

Project Management Professional



PMP PREPARATION COURSE

6TH EDITION

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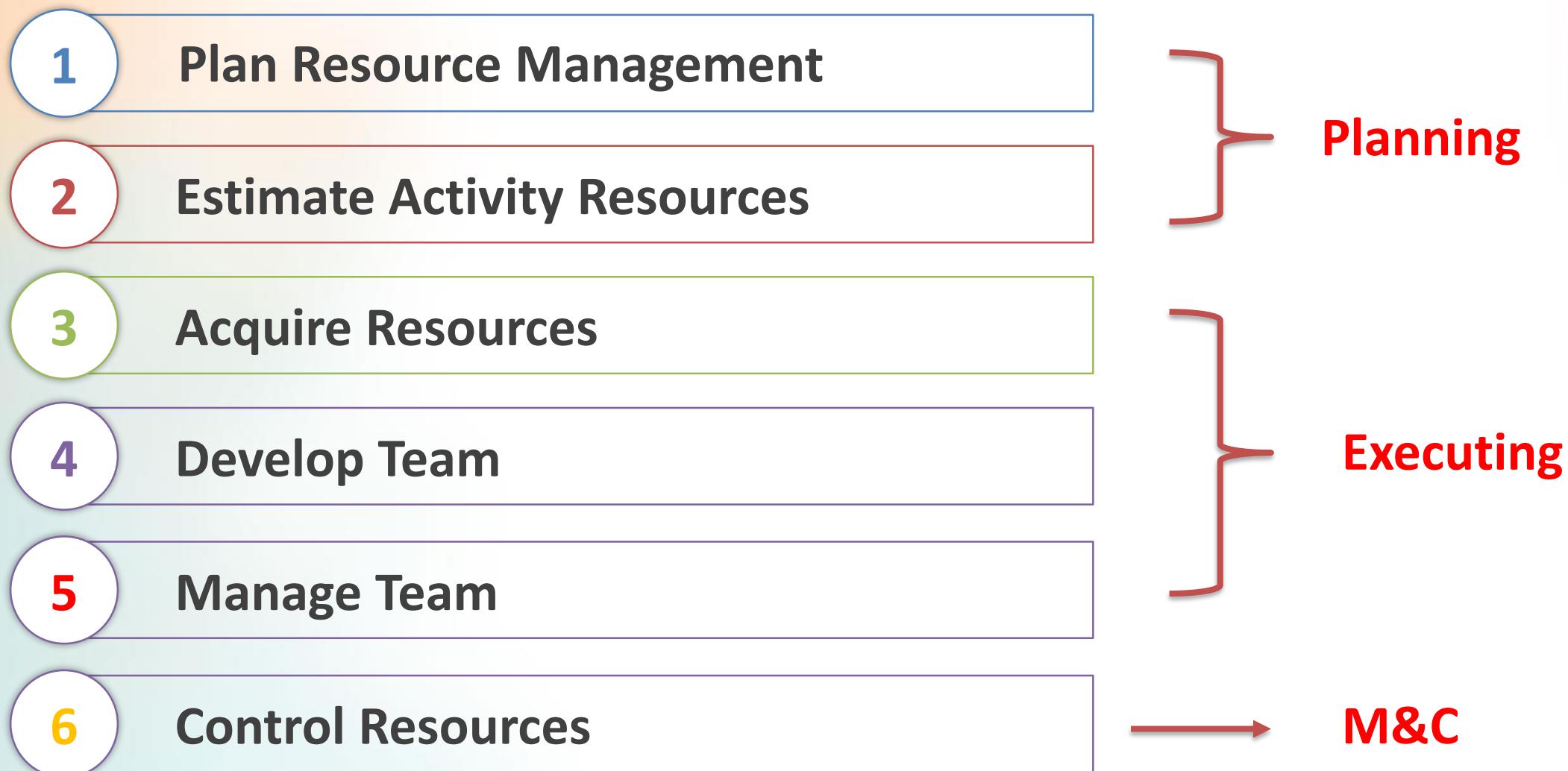
Chapter 9

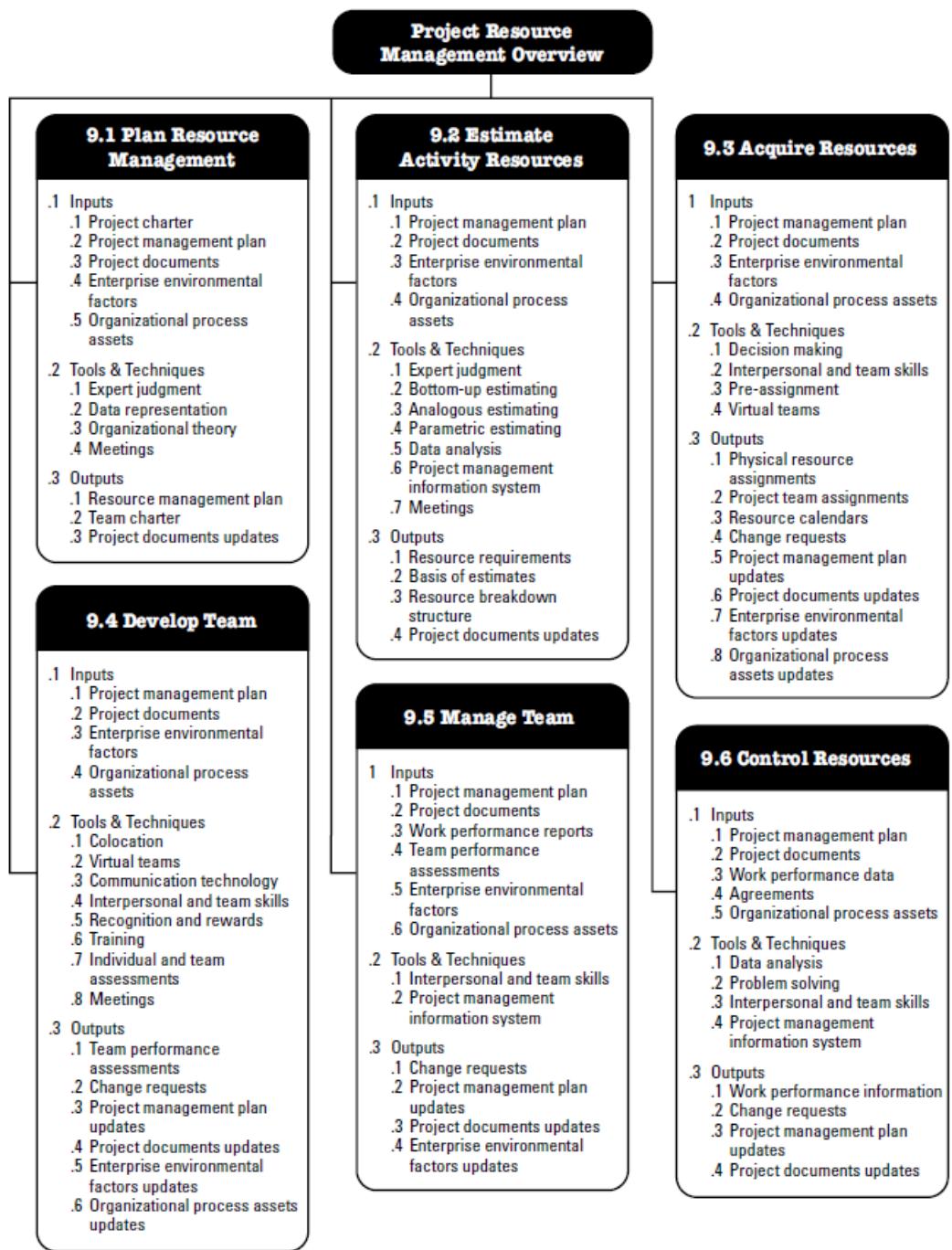
Project Resource Management

PMBOK-6th Page **307** to **358**

Lecture 06 : Project Resource Management

Contents





Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)



Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

► Plan Resource Management is the process of :

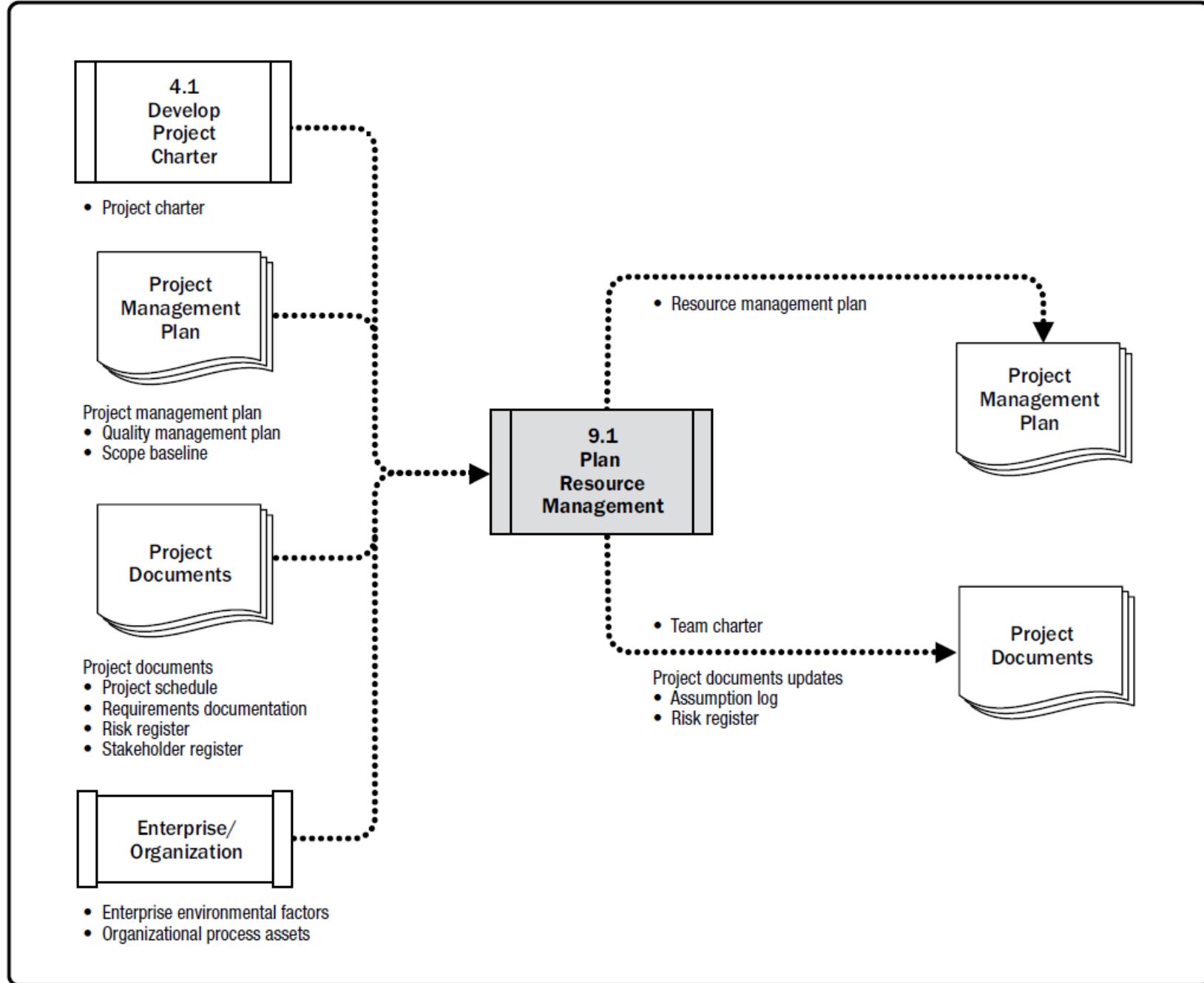
- Defining **how** to estimate, acquire, manage, and use team and physical resources.

هي عملية تحديد كيفية تدبير موارد فريق والموارد المادية والحصول عليها وإدارتها واستخدامها.

❖ The key benefit of this process:

- ✓ Establishes the approach and level of management effort needed for managing project resources based on the type and complexity of the project.

✓ تؤسس أسلوب ومستوى جهد الإدارة اللازم لإدارة موارد المشروع بناءً على نوع المشروع وتعقيده.



Project Resource Management

(1) Plan Resource Management



Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

Inputs PROJECT CHARTER

- The project charter provides the **high-level project description** and **requirements**. It also has the **key stakeholder list**, **summary milestones**, and **preapproved financial resources** that may **influence** the resource management of the project.

Inputs PROJECT MANAGEMENT PLAN

Quality management plan.

- The quality management plan helps define the **level of resources** that will be required to achieve and maintain **the defined level of quality** and achieve the **metrics** for the project.

Scope baseline

- The scope baseline identifies the **deliverables** that drive the **types and quantities of resources** that will need to be managed.

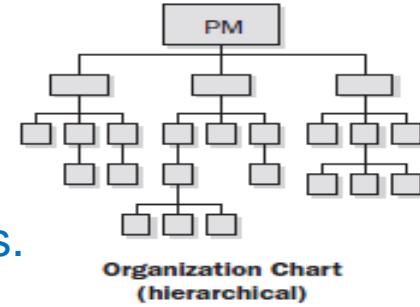
Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

TT DATA REPRESENTATION

charts المخططات.

- Various formats exist to document and communicate team member roles and responsibilities.
- **Hierarchical** Ex: OBS, RBS, WBS مخططات على شكل التسلسل الهرمي



Organizational breakdown structure (OBS). هيكل التجزئة التنظيمي

- is arranged according to an organization's existing **departments**, units, or teams, with the project activities or work packages listed under each department.

هيكل التجزئة التنظيمي مرتب طبقاً للأقسام أو الوحدات أو الفرق الموجودة بالمؤسسة مع إدراج أنشطة المشروع أو حزم العمل ضمن كل قسم.

- operational department, such as information technology or purchasing, can see all of its project responsibilities by looking at its portion of the OBS.

Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

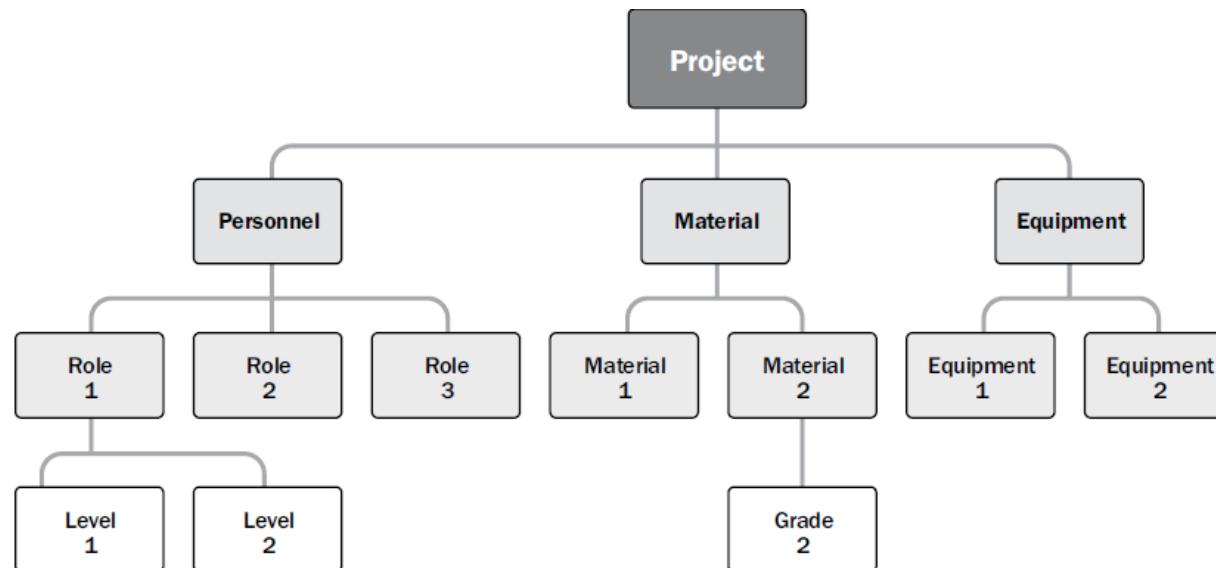
TT

DATA REPRESENTATION

Resource breakdown structure (RBS). هيكل تجزئة الموارد

- Hierarchical structure of identified resources.
- Can be classified by **category** (Labor, material, equipment, supplier)

يمكن ان يتم تصنيفها طبقاً للنوع (عمالة, مواد, معدات, موردين)



Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

TT

DATA REPRESENTATION

- **Assignment Matrix (RAM)** مصفوفة تعين المسؤوليات

This type illustrates connection between work packages, or activities and team members Ex: RACI (R= Responsible, A= Accountable, C= Consult, I= Inform) وستُستخدم في توضيح العلاقات بين حزم العمل أو الأنشطة وأعضاء فريق المشروع

Activity	Person				
	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

- **Text-Oriented Formats** أشكال قائمة على النص

Team member responsibilities that require detailed descriptions can be specified in text oriented formats.

Ex: responsibilities, authority, competencies, and qualifications.

المؤهلات والكفاءات والسلطة والمسؤوليات

Role _____
Responsibilities _____
Authority _____
Role Description (text)

RESPONSIBILITY ASSIGNMENT MATRIX

Project Title: _____ Date Prepared: _____

	Person 1	Person 2	Person 3	Person 4	Etc.
Work package 1	R	C	A		
Work package 2		A		I	R
Work package 3		R	R	A	
Work package 4	A	R	I	C	
Work package 5	C	R	R		A
Work package 6	R		A	I	
Etc.	C	A		R	R

R = Responsible: The person performing the work.

C = Consult: The person who has information necessary to complete the work.

A = Accountable: The person who is answerable to the project manager that the work is done on time, meets requirements, and is acceptable.

I = Inform: This person should be notified when the work is complete.

Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

TT

Organizational Theory

النظرية التنظيمية

- Provides information regarding the way in which people, teams, and organizational units **behave**.
توفر النظرية التنظيمية معلومات بشأن الطريقة التي يتصرف بها الأفراد وفرق العمل والوحدات التنظيمية.

❖ Effective use of common techniques identified in organizational theory can:

- ✓ Shorten the amount of time, cost, and effort needed to create the Plan Resource Management process outputs.
تحسين فعالية التخطيط
- ✓ improve planning efficiency
هيكـل المؤسـسة وثقـافتها تؤثـر في الهـيكـل التنـظـيمي للمـشـروع
- The organization's structure and culture impacts the project organizational structure.

Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

Outputs

Resource Management Plan:

- Component of the project management plan. عنصر من عناصر خطة إدارة المشروع
- How project resources should be categorized, allocated, managed, and released. كيف ينبغي تصنيف موارد المشروع وتخصيصها وإدارتها وتسويتها.

❖ The resource management plan may include but is not limited to:

- **Identification of resources:** تحديد الموارد
 - Methods for identifying and quantifying team and physical resources needed. طرق تحديد وتعيين الفريق والموارد المادية اللازمة.
- **Acquiring resources**
 - Guidance on how to acquire team and physical resources for the project. إرشاد لكيفية الحصول على الفريق والموارد المادية للمشروع.

Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

- **Roles and responsibilities:** الأدوار والمسؤوليات.

Role: civil engineer, business analyst, and testing coordinator.

Authority: The rights to apply project resources, make decisions, sign approvals, accept deliverables

Responsibility: The assigned duties and work that a project team member is expected to perform in order to complete the project's activities.

Competence: The skill and capacity required to complete assigned activities within the project constraints.

- **Project team resource management** إدارة موارد فريق المشروع.

Guidance on **how** project team resources should be defined, **staffed**, managed, and eventually **released**.

Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

Outputs

Resource Management Plan:

- **Training:** Training strategies for team members. استراتيجيات التدريب لأعضاء الفريق
- **Team development:** Methods for developing the project team. طرق تطوير فريق المشروع
- **Resource control** هي الطرق اللازمة لضمان أن تكون الموارد المادية الكافية ممتاحة عند الحاجة طبقاً لاحتياجات المشروع. وهو يشمل معلومات عن إدارة المخزون والمعدات والمستلزمات على مدار دورة حياة المشروع.
- **Recognition plan** خطة التقدير
 - Which recognition and rewards will be given to team members, and when they will be given. تشمل أي تقدير وجوائز تقدم لأعضاء الفريق وموعد تقديمها لهم.

RESOURCE MANAGEMENT PLAN

Project Title: _____ Date Prepared: _____

Team Member Identification and Estimates

Role	Number	Skill Level
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.

Staff Acquisition

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Staff Release:

Roles, Responsibilities, and Authority

Role	Responsibility	Authority
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.

Project Organizational Structure

--

RESOURCE MANAGEMENT PLAN

Training Requirements

--

Rewards and Recognition

--

Team Development

--

Physical Resource Identification and Estimates

Resource	Amount	Grade
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.

Resource Acquisition

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Resource Management

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Lecture 06 : Project Resource Management

02. Estimate Activity Resource (Planning)

Team Charter

Team values and principles List values and principles that the team agrees to operate within. Examples include mutual respect.

Meeting guidelines Identify guidelines that will keep meetings productive. Examples include decision makers must be present, start on time, stick to the agenda, etc.

Communication guidelines : List guidelines used for effective communication. Examples include everyone voices their opinion, no dominating the conversation, no interrupting, not using inflammatory language, etc.

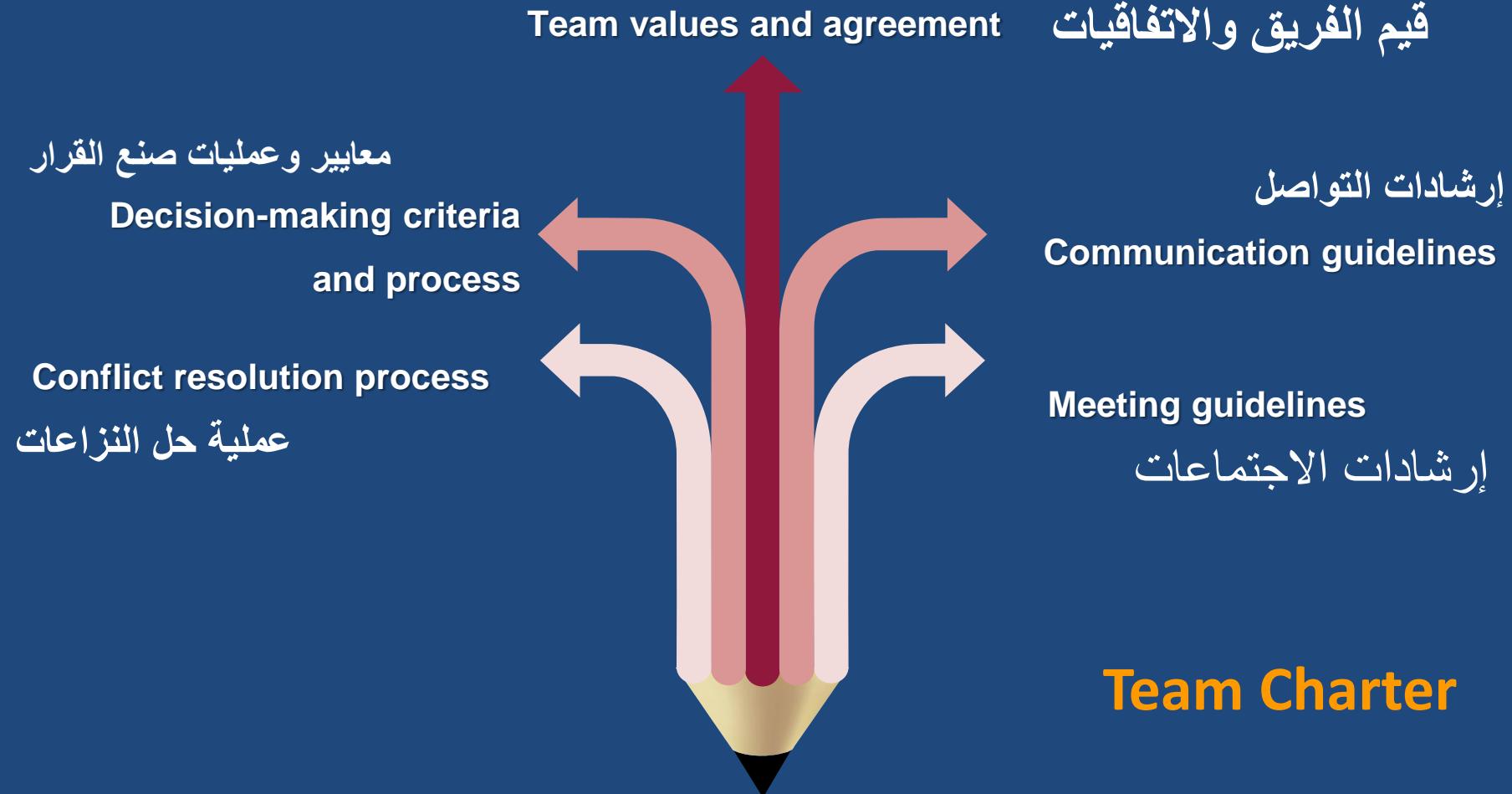
Decision-making process: Describe the process used to make decisions. Indicate the relative power of the project manager for decision making as well as any voting procedures. Also indicate the circumstances under which a decision can be revisited.

Conflict resolution process: Describe the process for managing conflict, when a conflict will be escalated, when it should be tabled for later discussion, etc.

Lecture 06 : Project Resource Management

01. Plan Resource Management (Planning)

Plan Resource Management: Outputs



Lecture 06 : Project Resource Management

02. Estimate Activity Resource (Planning)



Lecture 06 : Project Resource Management

02. Estimate Activity Resource (Planning)

➤ Estimate Activity Resource is the process of :

- Estimating team resources and the type and quantities of materials, equipment, and supplies necessary to perform project work.

تقدير موارد فريق العمل ونوع وكميات المواد، والمعدات، والمستلزمات الضرورية لأداء العمل بالمشروع

❖ The key benefit of this process:

- ✓ it identifies the type, quantity, and characteristics of resources required to complete the project.

✓ تحدد نوع وكمية وخصائص الموارد اللازمة لإكمال المشروع.



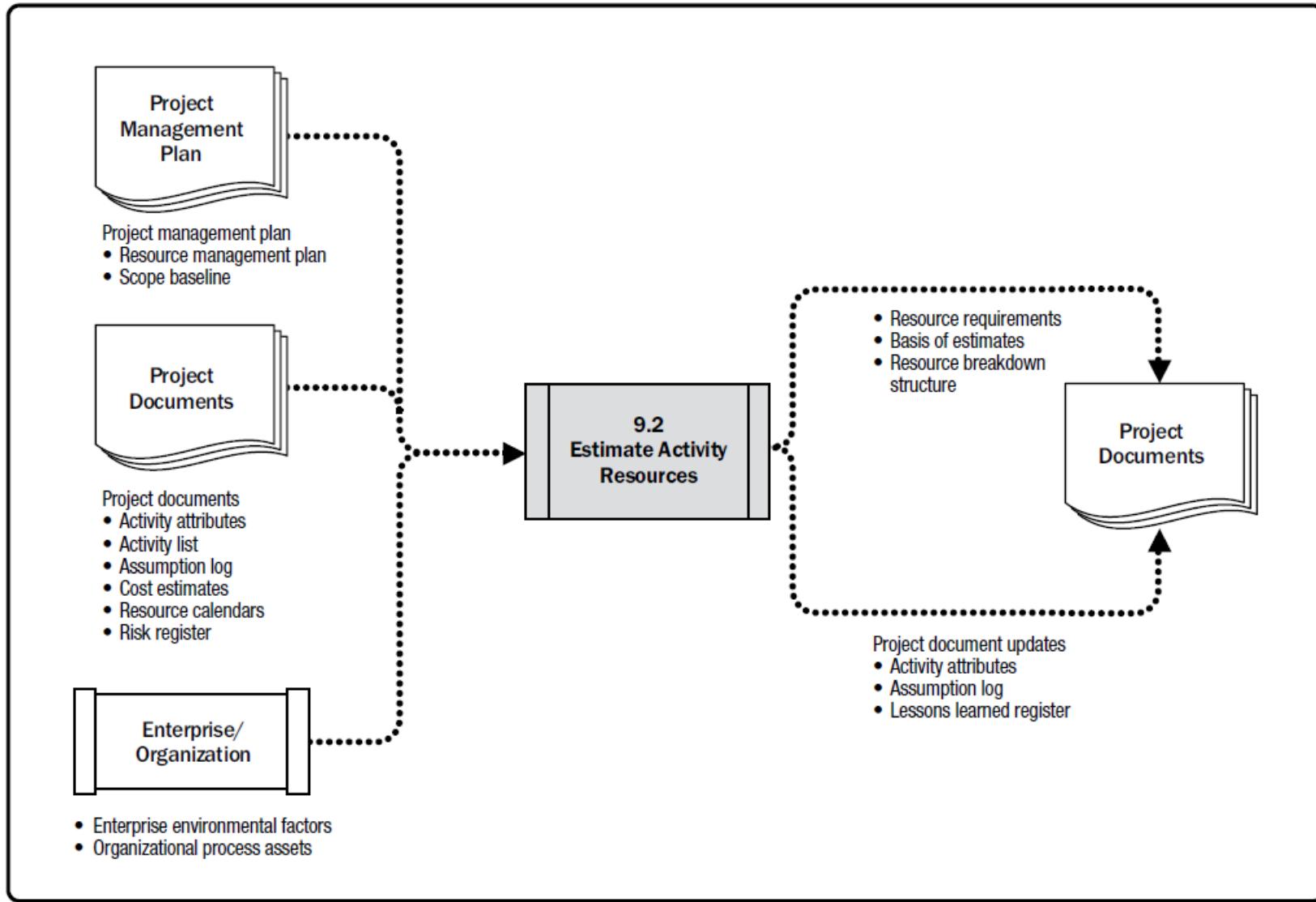
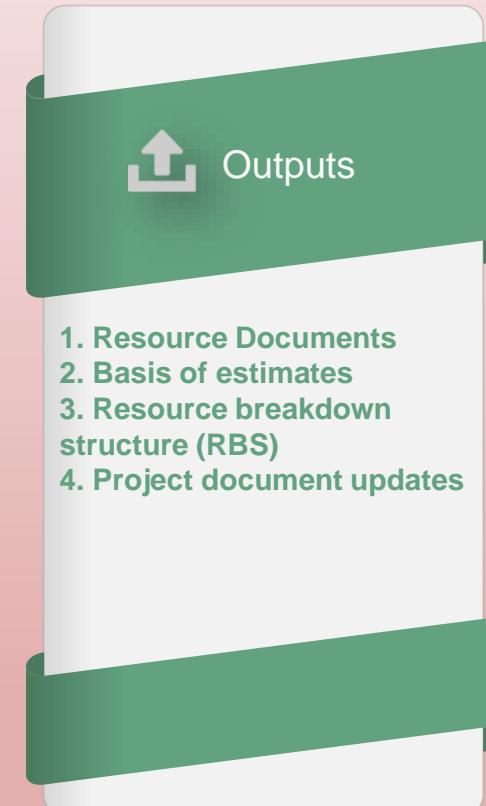
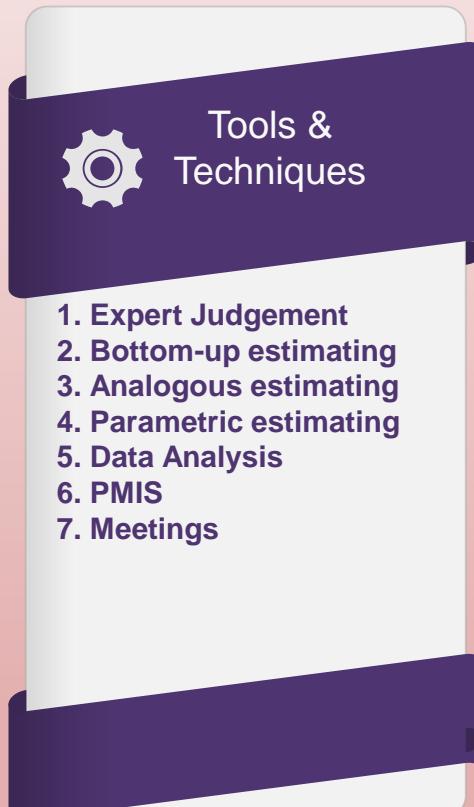


Figure 9-6. Estimate Activity Resources: Data Flow Diagram

Project Resource Management

(2) Estimate Activity Resources



Lecture 06 : Project Resource Management

02. Estimate Activity Resource (Planning)

Outputs

- **Resource requirements :** متطلبات موارد النشاط

- Identify the types and quantities of resources required for each work package or activity.

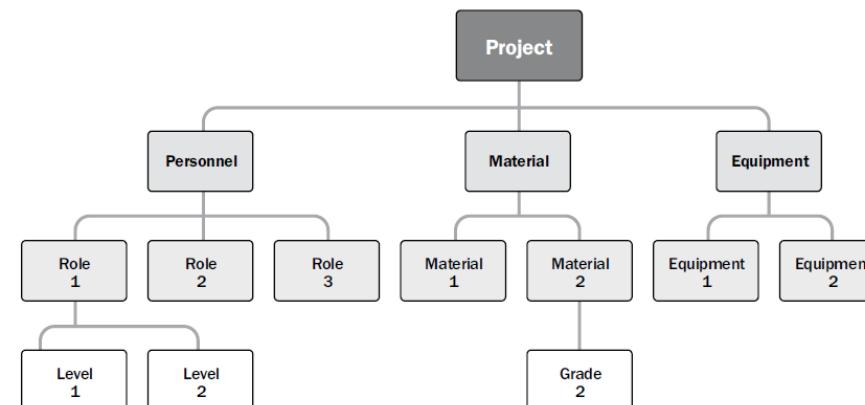
نوع و كمية الموارد المطلوبة لكل نشاط

- **Resource Breakdown Structure**

- Hierarchical structure of identified resources. هيكل هرمي للموارد التي تم تحديدها

- Can be classified by category (Labor, material, equipment, supplier)

يمكن ان يتم تصنيفها طبقاً لنوع (عمالة، مواد، معدات، موردين)



Lecture 06 : Project Resource Management

02. Estimate Activity Resource (Planning)

Outputs

Basis Of Estimates

أساس التقديرات

- Method used to develop the estimate. الطرق المستخدمة في وضع التقدير
 - Resources used to develop the estimate (information from previous similar projects)
 - Assumptions associated with the estimate. الافتراضات المرتبطة بالتقدير
 - Known constraints القيود المعروفة
 - Confidence level of the estimate مستوى الثقة في التقدير
 - Documentation of identified risks influencing the estimate. وثائق المخاطر المحددة المؤثرة على هذا التقدير.

Lecture 06 : Project Resource Management

03. Acquire Resources



Lecture 06 : Project Resource Management

03. Acquire Resources

➤ Acquire Resources is the process of :

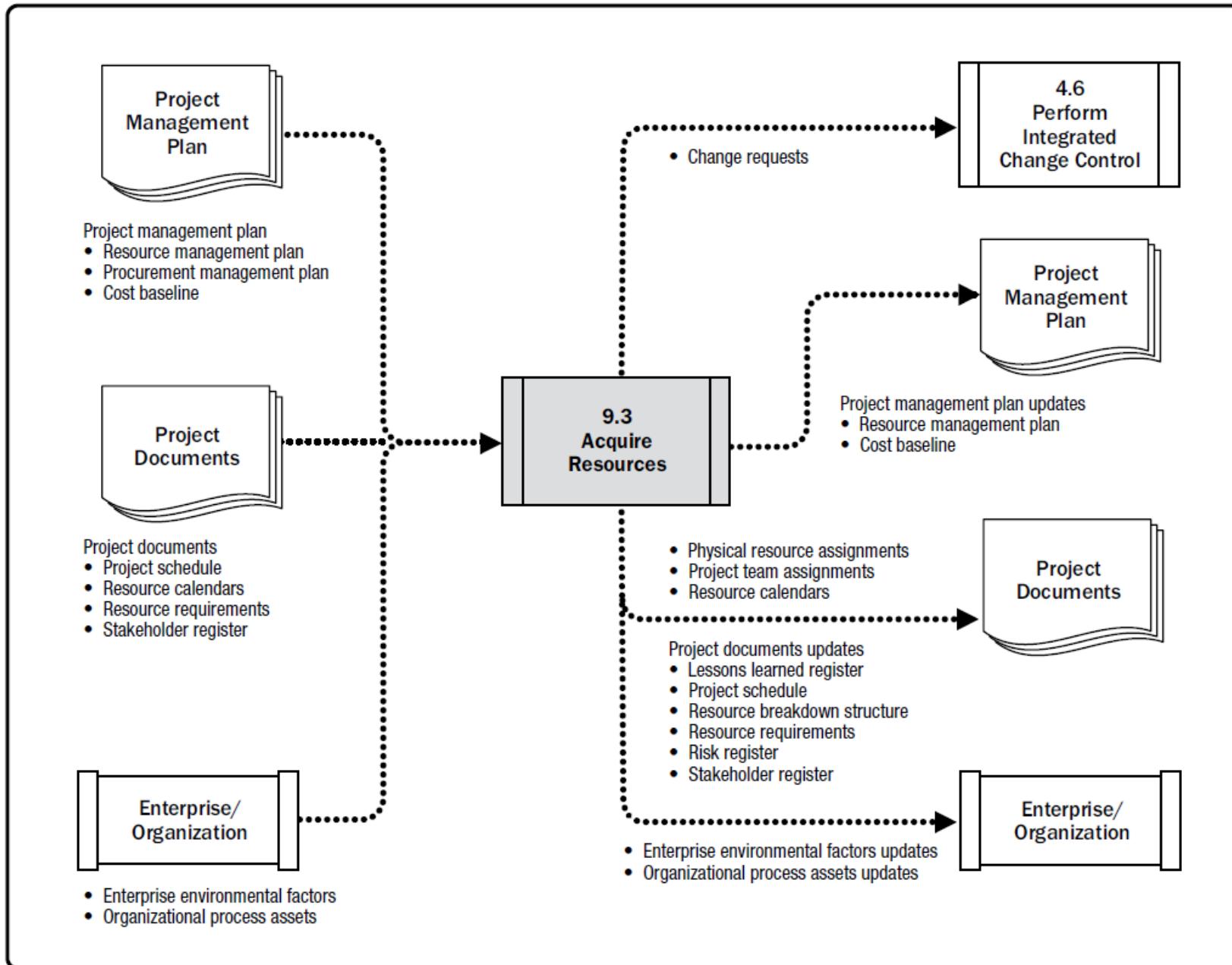
- Obtaining team members, facilities, equipment, materials, supplies, and other resources necessary to complete project work.

هي عملية الحصول على أعضاء الفريق، والمرافق، والمعدات، والمستلزمات، والمواد، والموارد الأخرى الضرورية لاستكمال العمل بالمشروع.

❖ The key benefit of this process:

- ✓ Outlines and guides the selection of resources and assigns them to their respective activities.

✓ توضح وترشد الى اختيار الموارد وتخصصها إلى أنشطتها ذات الصلة.



Project Resource Management

(3) Acquire Resources



Input

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-assignments
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

Lecture 06 : Project Resource Management

03. Acquire Resources

TT DECISION MAKING

(multicriteria decision analysis) تحليل القرارات متعددة المعايير

➤ (Selection criteria are often used to select physical project resources, or the project team.)

- **Availability.** Verify the resource is available to work on the project within the time period needed.

- **Cost.** Verify if the cost of adding the resource is within the prescribed budget.

- **Ability.** Verify that the team member provides the capability needed by the project.

- **Experience.** Verify that the team member has the experience that will contribute to the project success.

- **Skills.** Determine if the team member has the relevant skills to use a project tool.

- **Attitude.** Determine if the team member has the ability to work with others as a cohesive team.

Lecture 06 : Project Resource Management

03. Acquire Resources

TT INTERPERSONAL AND TEAM SKILLS

- The project management team may need to **negotiate** with:

- ✓ **Functional managers.**

Ensure that the project receives the best resources possible in the required timeframe and until their responsibilities are complete.



- ✓ **External organizations and suppliers**

Provide appropriate, scarce, specialized, qualified, certified, or other specific team or physical resources.

TT PRE-ASSIGNMENT التعيين المسبق

- ✓ Sometimes resources are assigned in **advance** (defined within charter) because of their experience or the sponsor require these resources to be assigned in the project.

Lecture 06 : Project Resource Management

03. Acquire Resources

TT Virtual Teams: فرق العمل الافتراضية

Team members with little or no time spent meeting face to face.

- The virtual team model makes it possible to:
- Form teams of people from the same organization who live in widespread geographic areas
تشكيل فرق من الأفراد من نفس الشركة يعيشون في مناطق جغرافية واسعة الانتشار
- Add special expertise to a project team even though the expert is not in the same geographic area.
إضافة خبرات خاصة إلى فريق المشروع حتى وإن كان الخبير ليس متواجداً في نفس المنطقة الجغرافية
- Incorporate employees who work from home offices
ضم الموظفين العاملين من مكاتب في منازلهم
- Include people with mobility limitations or disabilities
ضم أفراد يعانون من قيود خاصة (إعاقات)
- Save the expense of offices and all physical equipment needed for employees.
- Move forward with projects that would have been held or cancelled due to travel expenses.



Lecture 06 : Project Resource Management

03. Acquire Resources

○ PHYSICAL RESOURCE ASSIGNMENTS

مهام الموارد المادية

- Documentation of the physical resource assignments records the material, equipment, supplies, locations, and other physical resources that will be used during the project.

تسجيل وثائق مهام الموارد المادية المواد والمعدات والمستلزمات والموقع وغيرها من الموارد المادية التي سوف تستخدم أثناء المشروع.

○ PROJECT TEAM ASSIGNMENTS

مهام فرق المشروع

- Documentation of team assignments records the team members and their roles and responsibilities for the project.

تسجيل وثائق مهام فرق المشروع أعضاء الفرق وأدوارهم ومسؤولياتهم الخاصة بالمشروع



○ Resource Calendar

تقويم الموارد

- Identifies the working days, shifts, start and end of normal business hours, weekends, and public holidays when each specific resource is available.

Lecture 06 : Project Resource Management

04. Develop Team (Executing)



Lecture 06 : Project Resource Management

04. Develop Team (Executing)

➤ Develop Team is the process of :

- Improving competencies, team member interaction, and the overall team environment to enhance project performance.
- هي عملية تحسين الكفاءات والتفاعل بين أعضاء فريق العمل والمحيط العام الذي يعمل فيه أعضاء الفريق لتحسين أداء المشروع.

❖ The key benefit of this process:

- ✓ improved teamwork, enhanced interpersonal skills and competencies, motivated employees, reduced attrition, and improved overall project performance.

✓ تحسين العمل الجماعي، وتحسين المهارات الاجتماعية والكفاءات وتحفيز الموظفين وانخفاض ترك العمل، وتحسين الأداء العام للمشروع.

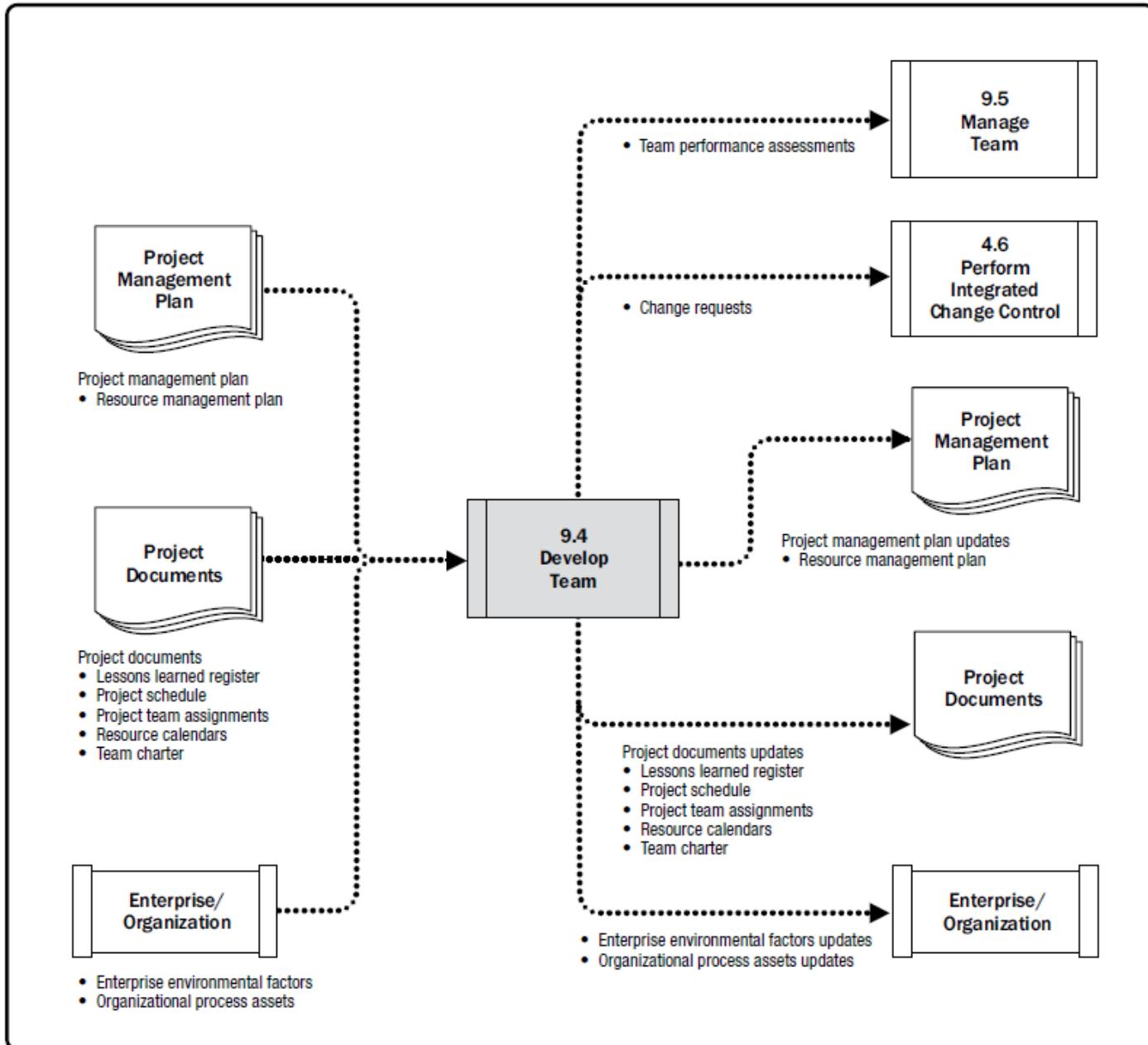


Figure 9-11. Develop Team: Data Flow Diagram

Project Resource Management

(4) Develop Team



Input

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



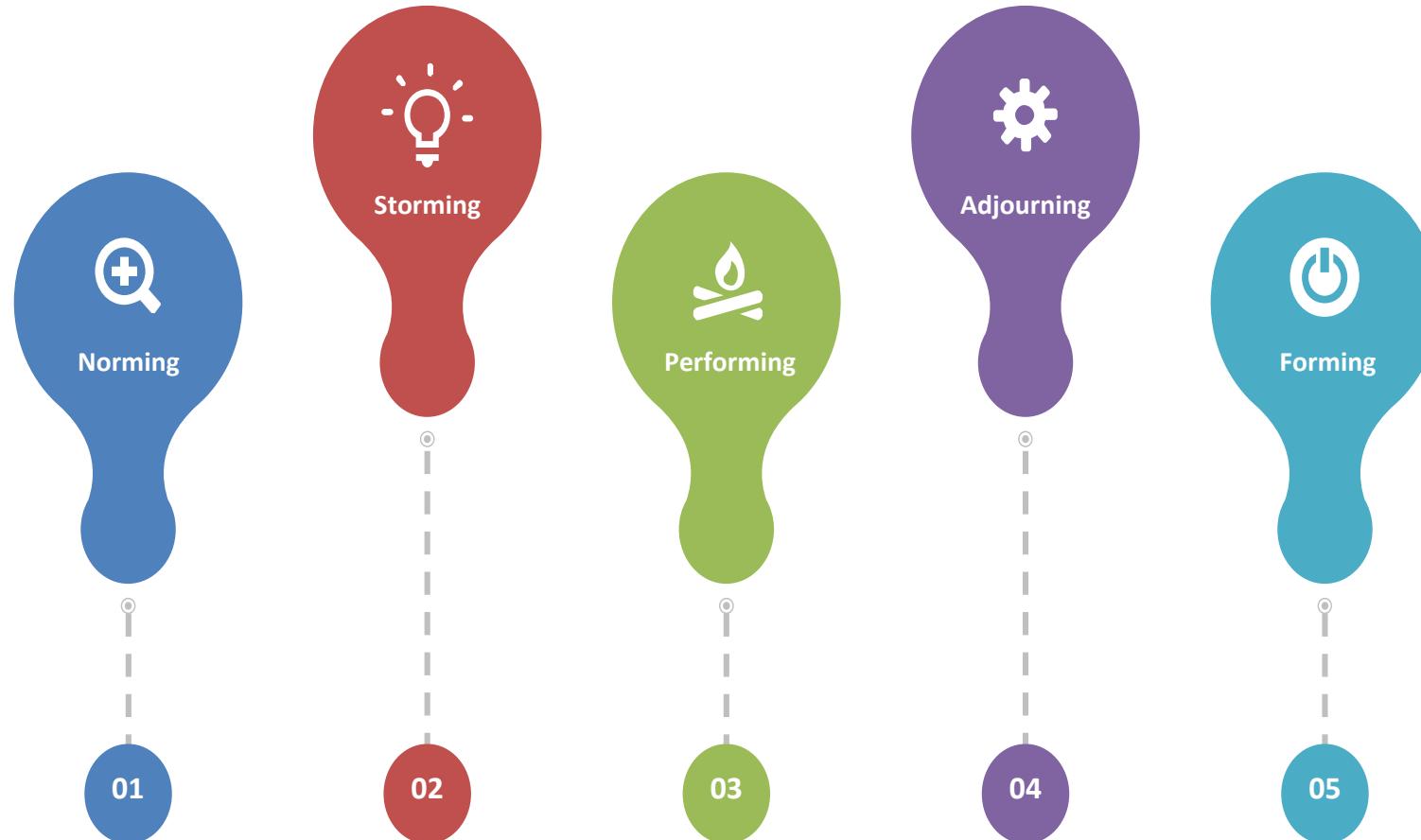
Outputs

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

Lecture 06 : Project Resource Management

04. Develop Team (Executing)

One of the models used to describe **team development** is the Tuckman ladder [19, 20], which includes five stages of development that teams may go through.



Lecture 06 : Project Resource Management

04. Develop Team (Executing)

Team Development Stages:

1. **Forming:** The team members meet and learn about the project and their formal roles and responsibilities.
2. **Storming:** There are disagreements as people learn to work together
3. **Norming:** begin to work together. The team members learn to trust each other.
4. **Performing:** Team members work effectively together as well-organized unit
5. **Adjourning:** Team members complete the work and moves on from the project

Lecture 06 : Project Resource Management

04. Develop Team (Executing)

TT Co-Location: وحدة الموقع

- Placing the active team members in the same location to enhance their ability to perform as a team.
- Ex: a team meeting room, common places to post schedules that enhance communication.



TT Communication technology تكنولوجيا الاتصالات

➤ important in addressing the team development issues in collocated and virtual teams.

- **Shared portal** A shared repository for information sharing (e.g., website, intranet)
- **Video conferencing** المؤتمرات المرئية
- **Audio conferencing** المؤتمرات السمعية
- **Email/chat** البريد الإلكتروني/المحادثات



Lecture 06 : Project Resource Management

04. Develop Team (Executing)

TT Recognition And Rewards التقدير والمكافآت

- Rewards will be effective only if they satisfy a need that is valued by that individual تكون المكافآت فعالة إذا كانت تلبي حاجة ذات قيمة لدى ذلك الفرد
- Cultural differences should be considered when determining recognition and rewards. يجب أن تُراعي الاختلافات الثقافية عند تحديد التقدير والمكافآت

TT Training: التدريب

- Enhance the competencies of the project team members.
- Scheduled training takes place as stated in resource management plan.
- Unplanned training takes place as a result of observation.
- Training costs could be included in the project budget or supported by the performing organization if the added skills may be useful for future projects.

Lecture 06 : Project Resource Management

04. Develop Team (Executing)

TT Individual And Team Assessments

تقييمات الأفراد وفريق العمل

These tools help project manager:

- Assess team members preferences, aspirations. تقييم تفضيلات أعضاء الفريق وطموحاتهم
- How they organize information. كيفية قيامهم بمعالجة وتنظيم المعلومات
- How they make decisions. كيفية قيامهم باتخاذ القرارات
- How they prefer to interact with people. كيفية التفاعل مع الأفراد

Examples of these tools are

- Surveys, interviews, and focus groups. الاستقصاءات والمقابلات المنسقة والمجموعات

These tools provide improved understanding, communication, and trust among the team.

توفر هذه الأدوات فهم أفضل وتعمل على تعزيز الثقة والالتزام والاتصال بين أعضاء الفريق وتيسير أعمال فرق أكثر إنتاجية خلال فترة المشروع.

Lecture 06 : Project Resource Management

04. Develop Team (Executing)

o Team Performance Assessments:

As project team development efforts such as training, team building, and colocation are implemented, the project management team makes formal or informal assessments of the project team's effectiveness. Effective team development strategies and activities are expected to increase the team's performance, which increases the likelihood of meeting project objectives.

- The evaluation of a team's effectiveness may include indicators such as:
 - ✓ Improvement in skills التحسينات في المهارات
 - ✓ Improvement in competencies التحسينات في الكفاءات
 - ✓ Reduce staff turnover rate انخفاض معدل ترك العمل
 - ✓ Increased team cohesiveness زيادة تماسك الفريق

Lecture 06 : Project Resource Management

05. Manage Team (Executing)



Lecture 06 : Project Resource Management

05. Manage Team (Executing)

➤ Manage Team is the process of :

- Tracking team member performance, providing feedback, resolving issues, and managing team changes to optimize project performance.

هي عملية تتبع أداء أعضاء الفريق وتقديم التعليقات وحل الإشكالات وإدارة التغييرات في الفريق من أجل تحسين أداء المشروع.

❖ The key benefit of this process:

- ✓ influences team behavior, manages conflict, and resolves issues.

✓ تؤثر على سلوك الفريق وتدير النزاع وتحل الإشكالات.

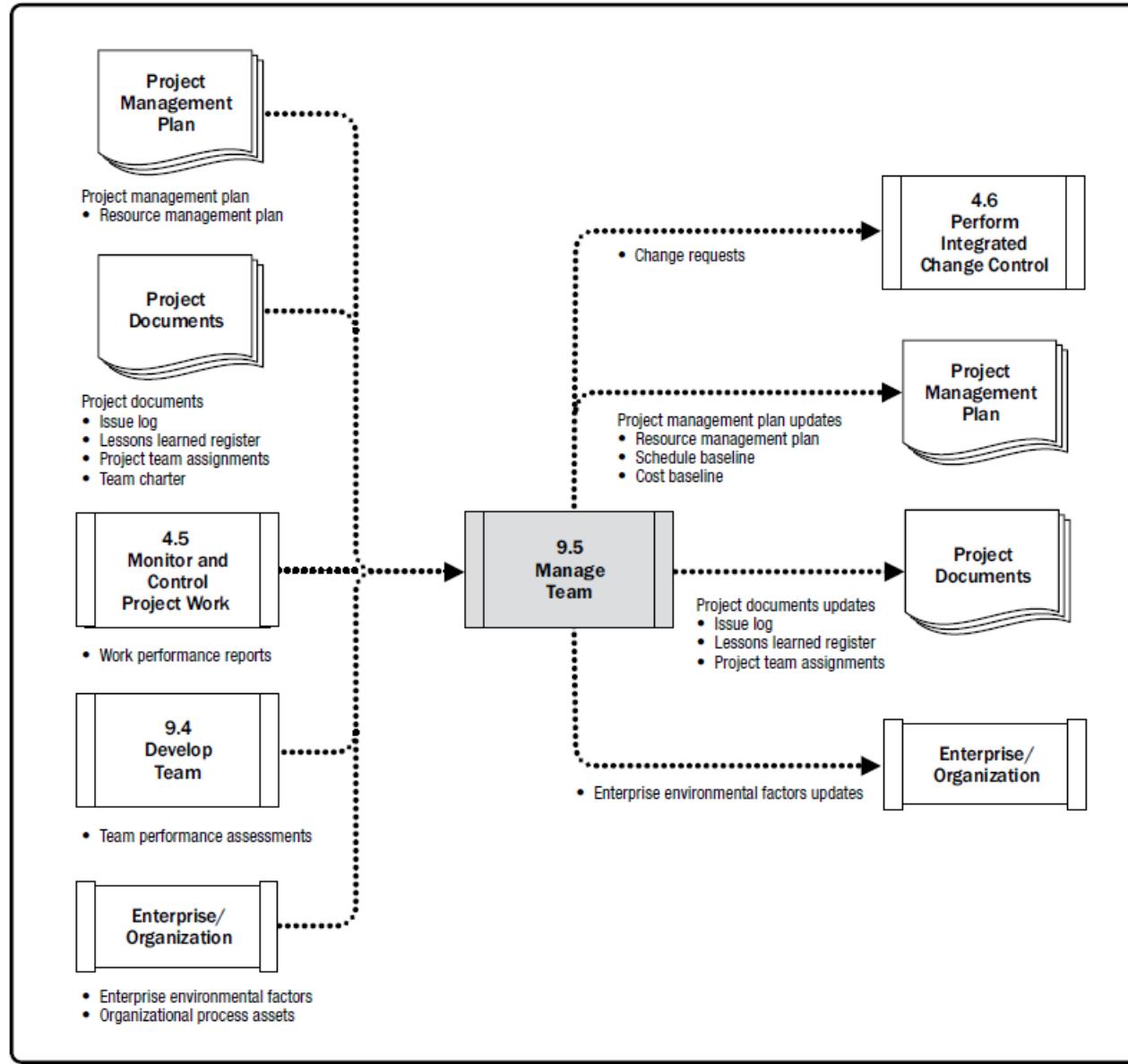
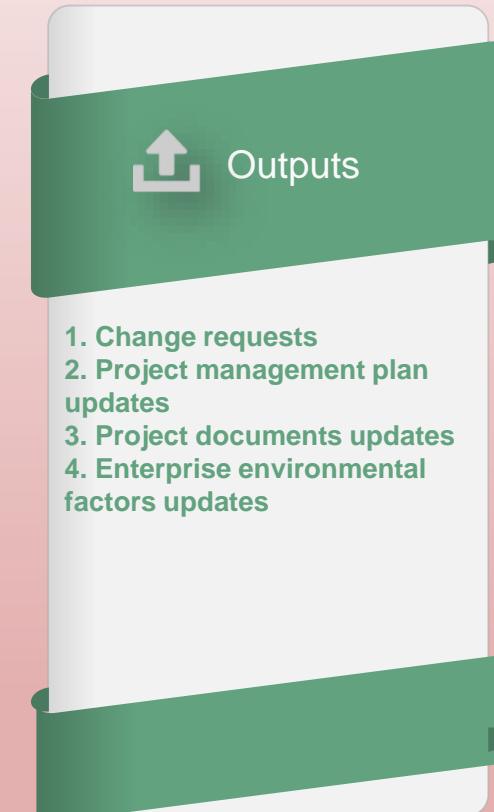


Figure 9-13. Manage Team: Data Flow Diagram

Project Resource Management

(5) Manage Team



Conflict Management



TT Interpersonal and team skills

□ Conflict Management: إدارة النزاع

- Conflict is inevitable in a project environment

لا مفر من حدوث نزاع في أي بيئة مشروع



Lecture 06 : Project Resource Management

05. Manage Team (Executing)

□ Conflict Management: إدارة النزاع

- There are five general techniques for resolving conflict.



Retreating from an actual or potential conflict situation; postponing the issue to be better prepared or to be resolved by others.



التراجع عن موقف نزاع فعلي أو محتمل؛ أو تأجيل الإشكال حتى يتم التجهيز له بشكل أفضل أو ترك حله للآخرين



Emphasizing areas of agreement rather than areas of difference.

التركيز على جوانب الاتفاق بدلاً من جوانب الاختلاف



Lecture 06 : Project Resource Management

05. Manage Team (Executing)



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

- This approach occasionally results in a lose-lose situation



البحث عن حلول تجلب درجة من الرضا لشتي الأطراف حرصاً على حل النزاع مؤقتاً أو جزئياً



Force/direct. Pushing one's viewpoint at the expense of others; usually enforced through a power position to resolve an emergency. often results to a win-lose situation.

دفع وجهة نظر أحد الأفراد على حساب الآخرين وتقديم حلول مرضية لطرف واحد فقط وعادة ما تكون مفروضة من خلال منصب ذي سلطة لحل حالة طارئة. هذا الأسلوب ينتج غالباً موقف طرف رابح وطرف خاسر.



Problem solve. Incorporating multiple viewpoints and insights from differing perspectives; requires a cooperative attitude and open dialogue that typically leads to consensus. result in a win-win situation.

Lecture 06 : Project Resource Management

05. Manage Team (Executing)

TT Emotional intelligence الذكاء العاطفي

- Emotional intelligence is the ability to identify, assess, and manage the personal **emotions** of oneself and other people. هو قدرة الشخص على تحديد وتقدير والسيطرة على انفعالاته وكذلك تلك الخاصة بالآخرين
- The team can use emotional intelligence to reduce tension and increase cooperation by identifying, assessing, and controlling the sentiments of project team members.

يمكن لفريق إدارة المشروع استخدام الذكاء العاطفي في الحد من التوتر وزيادة التعاون من خلال تحديد وتقدير والتحكم في انفعالات أعضاء فريق المشروع.

Lecture 06 : Project Resource Management

05. Manage Team (Executing)

TT Influencing التأثير

- Because project managers often have **little or no direct authority** over team members in a **matrix environment**, their ability to influence stakeholders on a timely basis is critical to project success.

نظرًا لأن مديري المشاريع يتمتعون بقدر ضئيل من السلطة المباشرة أو لا يتمتعون بها على أعضاء الفريق في بيئة العمل القائمة على نظام المصفوفة، فإن قدرتهم على التأثير على المعنيين على أساس الوقت يعد أمرًا حيوياً لنجاح المشروع.

Key influencing skills include:

- ✓ Ability to be persuasive. القدرة على أن تكون مقنعاً
- ✓ Clearly articulating points and positions. التعبير بوضوح عن وجهات النظر والموافق
- ✓ High levels of active and effective listening skills. مستويات عالية من مهارات الإنصات الفعالة والمؤثرة
- ✓ Awareness of, and consideration for, the various perspectives in any situation.
- ✓ Gathering relevant information to address issues and reach agreements.

Lecture 06 : Project Resource Management

05. Manage Team (Executing)

TT Leadership القيادة

- Successful projects require leaders with strong leadership skills.
تتطلب المشروعات الناجحة قادة ذوي مهارات قيادية قوية
- Leadership is the ability to lead a team and inspire them to do their jobs well.
القيادة هي القدرة على قيادة الفريق وتشجيعه على القيام بوظائفه جيداً.
- It is especially important to communicate the vision and inspire the project team to achieve high performance.
ومن المهم بشكل خاص توصيل الرؤية وتحفيز فريق المشروع لتحقيق الأداء العالي.



Lecture 06 : Project Resource Management

05. Manage Team (Executing)

o Change Requests

EX:

- staffing changes, whether made by choice or by uncontrollable events



Can cause the schedule to slip or the budget to be exceeded

Moving people to different assignments, outsourcing some of the work

Replacing team members who leave

Lecture 06 : Project Resource Management

06. Control Resources



Lecture 06 : Project Resource Management

06. Control Resources

➤ Control Resources is the process of :

- Ensuring that the **physical resources** assigned and allocated to the project are available as planned.
عملية ضمان أن الموارد المادية المعينة والمخصصة للمشروع متوفرة كما هو مخطط
- Monitoring the planned versus actual utilization of resources and taking corrective action as necessary.
مراقبة الاستغلال المخطط مقابل الاستغلال الفعلي للموارد والقيام بالإجراء التصحيحي.

❖ The key benefit of this process:

- ✓ Ensuring 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.
✓ ضمان أن الموارد المعينة متاحة للمشروع في الوقت المناسب وفي المكان المناسب وتسويتها حينما تتوقف الحاجة إليها.

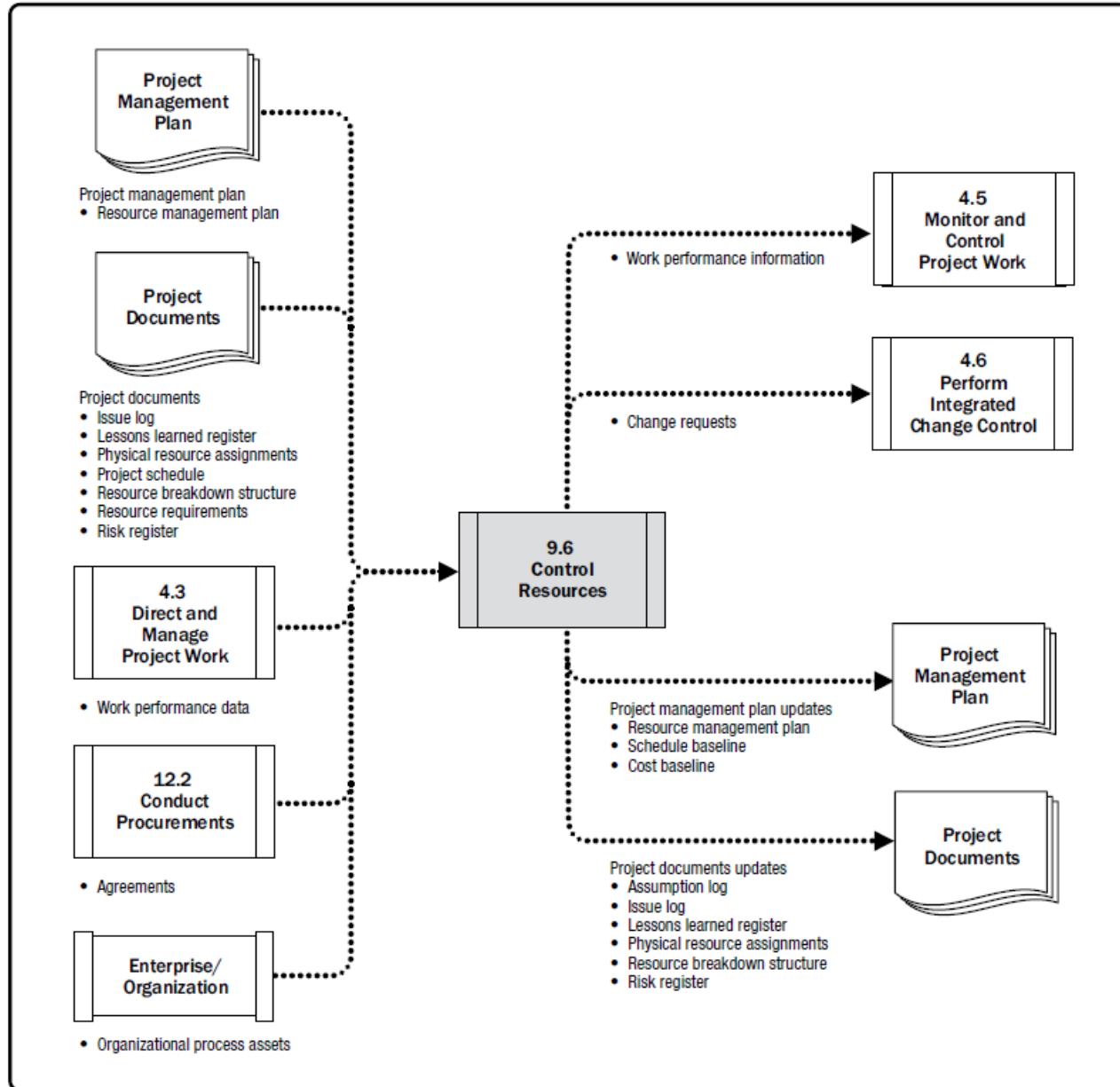


Figure 9-15. Control Resources: Data Flow Diagram

Project Resource Management

(6) Control Resources



Input

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. PMIS



Outputs

1. Work Performance Information
2. Change requests
3. Project management plan updates
4. Project documents updates

Lecture 06 : Project Resource Management

06. Control Resources

inputs

9.6.1.2 PROJECT DOCUMENTS

Project documents that can be considered as inputs for this process include but are not limited to:

- ◆ **Issue log.** Described in Section 4.3.3.3. The issue log is used to identify issues such as lack of resources, delays in raw material supplies, or low grades of raw material.
- ◆ **Lessons learned register.** Described in Section 4.4.3.1. Lessons learned earlier in the project can be applied to later phases in the project to improve physical resource control.
- ◆ **Physical resource assignments.** Described in Section 9.3.3.1. The physical resource assignments describe the expected resource utilization along with details such as type, amount, location, and whether the resource is internal to the organization or outsourced.
- ◆ **Project schedule.** Described in Section 6.5.3.2. The project schedule shows the resources that are needed, when they are needed, and the location where they are needed.
- ◆ **Resource breakdown structure.** Described in Section 9.2.3.3. The resource breakdown structure provides a reference in case any resource needs to be replaced or reacquired during the course of the project.
- ◆ **Resource requirements.** Described in Section 9.2.3.1. Resource requirements identify the needed material, equipment, supplies, and other resources.
- ◆ **Risk register.** Described in Section 11.2.3.1. The risk register identifies individual risks that can impact equipment, materials, or supplies.

Lecture 06 : Project Resource Management

06. Control Resources

inputs

9.6.1.3 WORK PERFORMANCE DATA

Described in Section 4.3.3.2. Work performance data contains data on project status such as the number and type of resources that have been used.

9.6.1.4 AGREEMENTS

Described in Section 12.2.3.2. Agreements made within the context of the project are the basis for all resources external to the organization and should define procedures when new, unplanned resources are needed or when issues arise with the current resources.

TT

9.6.2.1 DATA ANALYSIS

Data analysis techniques that can be used in this process include but are not limited to:

- ◆ **Alternatives analysis.** Described in Section 9.2.2.5. Alternatives can be analyzed to select the best resolution for correcting variances in resource utilization. Alternatives such as paying additional for overtime or additional team resources can be weighed against a late delivery or phased deliveries.
- ◆ **Cost-benefit analysis.** Described in Section 8.1.2.3. This analysis helps to determine the best corrective action in terms of cost in case of project deviations.
- ◆ **Performance reviews.** Performance reviews measure, compare, and analyze planned resource utilization to actual resource utilization. Cost and schedule work performance information can also be analyzed to help pinpoint issues that can influence resource utilization.

Lecture 06 : Project Resource Management

06. Control Resources

TT Problem Solving

- Problem solving may use a set of tools that helps the project manager to solve problems that arise during the control resource process.
- The project manager should use methodical steps to deal with problem solving, which can include:
 - ✓ **Identify the problem.** Specify the problem.
 - ✓ **Define the problem.** Break it into smaller, manageable problems.
 - ✓ **Investigate.** Collect data.
 - ✓ **Analyze.** Find the root cause of the problem.
 - ✓ **Solve.** Choose the suitable solution from a variety of available ones.
 - ✓ **Check the solution.** Determine if the problem has been fixed.



Lecture 06 : Project Resource Management

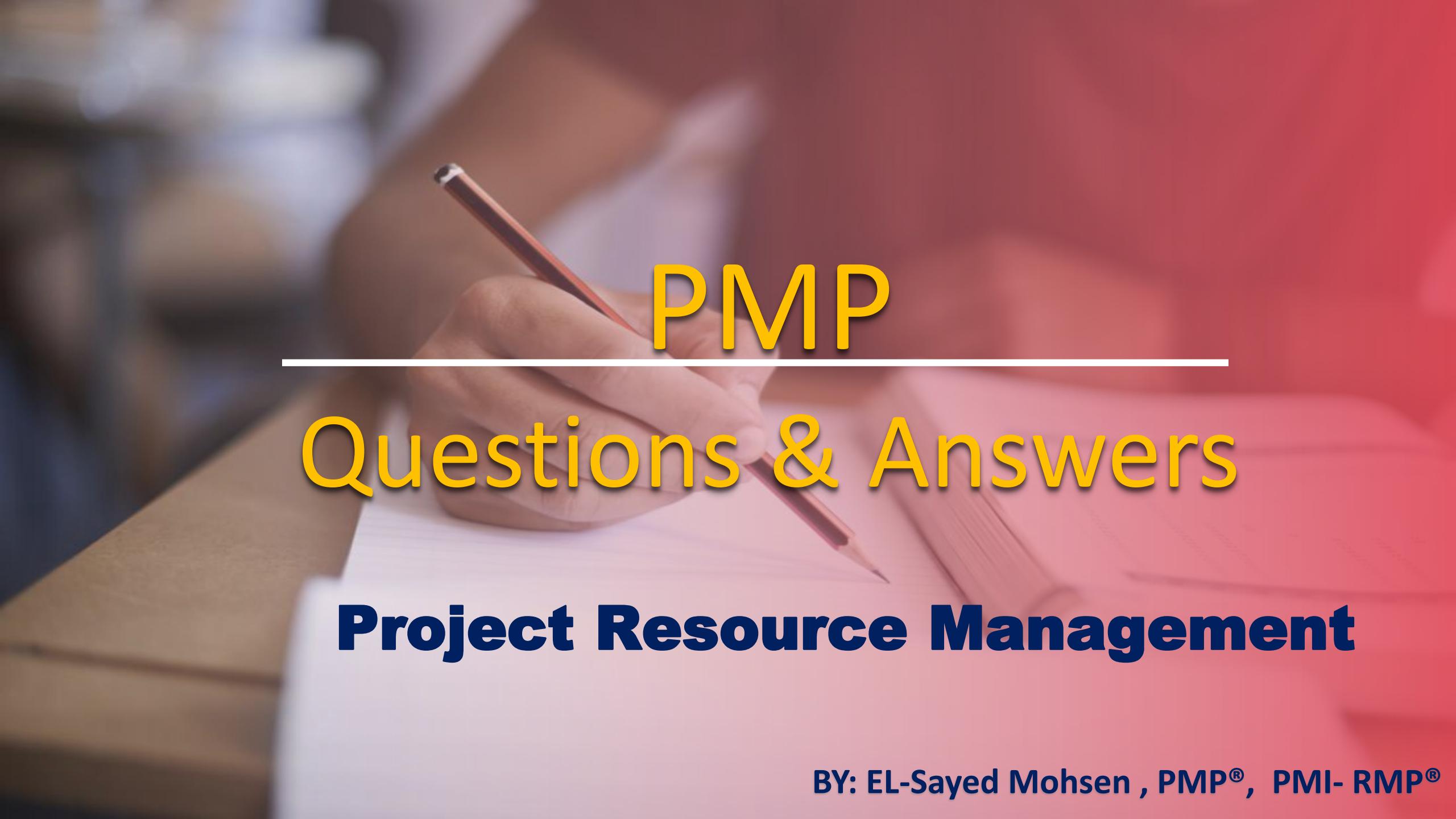
06. Control Resources

o Work Performance Information

Work performance information includes information on how the project work is progressing by comparing resource requirements and resource allocation to resource utilization across the project activities. This comparison can show gaps in resource availability that need to be addressed.

o CHANGE REQUESTS

When change requests occur as a result of carrying out the Control Resources process or when recommended, corrective, or preventive actions impact any of the components of the project management plan or project documents, the project manager needs to submit a change request. Change requests are processed for review and disposition through the Perform Integrated Change Control process

A close-up photograph of a person's hands writing with a pencil on a white, lined notebook. The hands are positioned diagonally across the frame, with one hand holding the pencil and the other providing support. The background is blurred, showing a wooden desk and some papers.

PMP

Questions & Answers

Project Resource Management

BY: EL-Sayed Mohsen , PMP®, PMI- RMP®



Q1) After completing some work required to develop your project team members, such as improving competencies, team member interaction. What will you do next?

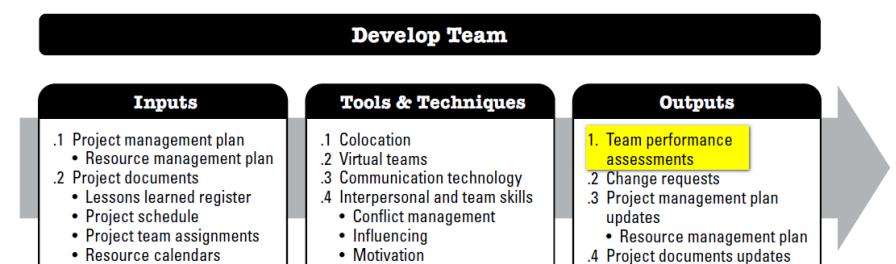
- A. Team performance assessments**
- B. Team building activities**
- C. Staff assignments**
- D. WBS dictionary elements**

PMBOK 363

9.4 DEVELOP TEAM

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. This process is performed throughout the project.

The inputs, tools and techniques, and outputs of the process are depicted in Figure 9-10. Figure 9-11 depicts the decision flow diagram for the process.





Q2) Two team members on your project often disagree. You need a conflict resolution method that provides a long-term resolution. You decide to use which one of the following approaches?

- A. Smoothing**
- B. Problem solving**
- C. Compromise**
- D. Withdrawal**





Q3) you are a project manager , in implementation phase A conflict appeared between two members of your team and the conflict start to impact the whole team and the moral become low , What should you do ?

- A) Do nothing**
- B) ask the team members to solving the conflict by them self.**
- C) interfering for solve the problem immediatly**
- D) escalate the problem to HR department.**



C



Q4) Rina and Gimo are the senior developers in a website development project. They have argued about the best web design product to use in developing the new website. As the project manager, you use a forcing approach to make a decision and reduce the conflict. What is the main characteristic of this approach?

- A- Forcing to close the project**
- B- Highlighting areas of agreement rather than areas of disagreement**
- 3- Asserting one's viewpoint at the expense of others**
- 4- Withdrawing from the actual conflict**



C

PMBOK 349

- **Force/direct:** Pushing one's viewpoint at the expense of others; offering only win-lose solutions, usually enforced through a power position to resolve an emergency. This approach often results to a win-lose situation.



Q5) Which one of the following tools and techniques is NOT part of the Develop Team process?

- A- Co-location**
- B- Recognition and Rewards**
- C- Rolling Wave planning**
- D- Training**

PMBOK 336

Develop Team

Tools & Techniques
.1 Colocation
.2 Virtual teams
.3 Communication technology
.4 Interpersonal and team skills <ul style="list-style-type: none">• Conflict management• Influencing• Motivation• Negotiation• Team building
.5 Recognition and rewards
.6 Training
.7 Individual and team assessments
.8 Meetings





Q6) A large insurance company has chosen your company to develop a new line of business. This is a large and prestigious project for the company, and you have told the senior management you will create a team meeting room for this project. This is one of the strategies for:

- A- Co-location**
- B- Centralized Team**
- C- Project Control**
- D- Develop Team**

PMBOK 340

9.4.2.1 COLOCATION

Colocation involves placing many or all of the most active project team members in the same physical location to enhance their ability to perform as a team. Colocation can be temporary, such as at strategically important times during the project, or can continue for the entire project. Colocation strategies can include **a team meeting room**, **common places to post schedules**, and other conveniences that enhance communication and a sense of community.

ANSWERS





Q7) You are managing a project. An audit team wants to know where they can find information on training plans for the project team members and certification requirements. This are in the:

- A- Resource Breakdown Structure**
- B- Staff Release Plan**
- C- Resource Management Plan**
- D- Communications Management Plan**





Q8) You have outsourced programming to a company in another country and structural engineering to a company in a different country. The project does not have the budget to bring all the teams together, so you must rely on email, fax, videoconference, and chat to work together. This is an example of:

- A- Global Team**
- B- Virtual Team**
- C- Cross Functional Global Team**
- D- Diverse Team**



B



Q9) A project manager wishes to illustrate the connections between the work that needs to be done and the project team members. According to the PMBOK, the resulting document is a:

- A- Responsibility Assignment Matrix (RAM)**
- B- Resource Planning Chart (RPC)**
- C- Task Assignment Model (TAM)**
- D- Resource Assignment Chart (RAC)**



PMBOK 317

◆ **Assignment Matrix.** A RAM shows the project resources assigned to each work package. It is used to illustrate the connections between work packages, or activities, and project team members. On larger projects, RAMs can



Q10) Lesley is managing a software development project for the World Climate Control Organization. Since her team members are dispersed across the globe, she would like to set up online conferences in the next two months to let everyone in her project know what is going on and what their roles are within the project. She wants to use these conferences as team development activities to learn and exchange information in the project. To schedule such activities, which of the following should she use to keep track of the availability of team members?

- A- Project charter**
- B- Resource calendars**
- C- Responsibility assignment matrix**
- D- Project staff assignments**





Q11) Which of these is not an Enterprise environmental factor that can influence the Plan Resource Management process?

- A- Organizational culture**
- B- Lessons learned on organizational structures**
- C- Marketplace conditions**
- D- Facilities and resources**

PMBOK 315



B

9.1.1.4 ENTERPRISE ENVIRONMENTAL FACTORS

The enterprise environmental factors that can influence the Plan Resource Management

- ◆ Organizational culture and structure,
- ◆ Geographic distribution of facilities and resources,
- ◆ Existing resources competencies and availability, and
- ◆ Marketplace conditions.



Q12) You are in a meeting with your senior manager, who is helping you to organize and manage a team of IT people from diverse backgrounds. While you are discussing the creativity and breakthrough performance your team is demonstrating now, your senior manager indicates that your team has moved from the storming to the performing stage. Which of the following describes the characteristics of the performing stage?

- A- In the performing stage, the team completes the work and disbands as a project team.**
- B- In the performing stage, the team function as a well organized unit and resolve issues effectively.**
- C- In the performing stage, the team members are not collaborative.**
- D- In the performing stage, the team starts to work together and adjust their behavior**



PMBOK 338

◆ **Performing.** Teams that reach the performing stage function as a well-organized unit. They are interdependent and work through issues smoothly and effectively.



Q13) A project manager needs team members that report to a functional manager. What technique is the project manager most likely to use to obtain these resources?

- A- Pre-assignment**
- B- Authority**
- C- Negotiation**
- D- Coercion**

PMBOK 332



An interpersonal and team skill that can be used for this process includes but is not limited to **negotiation**. Described in Section 12.2.2.5. Many projects need to negotiate for required resources. The project management team may need to negotiate with:

- ◆ **Functional managers.** Ensure that the project receives the best resources possible in the required timeframe and until their responsibilities are complete.



Q14) You are in the process of identifying how to estimate, acquire, manage, and use team and physical resources. Which of the following inputs in this process?

- A. Networking-Organizational Theory-project management plan**
- B. Project documents-Resource calendar-staffing management plan**
- C. Project charter- Project management plan -enterprise environmental factors-Organizational process assets .**
- D. Project staff Assignments-Resource Calendar-Human resource management**



C

PMBOK 312

Plan Resource Management is the process of defining how to estimate, acquire, manage, and use team and physical resources. The key benefit of this process is that it establishes the approach and level of management effort needed



Q15) You are a project manager of a construction project. While doing the estimation, you realize that you will need 8 resources for 6 months. You can get only 3 resources after negotiating with the functional manager and as per the organizational policy, you can hire 3 more in every 6 months. As a project manager what will be your next step?

- A. Work With Virtual Team.**
- B. Negotiate with External Organizations and Suppliers.**
- C. Negotiate with functional manager to get more 2 resources .**
- D. Request your project customer to get more resources.**





Q16) You are a project coordinator from the buyer side. The supplier side project manager reached out to you to recommend a change in the proposal which will greatly benefit the end product. You believe the same but your PM think otherwise. As per him it's a waste of time and told you to continue with the existing project plan. What conflict resolution technique did the project manager use?

- A- Smoothing**
- B- Problem solving**
- C- Compromise**
- D- Direct/ Force**

ANSWERS





Q17) Your project is going very well ahead of schedule and under budget, and near to complete. The one of very vital technical members transferred to other project out of organization. and one of team member told you that he can do his job and complete the project without him . What should you do next?

- A- Do nothing , the project near to completion.**
- B- Assign other member to take his duties.**
- C- Negotiated with Functional manager to assign anew member.**
- D- Evaluate the impact with team members.**





Q18) A tool that provides a visual representation of human resource allocation to a project, number of working hours, and availability on the project over a series of time periods is a:

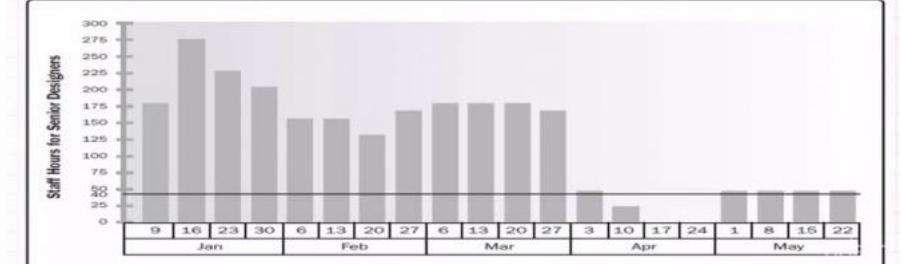
- A. Resource Histogram**
- B. Resource Breakdown Structure (RBS)**
- C. Organization Breakdown Structure (OBS)**
- D. Stakeholder Register**

ANSWERS



Resource Histogram:

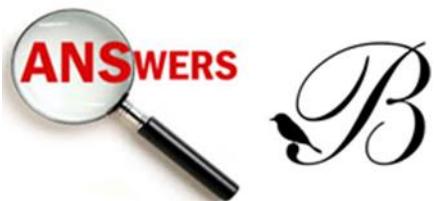
- Shows required number of hours that will be needed from each department or person for each week or month during the project.





Q19) You have been asked by your project manager to help them create a chart that illustrates the project resources that will be working on each work package. What would be the best type of chart to use?

- A. Milestone chart**
- B. RAM**
- C. Project organization chart**
- D. WBS**





Q20) You are working in a matrix organization and managing a project. The functional manager transferred some resources you need from your project to another project. What should you do next?

- A- Negotiate with Functional manager to assign a new resources
- B- Escalate this problem to the sponsor
- C- Complete the project without this resources
- D- Update Stakeholder Register



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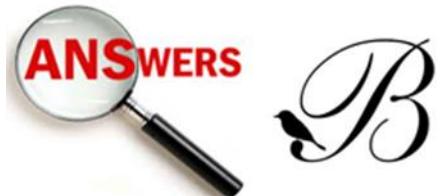


/PMP TRICKS



Q21) You are managing a large infrastructure project . two important team members are having some issues. You met the team members and documented the problem and target resolution date. What is the document the project manager used it?

- A- Risk register
- B- Issue log
- C- Stakeholder register
- D- Change log



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Q22) You are managing a large construction project. Your project team works in two different buildings across the city. You want to communicate the vision and inspire the project team to achieve high performance. Which of the following skills help the project manager ?

- A- Feedback
- B- Emotional intelligence
- C- Leadership
- D- Political awareness



C



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Q23) You are managing a large construction project .Your project team works in two different buildings across the city. The team has been struggling to perform effectively ,Moral is Low and has a difficult time resolving problems. What would be the BEST team development technique to resolve this issue?

- A- Negotiation.
- B- Recognition and Rewards.
- C- Co-location.
- D- Training.



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Q24) You are in the process of estimating the number of work periods needed to complete individual activities with estimated resources. One of the documents you are using contains information on categories of labor, material, and equipment required to complete your project. This document is known as:

- A- Organization breakdown structure (OBS).
- B- RACI Chart.
- C- Resource breakdown structure (RBS).
- D- Resource Calendars.



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Q25) In your project, one of your project team members leaves the site early at 1:00 pm on Friday and didn't finish his tasks on time. As a project manager, what should you do next?

- A- Schedule training sessions for the team member to optimize his performance.**
- B- Release a team member**
- C- Conduct One-on-One Meeting with the team member**
- D- Meeting with the project team members and evaluate the impact on the project.**



C



Q26) As a project manager, you are leading a software development project as a result of observation and conversation, you notice some of the team members need to improve their skills. What should you do FIRST?

- A- Acquire new members**
- B- Review the Resource Management Plan**
- C- Update Cost Baseline**
- D- Schedule training sessions for the team member to optimize his performance.**





Q27) A project manager is faced with two team members who have conflicting opinions. One team member explains her side of the conflict. The other team member responds by saying, “I know you’ll never really listen to my side, so let’s just go with her opinion and get back to work.” The team member used which of the following techniques for resolving conflict?

- A- Smoothing
- B- Compromise
- C- Withdrawal
- D- Forcing





Q28) You are managing a large diversified project team. In the initial days of the project, the team members behaved like independent individuals and seemed reserved, learning about their roles and responsibilities. Then, as the team began to work on the project and participate in technical decisions, their trust level grew. The team members now support each other's needs and work together. According to you, which stage of team development is the team in?

- A- Performing**
- B- Norming**
- C- Forming**
- D- Adjourning**



B



Q29) Some of your core team members who are situated in different locations are unable to perform as a team. You are concerned about this and make a decision to improve their performance as one core unit. Which among the below would be most suited for this purpose?

- A- Co-locate the core team members**
- B- Use communication technology like shared portals, audio/video conferencing and email/chat**
- C- Allow them to work as a virtual team using latest collaboration technology**
- D- Check employee performance records of the core team members to determine how to facilitate collaboration among them**





Q30) You are managing a construction project. During the project execution, the architect engineer has resigned. You need to negotiate with the functional manager to get another one. Which of the following will help you to convince him?

- A- RACI Chart
- B- Team charter
- C- Resource Breakdown Structure (RBS)
- D- Project charter



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