

IT PROJECT MANAGEMENT

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Project Resource Management

▶ Estimate Activity Resources

- ▶ The process of estimating team resources and the type and quantities of materials, equipment and supplies necessary to perform project work.
- ▶ Identifies the type, quantity and characteristics of resources required to complete the project.
- ▶ Tools & Techniques
 - ▶ Expert judgment
 - ▶ Bottom-up estimating
 - ▶ Analogous estimating
 - ▶ Parametric estimating
 - ▶ Data analysis
 - ▶ Alternatives analysis
 - ▶ Project management information system
 - ▶ Meetings

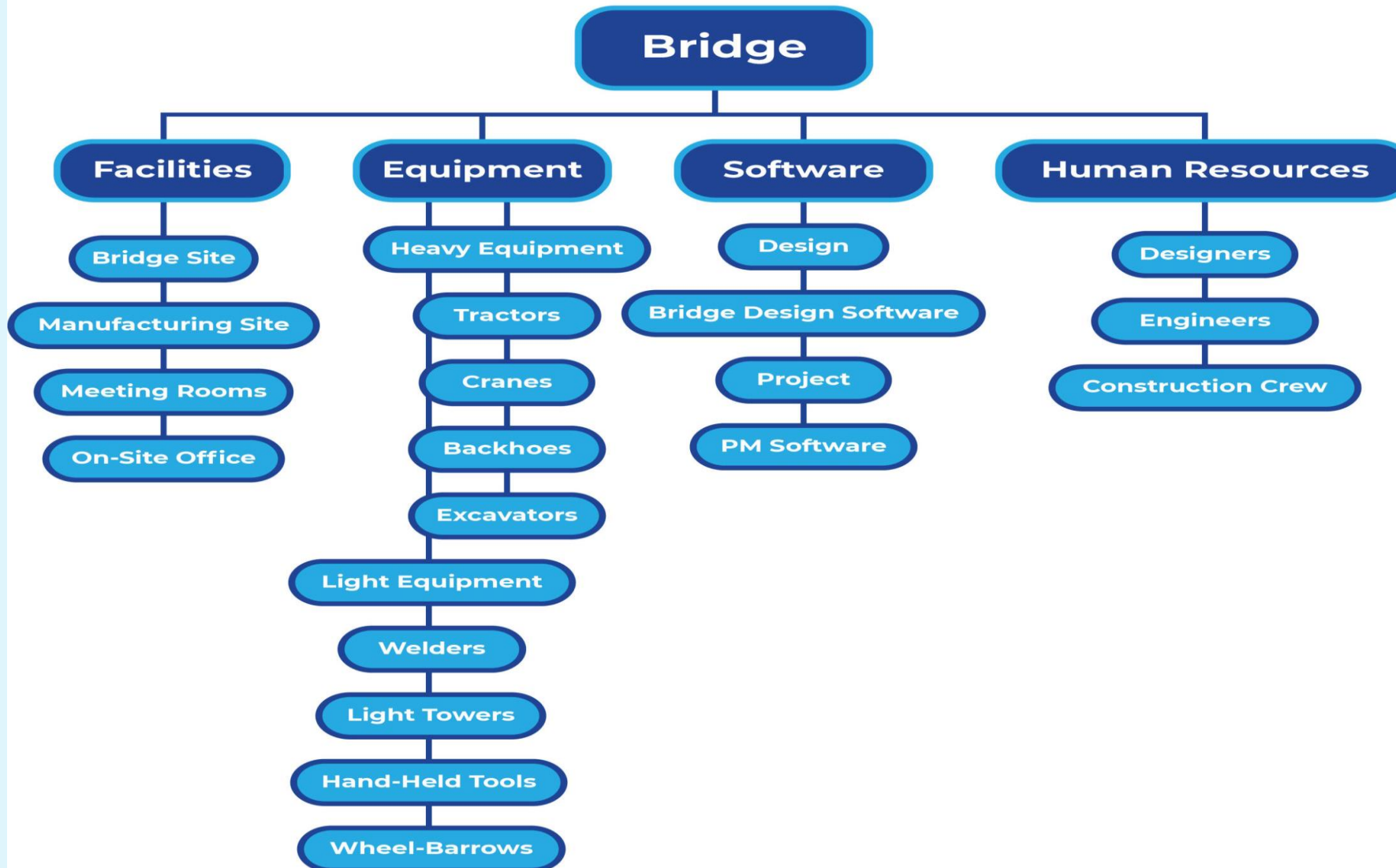
Project Resource Management

▶ Estimate Activity Resources

▶ Outputs

- ▶ Resource requirements
- ▶ Basis of estimates
- ▶ Resource breakdown structure
- ▶ Project documents updates
 - ▶ Activity attributes
 - ▶ Assumption log
 - ▶ Lessons learned register

Resource Breakdown Structure (RBS) Example



Project Resource Management

▶ Acquire Resources

- ▶ The process of obtaining team members, facilities, equipment, materials, supplies and other resources necessary to complete project work.
- ▶ It outlines and guides the selection of resources and assigns them to their respective activities.
- ▶ Tools & Techniques
 - ▶ Decision making
 - ▶ Multi-criteria decision analysis
 - ▶ Interpersonal and team skills
 - ▶ Negotiation
 - ▶ Pre-assignment
 - ▶ Virtual teams

Project Resource Management

▶ Acquire Resources

▶ Outputs

- ▶ Physical resource assignments
- ▶ Project team assignments
- ▶ Resource calendars
- ▶ Change requests
- ▶ Project management plan updates
 - ▶ Resource management plan
 - ▶ Cost baseline
- ▶ Project documents updates
 - ▶ Lessons learned register
 - ▶ Project schedule
 - ▶ Resource breakdown structure
 - ▶ Resource requirements
 - ▶ Risk register
 - ▶ Stakeholder register
- ▶ Enterprise environmental factors updates
- ▶ Organizational process assets updates

Project Resource Management

▶ Develop Team

- ▶ The process of improving competencies, team member interaction and the overall environment to enhance project performance.
- ▶ Results in improved teamwork, enhanced interpersonal skills and competencies, motivated employees, reduced attrition and improved overall project performance.
- ▶ Teamwork is a critical factor for project success.
- ▶ PM should continually create an environment that facilitates teamwork and continually motivates the team by providing
 - ▶ Challenges and opportunities
 - ▶ Timely feedback and support
 - ▶ Recognition and rewards for good performance.
- ▶ Factors contributing to high team performance:
 - ▶ Using open and effective communication
 - ▶ Creating team-building opportunities
 - ▶ Developing trust among team members
 - ▶ Managing conflicts in a constructive manner
 - ▶ Encouraging collaborative problem solving
 - ▶ Encouraging collaborative decision making.

Project Resource Management

▶ Develop Team

▶ Objectives include:

- ▶ improving knowledge and skills of team members
 - ▶ To increase their ability to complete project deliverables,
 - ▶ while lowering costs,
 - ▶ reducing schedules
 - ▶ improving quality.
- ▶ Improving feelings of trust and agreement among team members to
 - ▶ raise morale
 - ▶ Lower conflict
 - ▶ Increase teamwork
- ▶ Creating a dynamic, cohesive and collaborative team culture to:
 - ▶ Improve individual and team productivity, team spirit and cooperation
 - ▶ Allow cross-training and mentoring between team members to share knowledge and expertise
- ▶ Empowering the team to participate in decision making and take ownership of the provided solutions to improve team productivity for more effective and efficient results.

Project Resource Management

▶ Team Development Stages

▶ Forming stage

- ▶ involves a period of orientation and getting acquainted.
- ▶ Uncertainty is high during this stage
- ▶ People look for leadership and authority.
- ▶ Team members ask questions like
 - ▶ What does the team offer me?
 - ▶ What is expected of me?
 - ▶ Will I fit in?

▶ Storming stage

- ▶ the most difficult and critical stage to pass through.
- ▶ a period marked by conflict and competition as individual personalities emerge.
- ▶ Team performance may actually decrease in this stage because energy is put into unproductive activities.
- ▶ Members may disagree on team goals, and subgroups and cliques may form around strong personalities or areas of agreement.
- ▶ To get through this stage, members must work to overcome obstacles, to accept individual differences, and to work through conflicting ideas on team tasks and goals.
- ▶ Failure to address conflicts may result in long-term problems.

Project Resource Management

▶ Team Development Stages

▶ Norming Stage

- ▶ conflict is resolved and some degree of unity emerges.
- ▶ consensus develops around who the leader or leaders are, and individual member's roles.
- ▶ Interpersonal differences begin to be resolved, and a sense of cohesion and unity emerges.
- ▶ Team performance increases during this stage as members learn to cooperate and begin to focus on team goals.
- ▶ However, the harmony is precarious, and if disagreements re-emerge the team can slide back into storming.

▶ Performing stage

- ▶ consensus and cooperation have been well-established and the team is mature, organized, and well-functioning.
- ▶ There is a clear and stable structure, and members are committed to the team's mission.
- ▶ Problems and conflicts still emerge, but they are dealt with constructively.
- ▶ The team is focused on problem solving and meeting team goals.

Project Resource Management

▶ Develop Team

▶ Team Development Stages

▶ Adjourning stage

- ▶ most of the team's goals have been accomplished
- ▶ The emphasis is on wrapping up final tasks and documenting the effort and results.
- ▶ As the work load is diminished, individual members may be reassigned to other teams, and the team disbands.
- ▶ There may be regret as the team ends, so a ceremonial acknowledgement of the work and success of the team can be helpful.
- ▶ If the team is a standing committee with ongoing responsibility, members may be replaced by new people and the team can go back to a forming or storming stage and repeat the development process.

Project Resource Management

▶ Develop Team

▶ Tools & Techniques

- ▶ Colocation
- ▶ Virtual teams
- ▶ Communication technology
- ▶ Interpersonal and team skills
 - ▶ Conflict management
 - ▶ Influencing
 - ▶ Motivation
 - ▶ Negotiation
 - ▶ Team building
- ▶ Recognition and rewards
- ▶ Training
- ▶ Individual and team assessments
- ▶ Meetings

Project Resource Management

▶ Develop Team

▶ Outputs

- ▶ Change requests
- ▶ Project management plan updates
 - ▶ Resource management plan
- ▶ Project documents updates
 - ▶ Lessons learned register
 - ▶ Project schedule
 - ▶ Project team assignments
 - ▶ Resource calendars
 - ▶ Team charter
- ▶ Enterprise environmental factors updates
- ▶ Organizational process assets updates
- ▶ Team performance assessments
 - ▶ Formal or informal assessments of team's effectiveness include:
 - ▶ Improvements in skills that allow individuals to perform assignments more effectively

Project Resource Management

▶ Develop Team

▶ Outputs

▶ Team performance assessments

- ▶ Formal or informal assessments of team's effectiveness include:
 - ▶ Improvements in competencies that help team members to perform assignments more effectively
 - ▶ Reduced staff turnover rate
 - ▶ Increased team cohesiveness where team members share information and experiences openly and help each other to improve the overall project performance.
- ▶ An evaluation of the team's performance will result identifying specific training, coaching, mentoring, assistance or changes required to improve the team's performance.

Project Resource Management

▶ Manage Team

- ▶ Process of tracking team performance, providing feedback, resolving issues and managing team changes to optimize project performance.
- ▶ It influences team behaviour, manages conflict and resolves issues.

▶ Tools & Techniques

- ▶ Interpersonal and team skills
 - ▶ Conflict management
 - ▶ Decision making
 - ▶ Emotional intelligence
 - ▶ Influencing
 - ▶ Leadership
- ▶ Project management information system

▶ Outputs

- ▶ Change requests
- ▶ Project management plan updates
 - ▶ Resource management plan
 - ▶ Schedule baseline
 - ▶ Cost baseline
- ▶ Project documents updates
 - ▶ Issue log
 - ▶ Lessons learned register
 - ▶ Project team assignments
- ▶ Enterprise environmental factors updates

Project Resource Management

► Conflict Management

► Sources

- Scarce Resources
- Scheduling priorities
- Personal work styles

► To reduce conflicts

- Team ground rules
- Group norms
- Solid project management practices

► Factors influencing conflict resolution methods include:

- Importance and intensity of the conflict
- Time pressure for resolving the conflict
- Relative power of the people involved in the conflict
- Importance of maintaining a good relationship
- Motivation to resolve conflict on a long-term or short-term basis.

Project Resource Management

► Conflicts Management

► Techniques for managing Conflicts

► Withdraw / avoid

- you are insufficiently prepared, or
- tempers are too hot for real listening to take place

► Smooth / accommodate

- Emphasizing areas of agreement rather than areas of difference.
- winning is not always as important as maintaining the relationship

► Compromise / Reconcile

- Searching for solutions that bring some degree of satisfaction to all parties in order to temporarily or partially resolve the conflict.

► Force /Direct

- Pushing one's viewpoint at the expense of others.

► Collaborate/problem solve

- Incorporating multiple viewpoints and insights from differing perspectives
- Requires a cooperative attitude and open dialogue that typically leads to consensus and commitment.

► Skills for managing conflicts

► Observation

► Listening

► Silence

► Pausing

► Evaluation

► Problem solving

► Influencing

► Collaboration

Project Resource Management

▶ Control Resources

- ▶ 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 the actual utilization of resources and taking corrective action as necessary.
- ▶ Ensures that the assigned resources are available to the project at the right time and in the right place and are released when no longer needed.
- ▶ Concerned with physical resources:
 - ▶ Monitoring resource expenditures
 - ▶ Identifying and dealing with the resource shortage/surplus in a timely manner
 - ▶ Ensuring that resources are used and released according to the plan and project needs
 - ▶ Informing appropriate stakeholders if any issues arise with relevant resources
 - ▶ Influencing the factors that can create resources utilization change
 - ▶ Managing the actual changes as they occur.

Project Resource Management

▶ Control Resources

▶ Tools & Techniques

▶ Data analysis

- ▶ Alternatives analysis
- ▶ Cost-benefit analysis
- ▶ Performance reviews
- ▶ Trend analysis

▶ Problem solving

▶ Interpersonal and team skills

- ▶ Negotiation
- ▶ Influencing

▶ Project management information system

▶ Problem solving

- ▶ Identify the problem
- ▶ Define the problem
- ▶ Investigate
- ▶ Analyse
- ▶ Solve
- ▶ Check the solution

Project Resource Management

▶ Control Resources

▶ Outputs

- ▶ Work performance information
- ▶ Change requests
- ▶ Project management plan updates
 - ▶ Resource management plan
 - ▶ Schedule baseline
 - ▶ Cost baseline
- ▶ Project documents updates
 - ▶ Assumption log
 - ▶ Issue log
 - ▶ Lessons learned register
 - ▶ Physical resource assignments
 - ▶ Resource breakdown structure
 - ▶ Risk register

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Manage Quality	8.3 Control Quality	
9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses	11.6 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Engagement	13.3 Manage Stakeholder Engagement	13.4 Monitor Stakeholder Engagement	

Project Communications Management

- ▶ Includes the processes necessary to ensure that the information needs of the project and its stakeholders are met through development of artifacts and implementation of activities designed to achieve effective information exchange.
- ▶ Processes
 - ▶ Plan Communications Management
 - ▶ Manage Communications
 - ▶ Monitor Communications
- ▶ Key Concepts
 - ▶ Communication is the exchange of information in the form of:
 - ▶ Ideas
 - ▶ Instructions
 - ▶ Emotions
 - ▶ Mechanisms for information exchange
 - ▶ Written form
 - ▶ Spoken
 - ▶ Formal or informal
 - ▶ Through gestures
 - ▶ Through media - pictures, actions
 - ▶ Choice of words

Project Communications Management

- ▶ Possible means include:
 - ▶ Meetings and presentations
 - ▶ Artifacts
 - ▶ Emails
 - ▶ Social media
 - ▶ Project reports
 - ▶ Project documentation
- ▶ Communication Dimensions
 - ▶ Internal
 - ▶ External
 - ▶ Formal
 - ▶ Informal
 - ▶ Hierarchical focus
 - ▶ Upward
 - ▶ Downward
 - ▶ Horizontal
 - ▶ Official
 - ▶ Unofficial
 - ▶ Written and oral

Project Communications Management

- ▶ Project communications are the products of the planning process defining:
 - ▶ Collection
 - ▶ Creation
 - ▶ Dissemination
 - ▶ Storage
 - ▶ Retrieval
 - ▶ Management
 - ▶ Tracking
 - ▶ Disposition
- ▶ 5Cs of traditional Messages
 - ▶ Correct grammar and spelling
 - ▶ Concise expression and elimination of excess words
 - ▶ Clear purpose and expression directed to the needs of the reader
 - ▶ Coherent logical flow of ideas
 - ▶ Controlling flow of words and ideas.

Project Communications Management

- ▶ Communication skills supporting the 5Cs
 - ▶ Listening actively
 - ▶ Awareness of cultural and personal differences
 - ▶ Identifying, setting and manage stakeholder expectations
 - ▶ Enhancement of skills in the following activities:
 - ▶ Persuading a person, team or an organization to perform an action
 - ▶ Motivating people and providing encouragement or reassurance
 - ▶ Coaching to improve performance and achieve desired results
 - ▶ Negotiating to achieve mutually acceptable agreements between parties and reduce approval or decision delays
 - ▶ Resolving conflict to prevent disruptive impacts.
- ▶ Trends and Emerging Practices
 - ▶ Inclusion of stakeholders in project reviews
 - ▶ Inclusion of stakeholders in project meetings
 - ▶ Short, daily stand-up meetings discussing the achievements and issues of the previous day, plans for the current day's work.
 - ▶ Increased use of social computing
 - ▶ Multifaceted approaches to communication.

Project Communications Management

- ▶ Tailoring Considerations
 - ▶ Stakeholders
 - ▶ Physical location
 - ▶ Communications technology
 - ▶ Language
 - ▶ Knowledge Management

Project Communications Management

► Plan Communications Management

- The process of developing an appropriate approach and plan for project communications activities based on the information needs of each stakeholder or group, available organizational assets and the needs of the project.
- Key benefit is a documented approach to effectively and efficiently engage stakeholders by presenting relevant information in a timely manner.
- Tools & Techniques
 - Expert judgment
 - Communication requirements analysis
 - Communication technology
 - Communication models
 - Communication methods
 - Interpersonal and team skills
 - Communication styles assessment
 - Political awareness
 - Cultural awareness
 - Data representation
 - Stakeholder engagement assessment matrix
 - Meetings

Project Communications Management

▶ Plan Communications Management

▶ Outputs

- ▶ Communications management plan
- ▶ Project management plan updates
 - ▶ Stakeholder engagement plan
- ▶ Project documents updates
 - ▶ Project schedule
 - ▶ Stakeholder register

Project Communications Management

▶ Manage Communications

- ▶ The process of ensuring timely and appropriate collection, creation, distribution, storage, retrieval, management, monitoring and the ultimate disposition of project information.
- ▶ It enables an efficient and effective information flow between the project team and the stakeholders.
- ▶ Techniques and considerations for effective communications management include:
 - ▶ Sender-receiver models
 - ▶ Choice of media
 - ▶ Writing style
 - ▶ Meeting management
 - ▶ Presentations
 - ▶ Facilitation
 - ▶ Active listening

Project Communications Management

▶ Manage Communications

▶ Tools & Techniques

- ▶ Communication technology
- ▶ Communication methods
- ▶ Communication skills
 - ▶ Communication competence
 - ▶ Feedback
 - ▶ Nonverbal
 - ▶ Presentations
- ▶ Project management information systems
- ▶ Project reporting
- ▶ Interpersonal and team skills
 - ▶ Active listening
 - ▶ Conflict management
 - ▶ Cultural awareness
 - ▶ Meeting management
 - ▶ Networking
 - ▶ Political awareness
- ▶ Meetings

Project Communications Management

▶ Manage Communications

▶ Outputs

- ▶ Project communications
- ▶ Project management plan updates
 - ▶ Communications management plan
 - ▶ Stakeholder engagement plan
- ▶ Project documents updates
 - ▶ Issue log
 - ▶ Lessons learned register
 - ▶ Project schedule
 - ▶ Risk register
 - ▶ Stakeholder register
- ▶ Organizational process assets updates

Project Communications Management

▶ Monitor Communications

- ▶ The process of ensuring the information needs of the project and its stakeholders are met.
- ▶ Key benefit is the optimal information flow as defined in the communications management plan and the stakeholder engagement plan.
- ▶ Determines if planned communications are giving the desired effect of increasing or maintaining stakeholders' support for the project's deliverables and expected outcomes.

▶ Tools & Techniques

- ▶ Expert judgment
- ▶ Project management information system
- ▶ Data analysis
 - ▶ Stakeholder engagement assessment matrix
- ▶ Interpersonal and team skills
 - ▶ Observation/conversation
- ▶ Meetings

Project Communications Management

▶ Monitor Communications

▶ Outputs

- ▶ Work performance information
- ▶ Change requests
- ▶ Project management plan updates
 - ▶ Communications management plan
 - ▶ Stakeholder engagement plan
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 - ▶ Lessons learned register
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