following is the correct list and sequence of Maslow's Hierarchy of Needs?

A. Physiological, Safety, Belonging, Esteem, Self-actualization

B. Safety, Physical, Belonging, Self-actualization, Esteem

C. Psychosomatic, Safety, Belonging, Esteem, Self-actualization

D. Physiological, Safety, Belonging, Self-actualization, Esteem

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D. Physiological, Safety, Belonging, Self-actualization, Esteem

Explanation: Choice A contains the correct list of Maslow's hierarchy of needs, in the correct sequence, from most basic to the very highest level, Self-actualization.

In the Next Lesson:

Project Management: Part 4

- Project Communications Management
- Project Risk Management


thank you