

**Dr. Ahmed AbdelHady - PMP Preparation Course (6<sup>th</sup> Edition)**

## **Chapter 9 – Resource Management**

**Pages (307 – 358) / PMBOK 6<sup>th</sup> Edition**



# Chapter 9 – Resource Management

- |                                |                     |
|--------------------------------|---------------------|
| 1- Plan Resource Management    | (Planning Process)  |
| 2- Estimate Activity Resources | (Planning Process)  |
| 3- Acquire Resources           | (Executing Process) |
| 4- Develop Team                | (Executing Process) |
| 5- Manage Team                 | (Executing Process) |
| 6- Control Resources           | (M&C Process)       |

# Chapter 9 – Resource Management

## 9.1 Plan Resource Management

- .1 Inputs
  - .1 Project charter
  - .2 Project management plan
  - .3 Project documents
  - .4 Enterprise environmental factors
  - .5 Organizational process assets
- .2 Tools & Techniques
  - .1 Expert judgment
  - .2 Data representation
  - .3 Organizational theory
  - .4 Meetings
- .3 Outputs
  - .1 Resource management plan
  - .2 Team charter
  - .3 Project documents updates

## 9.4 Develop Team

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

## 9.2 Estimate Activity Resources

- .1 Inputs
  - .1 Project management plan
  - .2 Project documents
  - .3 Enterprise environmental factors
  - .4 Organizational process assets
- .2 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
- .3 Outputs
  - .1 Resource requirements
  - .2 Basis of estimates
  - .3 Resource breakdown structure
  - .4 Project documents updates

## 9.5 Manage Team

- 1 Inputs
  - .1 Project management plan
  - .2 Project documents
  - .3 Work performance reports
  - .4 Team performance assessments
  - .5 Enterprise environmental factors
  - .6 Organizational process assets
- .2 Tools & Techniques
  - .1 Interpersonal and team skills
  - .2 Project management information system
- .3 Outputs
  - .1 Change requests
  - .2 Project management plan updates
  - .3 Project documents updates
  - .4 Enterprise environmental factors updates

## 9.3 Acquire Resources

- 1 Inputs
  - .1 Project management plan
  - .2 Project documents
  - .3 Enterprise environmental factors
  - .4 Organizational process assets
- .2 Tools & Techniques
  - .1 Decision making
  - .2 Interpersonal and team skills
  - .3 Pre-assignment
  - .4 Virtual teams
- .3 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

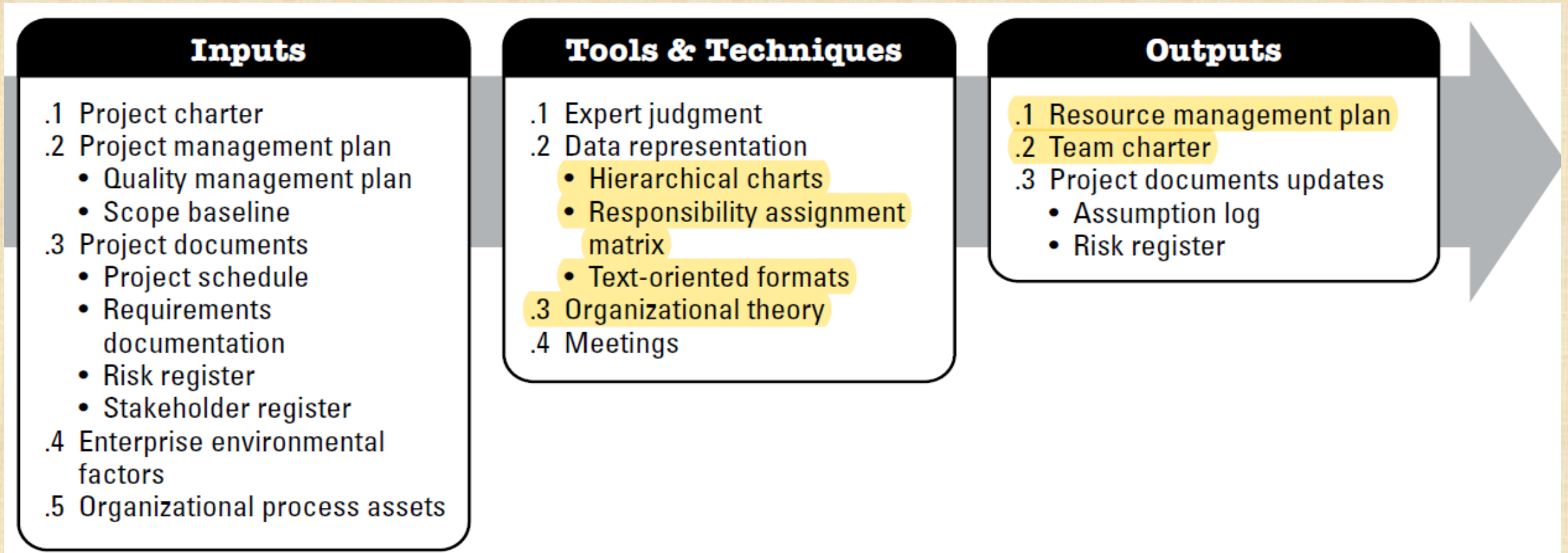
## 9.6 Control Resources

- .1 Inputs
  - .1 Project management plan
  - .2 Project documents
  - .3 Work performance data
  - .4 Agreements
  - .5 Organizational process assets
- .2 Tools & Techniques
  - .1 Data analysis
  - .2 Problem solving
  - .3 Interpersonal and team skills
  - .4 Project management information system
- .3 Outputs
  - .1 Work performance information
  - .2 Change requests
  - .3 Project management plan updates
  - .4 Project documents updates

# Chapter 9 – Resource Management

## 1- Plan Resource Management (Planning Process)

- **Only How Resources** will be estimated, acquired, managed throughout the project
- This process is **performed once or at predefined points** in the project



# Chapter 9 – Resource Management

## 1- Plan Resource Management (Planning Process)

### T&T (Data Representation)

#### 1- Hierarchical charts:

مخططات علي شكل هرمي

#### A- Organization Breakdown Structure (OBS)

- Dividing the Organization as Departments like HR, Technical & Financial
- Work package & Responsibilities are under each department

تقسيم المؤسسة الي أقسام وتحت كل قسم الافراد والمسؤوليات

#### B- Resource Breakdown Structure (RBS)

- Dividing the Project as Categories like Team, Materials & Equipment
- Details are under each category to be used later with WBS

تقسيم المشروع الي تصنيفات وتحت كل تصنيف كافة التفاصيل للتنسيق مع ال WBS

# Chapter 9 – Resource Management

## 1- Plan Resource Management (Planning Process)

### T&T (Data Representation)

## 2- Responsibility Assignment Matrix (RAM):

## مصفوفة المسؤوليات

- RAM shows each Team Member and His Activities & Work Package & Roles & Responsibilities
- RACI is a type of RAM

توضح مسؤوليات ودور كل فرد بالمشروع

**R: Responsible**

مسؤول

**A: Accountable**

يتم محاسبته

**C: Consult**

إستشاري

**I: Inform**

يتم إخباره

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

# Chapter 9 – Resource Management

## 1- Plan Resource Management (Planning Process)

### T&T (Data Representation)

#### 3- Text-oriented formats:

السرد

When we need to write More Details about each team member Responsibilities & Skills

عندما نريد كتابة تفاصيل اكثر عن مسؤوليات ومهارات الافراد

### T&T

#### 4- Organizational Theory:

النظرية التنظيمية

- It is important to recognize/define that the organization's structure and culture impacts the project organizational structure
- It shows who will report to whom & Who will solve the occurred problem

تعطي تنظيم وتعريف لهيكله المشروع ومن سيكون له دور الريادة ومن يرسل لمن التقارير ويحل المشاكل

# Chapter 9 – Resource Management

## 1- Plan Resource Management (Planning Process)

### OUTPUTS

#### 1- Resource Management Plan

#### خطة إدارة الموارد

Including Guide for the following:

- Identification of resources
- Acquiring resources
- Training
- Roles and Responsibilities:

A- Role:	Civil Engineer or Planning Engineer or Accountant	المسمى الوظيفي
B- Authority:	Right to apply or sign approval or accept deliverables	السلطة
C- Responsibility:	Assigned Duties to be finalized	المسؤولية
D- Competences:	Skills	المهارة

#### 2- Team Charter

#### ميثاق الفريق

Team Charter is an operating guidelines for the team & Including

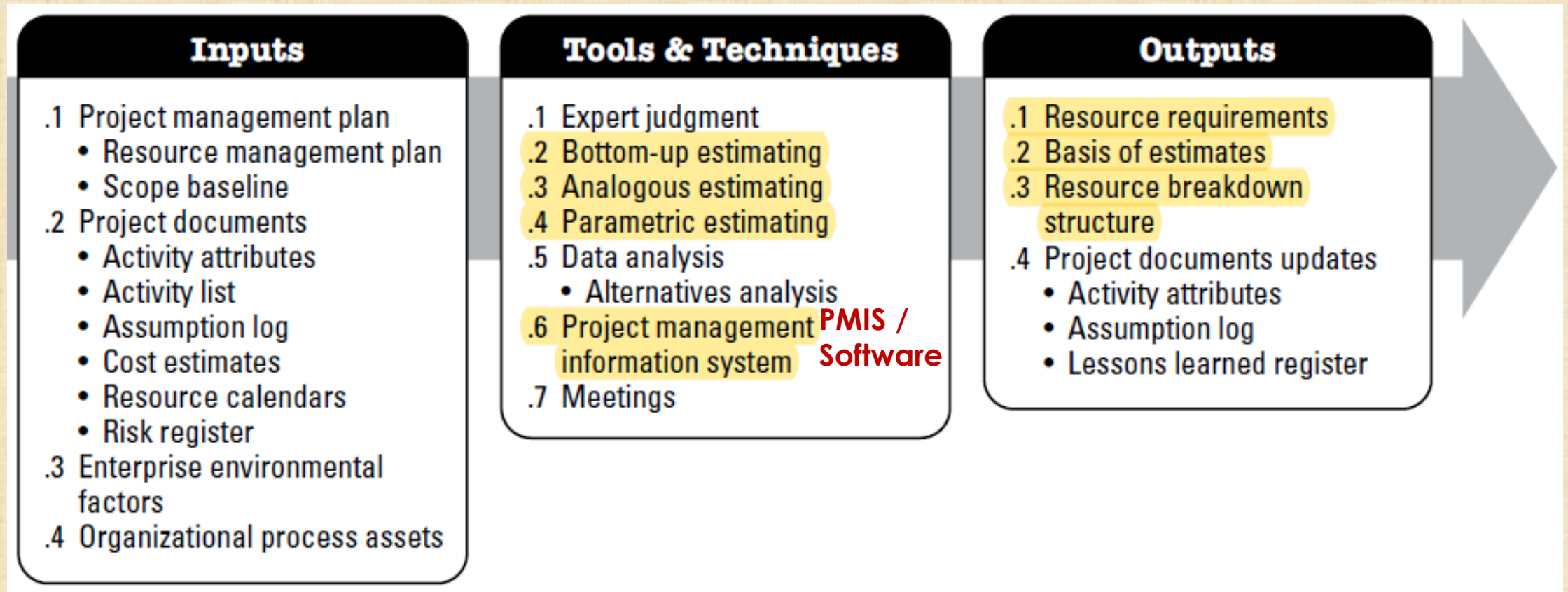
- |  |                       |
|--|-----------------------|
| A- Team values,                          | E- Meeting guidelines |
| B- Communication guidelines,             | F- Team agreements    |
| C- Decision-making criteria and process, |                       |
| D- Conflict resolution process,          |                       |



# Chapter 9 – Resource Management

## 2- Estimate Activity Resources (Planning Process)

**Estimating** team resources and the type and quantities of **materials, 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. This process is **performed periodically throughout the project as needed**



# Chapter 9 – Resource Management

## 2- Estimate Activity Resources (Planning Process)

### OUTPUTS

#### 1- Resource Requirements

#### إحتياجات الموارد

Identify the types and quantities of resources required for each work package

#### 2- Basis of Estimates

#### اسس التقديرات

Provide a clear and complete understanding of how the resource estimate was derived

#### 3- Resource Breakdown Structure (RBS)

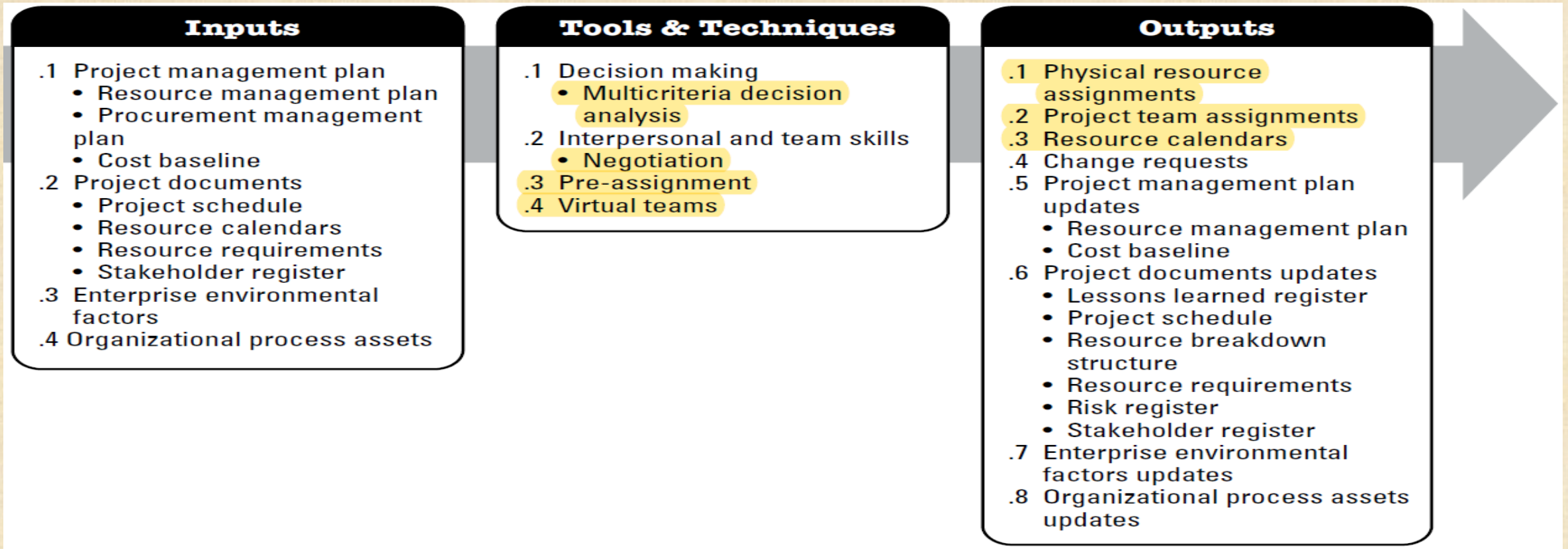
- Dividing the Project as **Categories** like Team, Materials & Equipment
- Details are under each category to be used later with **WBS**

تقسيم المشروع الي تصنيفات وتحت كل تصنيف كافة التفاصيل للتنسيق مع ال WBS

# Chapter 9 – Resource Management

## 3- Acquire Resources (Executing Process)

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 assigns them to their respective activities. This process is performed periodically throughout the project as needed



# Chapter 9 – Resource Management

## 3- Acquire Resources (Executing Process)

### T&T (Decision Making)

- 1- Multicriteria Decision Analysis: صنع قرار بدراسة العديد من العوامل لتحديد الموارد  
Select physical resources, or the project team using the following Criteria:  
(Availability / Cost / Ability / Experience / Knowledge/ Skills / Attitude)

### T&T (Interpersonal & Team Skills)

- 2- Negotiation: التفاوض  
Negotiate for the Required Resources with:



- A- Functional Manager
- B- Others Project Management Teams within Organization
- C- External Organizations & Suppliers

مدير الموارد البشرية أو مدير القسم  
إدارة المشروعات الاخرى بالشركة  
الشركات الخارجية والموردين

# Chapter 9 – Resource Management

## 3- Acquire Resources (Executing Process)

### T&T

#### 3- Pre-Assignment:

#### تعيين مسبق بالمشروع

- When physical or team resources for a project are **determined in advance**
- When there is **a need for Experts**
- **May be mentioned in Project Charter**

### T&T

#### 4- Virtual Team:

#### فريق العمل الافتراضي

- **The team that is Not located with Project team in the same place / Different Geographic Areas**  
- هو فريق ليس متواجد بنفس مكان المشروع / منطقة جغرافية اخرى
- **Virtual Team Add special Expertise**  
- الفريق الافتراضي يزيد الخبرة لفريق المشروع
- **Virtual Team Decrease the Project Cost as decrease the Travelling Cost**  
- الفريق الافتراضي يقلل التكلفة لانه يقلل تكلفة السفر
- **Virtual Team Communicate with Project Team through Emails / Video Conference**  
- الفريق الافتراضي يتواصل مع فريق المشروع باستخدام الايميل والاجتماعات باستخدام الفيديو المشاهد

# Chapter 9 – Resource Management

## 3- Acquire Resources (Executing Process)

### OUTPUTS

#### 1- Physical Resource Assignments

تقارير الموارد

Including Materials, Equipment, Locations, Supplies,...

#### 2- Project Team Assignments

تقارير فريق المشروع

Including Team Members & their Roles and Responsibilities for the project,...

#### 3- Resource Calendars

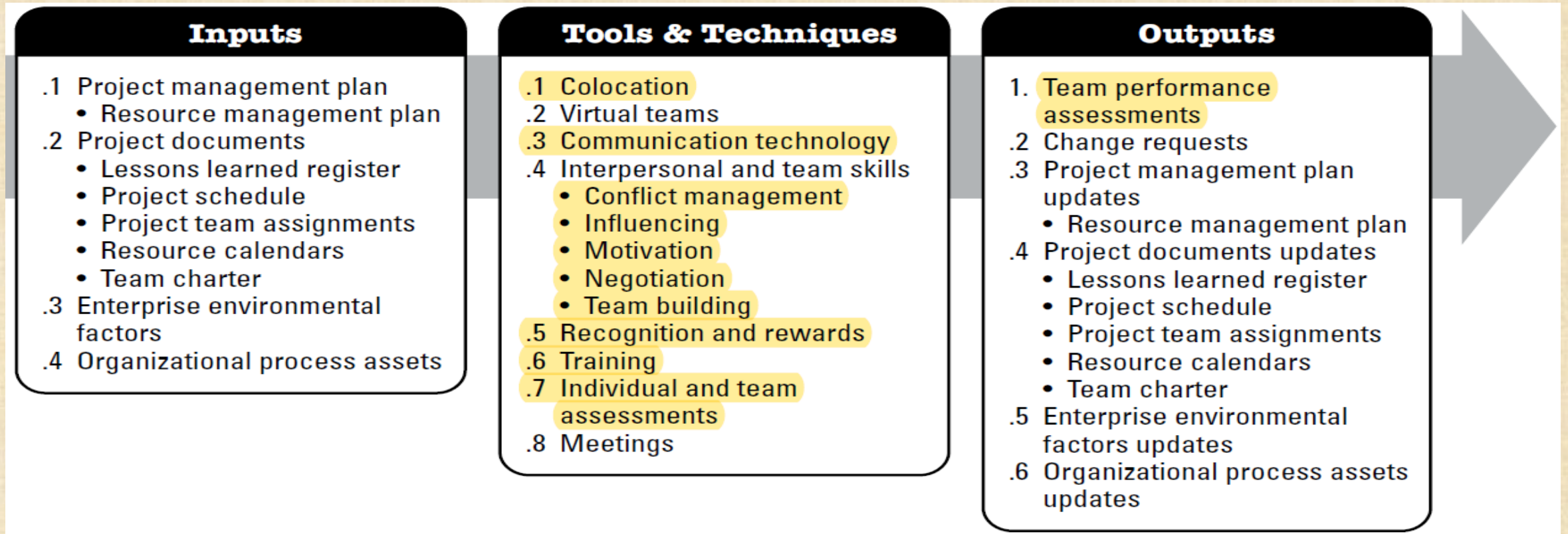
تقويم مواعيد الموارد

Including the working days, shifts, start and end of business hours, weekends, holidays & resource availability,...

# Chapter 9 – Resource Management

## 4- Develop Team (Executing Process)

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



# Chapter 9 – Resource Management

## 4- Develop Team (Executing Process)

### T&T

#### 1- Co-location:

وضع فريق العمل في مكان واحد

Let the Team to be in the same place to **Increase the Benefits of their activities**

#### 2- Communication Technology:

وسيلة وتكنولوجيا التواصل

As Emails, Video Conference, Audio Conference, Websites

#### 3- Recognition & Rewards:

الحوافز والمكافآت

**Reward decisions are made, formally or informally**  
**Cultural differences** should be considered during rewards

المكافآت تكون بشكل رسمي او غير رسمي  
اخذ اختلاف الثقافات في الاعتبار

#### 4- Training:

التدريب

Training can be formal or informal

#### 5- Individual & Team Assignments:

تقارير فردية وجماعية

Give the project manager insight/Ideas of **strengths & weaknesses** Areas to Assess the Team

تعطي مدير المشروع افكار عن مناطق القوة والضعف في عملية تقييم الفريق



# Chapter 9 – Resource Management

## 4- Develop Team (Executing Process)

### T&T (Interpersonal & Team Skills)

#### 6- Conflict Management:

#### إدارة الخلافات

To Resolve any Conflict.....(as shown in **Next Process / Manage Team**)

#### 7- Influencing:

#### التأثير

Gathering information / Maintaining Mutual Trust ثقة متبادلة.....(**Next Process / Manage Team**)

#### 8- Motivation:

#### التحفيز

Encouraging تشجيع the Team to work independently

#### 9- Negotiation:

#### التفاوض

Negotiation can build trust and harmony among the team members

#### 10- Ground Rules:

#### قواعد التعامل

(Old in Edition 5 – As Team Charter)

Including all rules should be respected during meetings, communications between team members (found now in chapter 13 / Stakeholders management)

# Chapter 9 – Resource Management

## 4- Develop Team (Executing Process)

### T&T (Interpersonal & Team Skills)

#### 11- Team Building:

#### بناء الفريق

The objective of team-building is helping individual team members **working together effectively**

#### Team Development Stage

#### مراحل تطوير علاقات الفريق بالمشروع

##### 1- **Forming**

مرحلة تشكيل الفريق

Team meets & learns their formal roles / **not open** in this phase

##### 2- **Storming**

مرحلة العصف بين الفريق

Team is **not collaborative** or open / **begins** to address the project work

##### 3- **Norming**

مرحلة بدء التعاون وبناء الثقة بين الفريق

Team begin to work **together** / learn to **trust** each other

##### 4- **Performing**

مرحلة العمل بجدية وفاعلية بين الفريق

Team is **interdependent** & work through issues **smoothly & effectively** / a well-organized unit

##### 5- **Adjourning**

مرحلة انتهاء العمل وتسريح الفريق

Team **completes** the work & **moves** on from the project

# Chapter 9 – Resource Management

## 4- Develop Team (Executing Process)

### OUTPUTS

#### 1- Team Performance Assessments

#### تقارير تقييم أداء الفريق

The evaluation of a team's effectiveness may include indicators such as:

- A- Improvements in skills
- B- Improvements in competencies
- C- Reduced staff turnover rate
- D- Increased team cohesiveness where team members share information and experiences

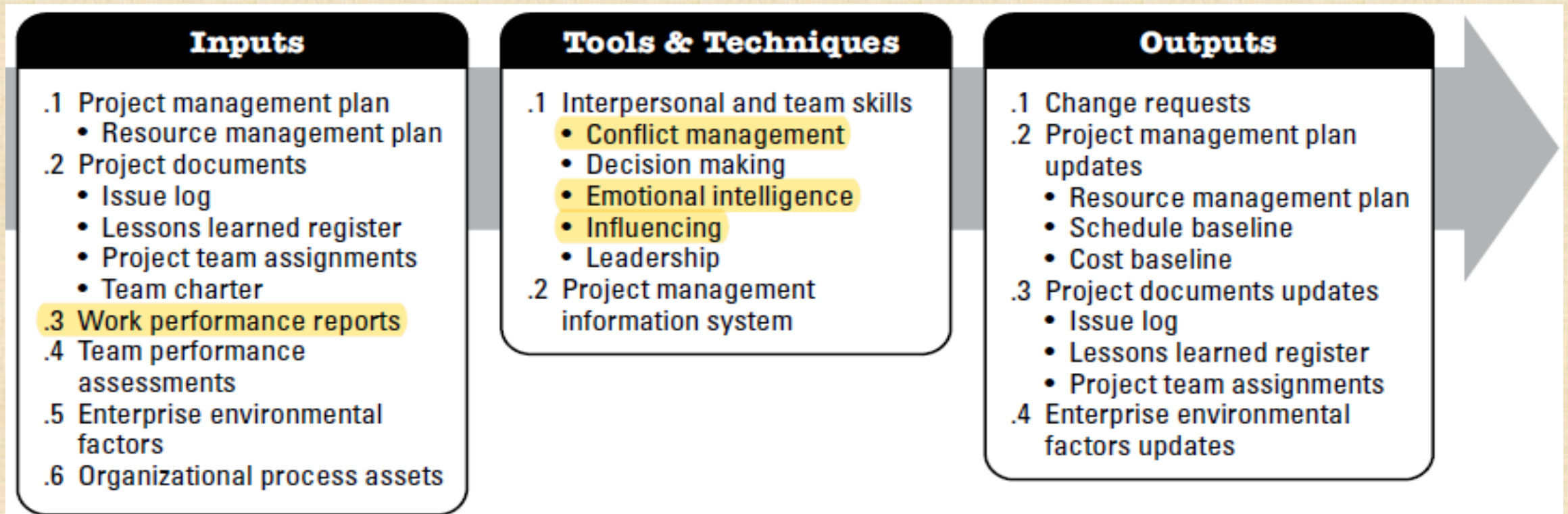
According to the team performance assessments, the Project Manager can decide the following:

- A- The required Extra Training
- B- Any Change to Improve the performance
- C- New Resources more suitable for Project

# Chapter 9 – Resource Management

## 5- Manage Team (Executing Process)

**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**, and resolves issues. This process is **performed throughout the project**



# Chapter 9 – Resource Management

## 5- Manage Team (Executing Process)

### T&T (Interpersonal & Team Skills)

#### 1- Conflict Management:

#### إدارة الخلافات

To Resolve any Conflict through the following FIVE ways:

- A- Problem Solve: (Collaborate)** مناقشة الاطراف وحل المشكلة نهائياً / طويل الامد / افضل الحلول  
cooperative attitude & open dialogue / leads to consensus اجماع & Commitment / win-win situation
- B- Compromise/ Reconcile** ترضية الاطراف وحل المشكلة مؤقتاً / ثاني افضل الحلول  
Satisfaction to all parties in order to temporarily or partially resolve the conflict/ lose-lose situation
- C- Force / Direct** تبني وجهة نظر احد الاطراف فقط دون الاخر/ في حالة الطوارئ  
Pushing one's viewpoint at the expense of others / Authority, Power, Emergency / win-lose situation
- D- Smooth / Accommodate** التركيز علي نقاط الاتفاق بدلاً من الاختلاف / الحفاظ علي العلاقات  
Emphasizing areas of agreement NOT areas of difference / Maintain Harmony & Relationships
- E- Withdraw / Avoid** تأجيل حل المشكلة الي وقت افضل او انتظار شخص اخر يحلها

Postponing the issue to be better prepared or to be Resolved by Others

# Chapter 9 – Resource Management

## 5- Manage Team (Executing Process)

### T&T (Interpersonal & Team Skills)

#### 2- Influencing:

#### التأثير

- Gathering information / Maintaining Mutual Trust ثقة متبادلة
- In Matrix Organization, PM has a little Authority, So he uses the Influencing with All Stakeholders

#### 3- Emotional Intelligence:

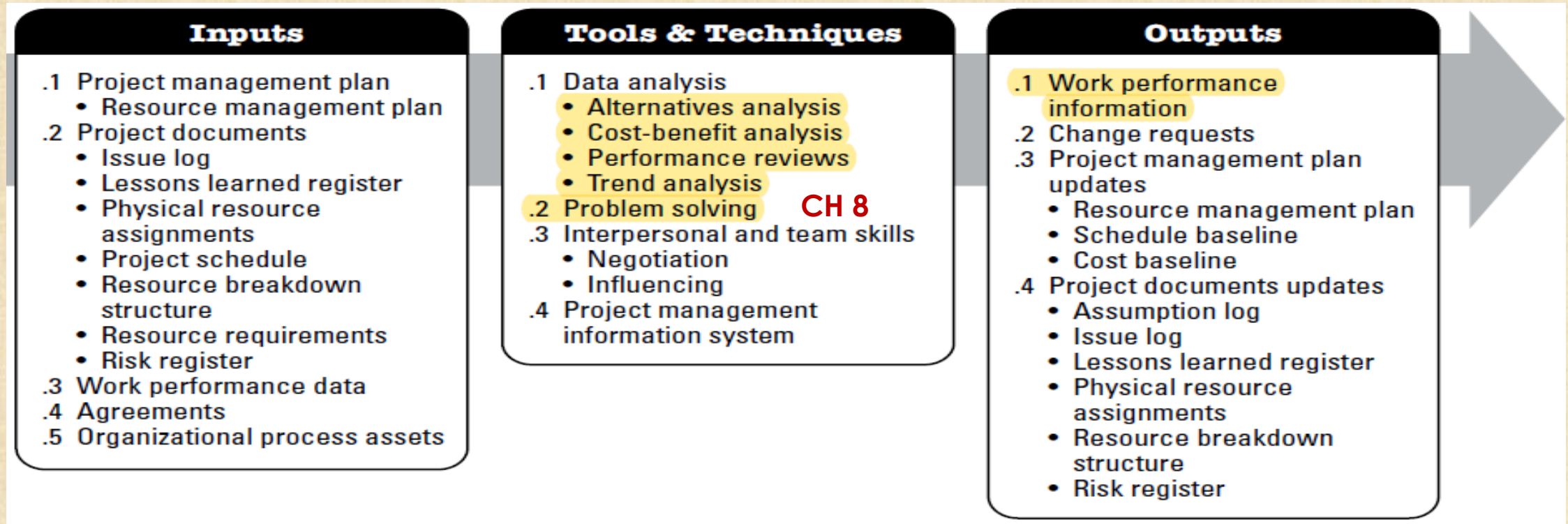
#### الذكاء العاطفي

The team can use emotional intelligence to Reduce Tension & Increase Cooperation

# Chapter 9 – Resource Management

## 6- Control Resources (M&C Process)

Ensuring that the physical resources assigned and allocated to the project are available as planned, as well as monitoring the planned versus actual utilization of resources and taking corrective action as necessary. The key benefit of this process is ensuring that the assigned resources are available to the project at the right time and in the right place and are released **يتم التخلص منها** when no longer needed. This process is performed throughout the project



# Chapter 9 – Resource Management

## 6- Control Resources (M&C Process)

### T&T (Data Analysis)

#### 1- Performance Review:

#### مراجعة الاداء

Compare the actual with the planned resources

مقارنة الموارد الواقعية مع المخطط لها

#### 2- Alternative Analysis:

#### تحليل البدائل

Get & Analysis Alternatives to solve the Variance

طرح حلول وبدائل وتحليلها بناءً علي الخطوة (١)

#### 3- Cost - Benefit Analysis:

#### تحليل المكسب / التكلفة

Get best solution depending on Benefits

اختيار افضل الحلول من الخطوة (٢) وتحليل المكاسب

#### 4- Trend Analysis:

#### تحليل الاتجاه

Examines project performance over time & to determine if performance is improving or Not.

ملاحظة هل الاداء يتحسن ام لا مع مرور الوقت



# Dr. Ahmed AbdelHady - PMP Preparation Course (6<sup>th</sup> Edition)

Chapter	Pages – PMBOK 6 <sup>th</sup> Edition	Status
1- Introduction	1 - 36	Done
2- Projects Environment	37 - 50	Done
3- PM Roles	51 - 68	Done
4- Integration	69 - 128	Done
5- Scope	129 - 172	Done
6- Schedule	173 - 230	Done
7- Cost	231 - 270	Done
8- Quality	271 - 306	Done
9- Resource	307 - 358	Done
10- Communication	359- 394	Not Yet
11- Risk	395- 458	Not Yet
12- Procurement	459- 502	Not Yet
13- Stakeholder	503 - 536	Not Yet