

التاريخ 22 / 09 / 2024

عنوان الدرس اللام وفقنى لامتعب وترضى

Project Management Professional (PMP course)

Lecture No. 1 (Introduction)

Lecture No.	Video No.	Video Name	(min) Video Time	(min) Total Time
1	1	introduction To course	17	126
	2	introduction To PMP Exam	23	
	3	Domain (People)	23	
	4	Domain (Process & Business)	34	
	5	Definitions (Part 1)	27	
	6	Definitions (Part 2)	21	
	7	Questions	27	

Lecture No. 2 (Creating high Performance Team) "People Domain"

Lecture No.	Video No.	Video Name	Video Time (min)	Total Time (min)
2	1	Revision on lecture No. 1	12	118
	2	Definitions (Part 3)	17	
	3	35 Task - 5 Parts	20	
	4	creating high Performance Team (Part 1)	28	
	5	creating high Performance Team (Part 2)	26	
	6	creating high Performance Team (Part 3)	29	
	7	creating high Performance Team (Part 4)	21	
	8	Questions (Part 1)	18	
	9	Questions (Part 2)	20	



Lecture No.5 (Starting The Project) "Process Domain"

Lecture No.	Video No.	Video Name	Video Time (min)	Total Time (min)
	1	starting the Project (Part 1)	22	
	2	starting the Project (Part 2)	24	
	3	starting the Project (Part 3)	14	
5	4	starting the Project (Part 4)	20	147
	5	Starting The Project (Part 5)	23	
	6	Questions (Part 1)	25	
	7	Questions (Part 2)	19	

Lecture No.6 (Doing the work) "Process Domain"

Lecture No.	Video No	Video Name	Video Time (min)	Total Time (min)
	1	Doing the work (Part 1)	28	
	2	Doing the work (Part 2)	22	
	3	Doing the work (Part 3)	24	
6	4	Doing The work (Part 4)	18	118
	5	Question (Part 1)	14	
	6	Question (Part 2)	12	

Lecture No. 7 ( Keeping the Business in mind ) "Business & Environment Domain"

Lecture No.	Video No.	Video Name	Video Time (min)	Total Time (min)
7	1	Keeping the Business in mind (Part 1)	21	126
	2	Keeping The Business in mind (Part 2)	23	
	3	Keeping The Business in mind (Part 3)	29	
	4	Keeping The Business in mind (Part 4)	24	
	5	Questions (Part 1)	14	
	6	Questions (Part 2)	15	

Lecture No. 8 (Revision)

Lecture No.	Video No.	Video Name	Video Time (min)	Total Time (min)
8	1	Keywords (Part 1)	17	130
	2	Keywords (Part 2)	19	
	3	Keywords (Part 3)	14	
	4	Study Plan	16	
	5	Question (Part 1)	18	
	6	Question (Part 2)	20	
	7	Question (Part 3)	13	
	8	Question (Part 4)	13	

ترتيب حل الامتحانات على الموقع

"People Domain"	يتم حل	مكافئة رقم (٣/١٠)
" Agile "	يتم حل	مكافئة رقم (٤)
"Process Domain"	يتم حل	مكافئة رقم (٦/٥)
"Business Domain"	يتم حل	مكافئة رقم (٧)
يتم حل على الأقل ١ امتحان ٥ المواقع ٥ امتحان ١ امتحان ١ امتحان ١ امتحان		مكافئة رقم (٨)

التاريخ 22 / 09 / 2024

عنوان الدرس

# Lecture No. (Introduction) #

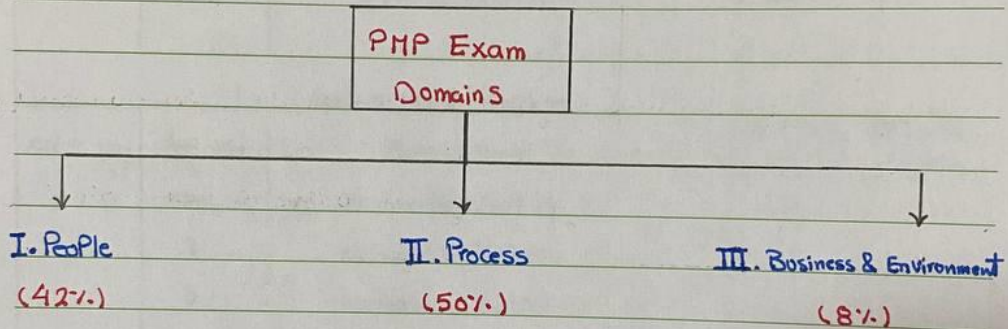
8 Videos = (126 min)

① Video No. 1 (17 min)

introduction TO The course (General info.)

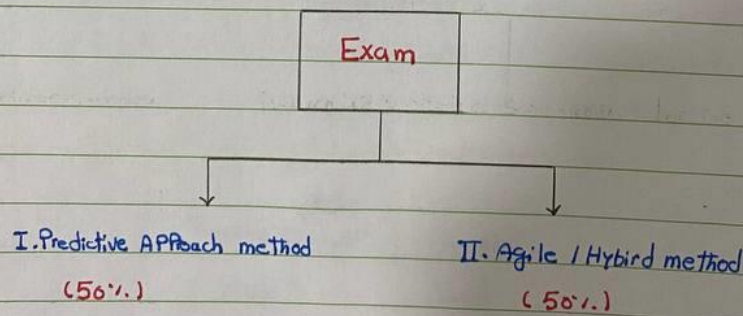
② Video No. 2 (23 min)

introduction TO PMP Exam



• Exam = 180 Questions → (175 Q: scored & 5 Q: not scored)

→ Exam duration = 230 min # (60 Q → 10 min Break → 60 Q → 10 min Break → 60 Q) #



• All questions are MCQ (توحيد) (drop & drag / Complete)

You should Score 75% Above for Success

PM Membership Fees = \$139/year • Exam Fees = \$405 (in Egypt)

PM Book Fees = \$ Free • Re-examination (الاقدر الله) = \$ 275

Annual Renewal = \$60

Exam Location selection

From Home

يقبل الطوارئ مركز الامتحان  
# From certified Academy

Note: بعضنا داخل الأورس التي مدته ٣٥ ساعة مع صرب معتقد يمكن ان  
أقدم على أبل كيشن الـ PMI  
الامتحان أقدر اختياره صياحه خلال الامتحان تاريخ الموافقة على طلب الـ PMI

③ Video No. 3 (28min) & ④ Video No. 4 (34min)

Domain: High level of Knowledge

PMP

Tasks: inside each Domains There are Tasks

Domains

Enablers: Work related To each Task (Tools & Technique)

(People - Process - Business)

Tasks

Enablers

Tools & Techniques

تلك انسان - التعامل مع الأشخاص  
 آهل جزء من الامتحان

Domains

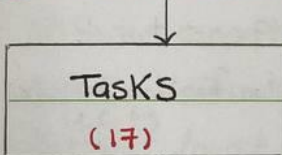
(A) People Domain (42%) meeting - discuss - Analysis - Action

Tasks  
 (14)

- 1 Manage conflict
- 2 lead the Team
- 3 Support Team Performance
- 4 Empower Team members & stakeholders
- 5 Ensure Team members & stakeholders are adequately Trained
- 6 Build a team
- 7 Address and remove: impediments & obstacles & blockers for the Team
- 8 Negotiate Project management
- 9 collaborate with stakeholders
- 10 Build a shared understanding

- \* ⑪ Engage & support virtual team
- \* ⑫ Define the team ground rules
- ⑬ Mentor relevant stakeholder
- \* ⑭ Promote team performance through the application of emotional intelligence.

⑮ Process Domain (55%)



- ↓
- تقديم المشروع بالمهارة قيمة الأعمال
- ① Execute project with urgency required to deliver business value
  - \* ② Manage communication إدارة الاتصالات
  - \* ③ Assess & manage risks تقييم وإدارة المخاطر (قد تكون سيئة وقد تكون جيدة)
  - ④ Engage stakeholders إشراك أصحاب المصلحة
  - \* ⑤ Plan & manage Budget تخطيط وإدارة الميزانية والموارد
  - \* ⑥ Plan & manage schedule تخطيط وإدارة الجدول الزمني
  - ⑦ Plan & manage quality of products & deliverables تخطيط وإدارة جودة المنتجات/التسليمات

- ⑧ Plan & manage scope      تخطيط وإدارة النطاق
- ⑨ integrate Project Planning activities      دمج أنشطة المشروع
- ⑩ Manage Project changes      إدارة تغييرات المشروع
- ⑪ Plan & manage Procurement      تخطيط وإدارة المشتريات
- ⑫ Manage Project artifacts      إدارة وثائق المشروع
- ⑬ Determine appropriate Project methodology / methods      تحديد (طرق) منهجية - ممارسات المشروع
- ⑭ Establish Project governance structure      إنشاء هيكل إدارة المشروع
- ⑮ Manage Project issues      إدارة مشاكل حدثت بالفعل
- ⑯ Ensure Knowledge Transfer for Project continuity      التأكد من وصول المعرفة لاستمرارية المشروع  
تخطيط وإدارة لخلاق المشروع / المرحلة والتحول
- \* ⑰ Plan & manage Project / Phase closure or transition

③ Business & Environment Domain (8%)

Tasks (4)

- ① Plan & manage Project compliance
- ② Evaluate & deliver Projects benefits & value
- ③ Evaluate & address external business environment changes for impact on score
- ④ Support organizational change

⑤ Video No. 5 (27min)

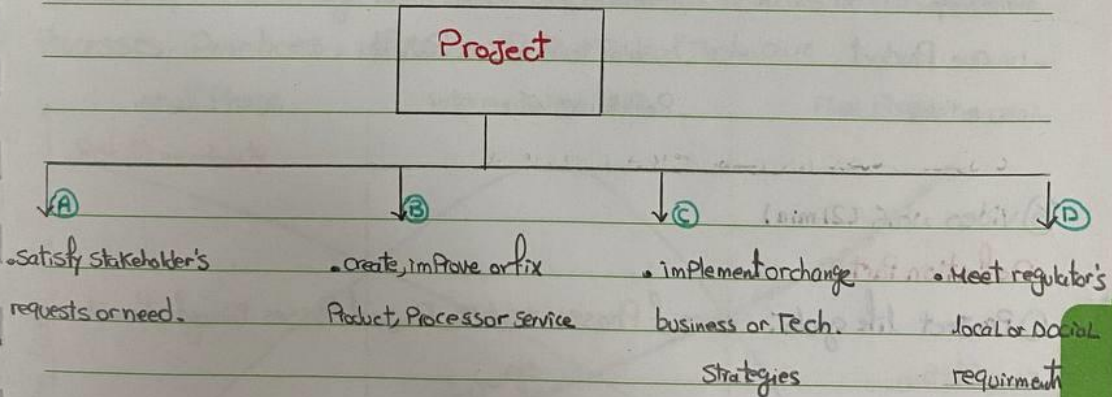
• Definition (Part 1)

① Project: A Temporary endeavor undertaken to create a unique Product, Service or result (start - End dates)

- Project drive changes
- Project Enable business value creation
- Project initiation context

② Project life cycle (5 Phases): Each Project have this cycle.

- ① Project conception & initiation
- ② Project definition & Planning
- ③ Project launch & Execution
- ④ Project Performance & control
- ⑤ Project closure



③ Project management: the application of knowledge, skills, tools & techniques to Project Activities to meet the Project requirements.

Portfolio

↓  
Program↓  
Project

## ④ Project Vs. Program Vs. Portfolio

• **Project**: individual Projects that can be independent or part of the Program  
 they're still considered as part of Portfolio.

• **Program**: A group of related Projects, sub Programs and Program activities managed in coordinated way.

• obtain benefits & control that not obtainable from managing them individually

• **Portfolio**: collections of Projects, Programs & sub Portfolios and operation managed as a group to achieve strategic objective.

• not necessary / directly related

## ⑤ Projects Vs. Operations

- Temporary

- Permanent

- Unique Product

- similar to Previous Product

- innovative

- Repetitive

## ⑥ Video no.6 (21 min)

## • Definition Part 2

① **Project life cycle**: Series of Phases that the Project passes through from its completion.

② **Project Phase**: A collection of logically related Project activities that culminates in the completion of one or more deliverables.

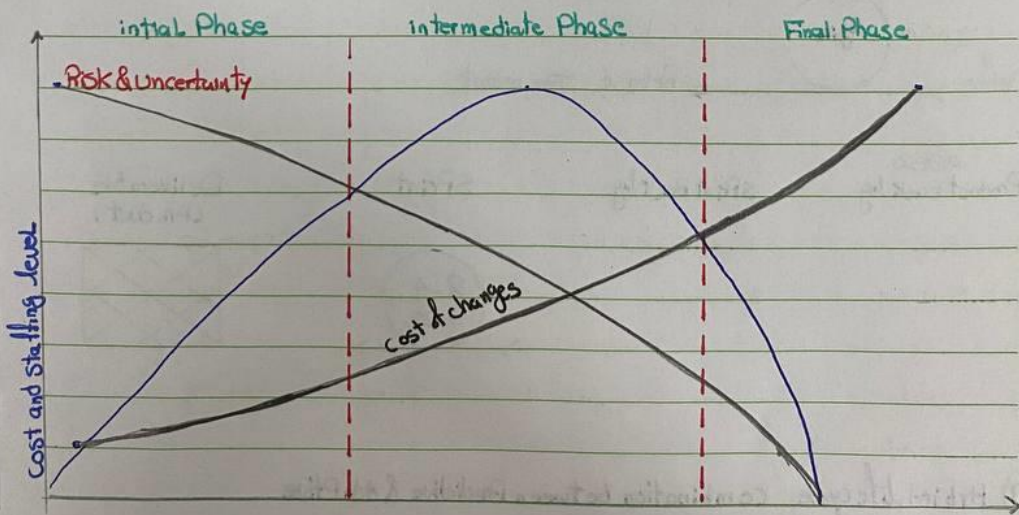
③ **Phase gate:** A review at the end of a Phase in which a decision is made to continue to the next Phase, To continue with modification or to end a Program or Project.

④ **Project management Processes:** A systematic series of activities directed toward causing an end result, where one or more inputs will be acted upon to create one or more outputs.

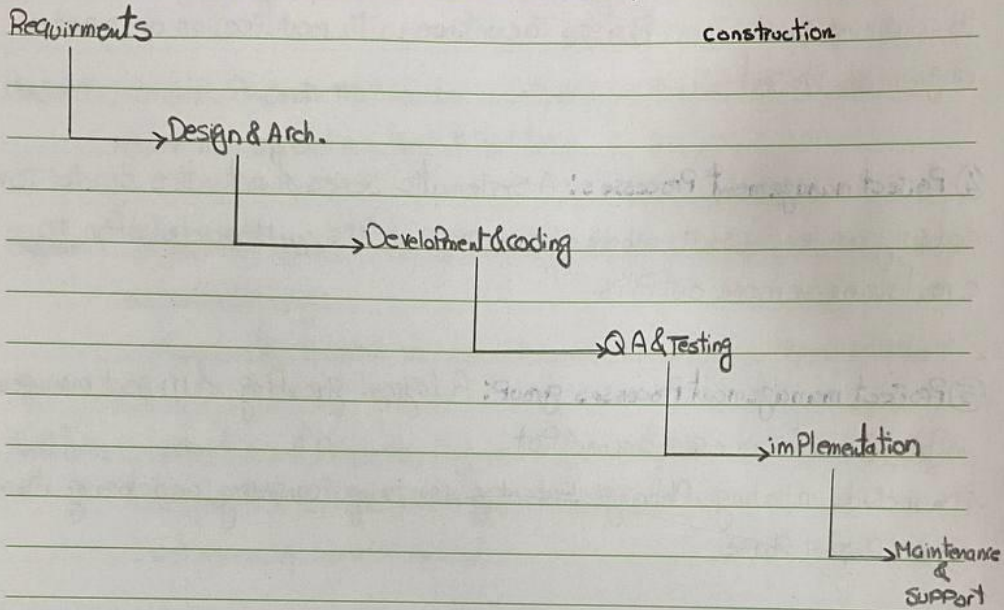
⑤ **Project management Processes group:** A logical grouping of Project management inputs, Tools & Technique and output.

its include initiating, Planning, Executing, Monitoring & controlling and closing its not also a Project Phase

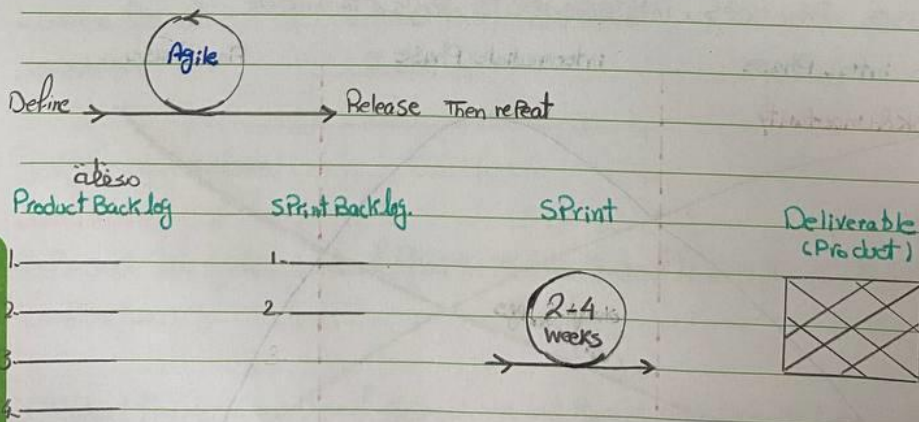
⑥ **Project management Knowledge area:** an identified area of Project management defined by its Knowledge requirements and described in terms of its component Processes, Practices, inputs, outputs, Tools & Technique



7 Predictive life cycle (Traditional / Waterfall) mainly we use this method in our Project



8 Adaptive life cycle (Agile) mainly this method used with software projects



9 Hybrid life cycle combination between Predictive & Adaptive Waterfall + Agile

# Lecture NO. 2 (Creating high Performance Team) #

9 videos (118min)

• Project Phases are ( Five Phases ) :-

① Creating a high Performance Team ( People Domain )

- A. Build a Team      بناء فريق
- B. Define Team ground rules      تأكيد قواعد الفريق الأساسية
- C. Negotiate Project management agreement      التفاوض بشأن اتفاقيات المشروع
- D. Empower Team members and stakeholders      تمكين أعضاء الفريق وأصحاب المصلحة
- E. Train Team members and stakeholders      تدريب أعضاء الفريق وأصحاب المصلحة
- F. Engage & Support virtual Team      إشراك ودعم الفريق الافتراضية
- G. Build a shared understanding about a Project      بناء تفاهم مشترك حول المشروع

② Starting the Project ( Process Domain )

- A. Determine the appropriate Project methods methodology      تحديد نهجية طرق لمشروع مناسبة
- B. Plan and manage scope      تخطيط وإدارة النطاق
- C. Plan and manage schedule      تخطيط وإدارة الجدول الزمني
- D. Plan and manage budget and resources      تخطيط وإدارة الميزانية والمواد
- E. Plan and manage deliverables and quality      تخطيط وإدارة جودة المخرجات والعمليات
- F. Integrate Project Planning activities      دمج أنشطة تخطيط المشروع
- G. Plan and manage Procurement      تخطيط وإدارة المشتريات
- H. Establish Project governance structure      إنشاء هيكل حوكمة المشروع
- I. Plan and manage Project closure      تخطيط وإدارة إغلاق المشروع

③ Doing the work (Process Domain)

- A. Risk assessment and management تقييم وإدارة المخاطر
- B. Execute Project To deliver Business Value تنفيذ المشروع لتقديم قيمة مرتبطة بالأعمال
- C. Manage communication إدارة الاتصالات
- D. Manage stakeholders إدارة أصحاب المصلحة
- E. Create Project artifacts إنشاء عناصر ووثائق المشروع
- F. manage Project changes إدارة تغييرات المشروع
- G. manage Project issue إدارة مشاكل المشروع
- H. Ensure Knowledge Transfer for Project continuity ضمان نقل المعرفة لاستمرارية المشروع

④ Keeping the Team on Track (People Domain)

- A. Lead a team قيادة الفريق
- B. Support Team Performance دعم أداء الفريق
- C. Address and remove impediment معالجة وإزالة العوائق
- D. Manage conflict إدارة النزاعات
- E. collaborate with stakeholders التعاون مع أصحاب المصلحة
- F. Mentor Relevant stakeholders توجيه أصحاب المصلحة
- G. Apply Emotion intelligence To Promote Team Performance تطبيق الذكاء العاطفي

⑤ Keeping The Business in mind (Business Domain)

- A. Manage compliance requirements إدارة متطلبات التوافق
- B. Evaluate and deliver Project Benefits and value تقييم وتقديم منافع المشروع وقيمته
- C. Evaluate and address internal and external Business environment changes تقييم ومعالجة التغييرات
- D. Support organizational change دعم التغيير التنظيمي

## People Domain (42%)

### ① Creating high Performance Team

#### A. Build a Team

- A set of individuals who support the Project manager in performing the work of the Project to achieve its objectives.

#### \* Skills of the Project Team as following.

- conflict management
- cultural awareness
- Decision making.
- Facilitation
- leadership
- Meeting management
- Negotiation
- Networking
- observation
- Servant leadership
- Team Building

\* Stakeholder: An individual, group, or organization that may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a Project, Program, Portfolio.

\* RACI chart: its Responsibility assignment Matrix (RAM)

R: Responsible

A: Accountable

C: Consult

I: Inform statuses

To define the involvement of stakeholders in Project activities

\* Project responsibilities within the team

in Agile Approach: self organizing teams assess the work requirements and determine who will do the work

in Traditional Project management Approach: using work breakdown structure to assign work to team member

B. Define team ground rules

\* Team charter

A document that enables the team to establish its values, agreements, and practices as it performs its work together.

it includes the following:

- Team's shared value
- Team's communications
- How the team makes decisions
- How the team resolves conflicts
- How & when the team meets

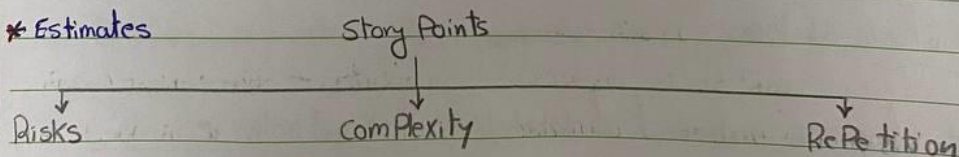
D. Empower team members and stakeholders

\* Team strength

SWOT Analysis

- S: Strength
- O: Opportunities
- W: weakness
- T: Threats

\* Estimates



\* Team Task accountability : Promote visibility & Collaboration.

- Gantt chart

- Kanban board ( TO DO - Doing - Done )

\* Retrospective Meeting الاجتماع الاسترجاعي (Phase gate) (Kill Point)  
- its a time specifically for the team to reflect on its performance and practices, identify and solve problems.

### E. Train Team members & stake holders

\* Training: An activity which team members acquire anew enhanced skills knowledge or attitudes

### F. Engage and support virtual Teams

• Basic needs for a virtual Team.

- Shared Goal - A clear Purpose - clarity on roles & expectation

### G. Build shared understanding about a Project.

\* Project vision

- Product or solution description

- intended users or consumers of solution

- Key desired objectives

- Key features and benefits

\* Project charter ميثاق المشروع

- A document issued by the Project initiator or sponsor that formally authorize the existence of a project and provides the Project manager with the Authority to apply organizational resources to Project Activities

\* Agile ceremonies

Scrum: An agile Framework for developing and sustaining complex Products, with specific roles, events and artifacts

Sprint: A Timeboxed iteration in Scrum.

Iteration = Sprint.

Ceremony	Description
• Sprint Planning (iteration)	- Review the highest Prioritized user stories Key outcomes, Ask questions
• Daily standup meeting (Daily scrum)	- A short 10-15 min held daily
• Sprint review	- review at the end of each iteration with the owner and other stakeholders
• Sprint retrospective	- A meeting of Team members by the Scrum master to review the Team Performance

\* Kickoff meeting في بداية المشروع

Purpose is to establish Project context, Assist in Team formation and Ensure Proper alignment to the overall Project vision

- |                                    |  |
|------------------------------------|--|
| - Vision                           | - Estimation effort  |
| - Team charter                     | - Prioritization Planning  |
| - Assisting the customer / Product | - initial Product Backlog  |
| - User story writing               | - An order list of user requirement that the team maintain for a Product |

⇒ Product Backlog Techniques :- Kano Model - 100 Point Method  
- MOSCOW Analysis

## # Lecture No. 3 (Keeping the Team on Track) #

7 videos (134 min)

## ④ Keeping the Team on Track

## A. Lead the Team

## \* Vision and mission

The Project manager is the visionary leader for the Project.

(Educating - Promoting - Assisting - Removing - Articulating)

## \* Leadership skills

- conflict management
- Decision making
- Meeting management
- Networking
- servant leadership
- cultural Awareness
- Facilitation
- Negotiation

## \* Leadership styles

- Direct: making all decisions
- Consultative: Leader factors in opinions, but make the decisions
- Servant leadership: Leader model desired behaviors (Commonly used in Agile)
- consensus / collaborative: Team operates autonomously
- situational: style changes to fit context and maturity / experience of team

## \* Power / interest grid

Group of stakeholders that their level of authority & interest in the Project.

## \* Power / influence grid

Group of stakeholders that their level of authority & involvement in the Project.



\* Monitor SCOPE

- Scope Baseline: Measure completion of Project Scope against Scope baseline
- Work breakdown structure (WBS) associated with WBS dictionary
- scope evolves from (road map - release Backlog to iteration backlog) : check the user stories and DOD against customer feedback & Product requirement.
- Backlog (including Product Features and Functions and user stories)

\* Evaluate & manage Quality

- Verify deliverables that meets Functional req.
- identify & suggest improvement
- Verify alignment with compliance req.
- Give Feed back on any identified variances
- identify Potential approaches
- Team, Customer, Product owner are responsible for setting and meeting quality

\* Goals and metric

- Measure Performance Tools (SLA "Service Level Agreement" - KPIs - Six sigma - Lean)

\* Team Development stage **FSNPA**

- F: Forming: making initial judgement about the skills & Personal qualities
- S: Storming: Team members begin to assert themselves
- N: Norming: Team begin to work Productively without worrying about Personal acceptance
- P: Performing: Team is working at optimum Productivity
- A: Adjourning: Team members complete their assign work

\* Performing Tracking Tool

Tool	Description
- Scrum / Agile / Kanban board	
- Through out metric	move from one stage to another stage over Time
- Cycle Time	From Plan To complete To deliver
- Quality metric	Track quality of deliverables
- Earned value	Tracking cost & effort Performance
- Bar chart (Gantt)	using Proj. schedule To Track Performance over Time
- Velocity	Measure of Total output from iteration

\* Earned value management (EVM)

A Methodology That combines scope, schedule and resource measurements to assess Project Performance & Progress

\* Control costs مراقبة التكاليف

- PV => Planned value القيمة المخططة
- BAC => Budget At complete ميزانية المشروع (Given in exam)
- AC => Actual cost التكلفة الفعلية
- EV => Earned value القيمة المكتسبة / قيمة الشغل المنجز
- CV => cost variance =  $EV - AC$  فرق التكلفة
- CPI => cost Performance index =  $EV / AC$  مؤشر أداء التكلفة
- EAC => Estimate at completion =  $BAC / CPI$  الميزانية المقدرة
- ETC => Estimate To completion =  $EAC - AC$  تكلفة الأنشطة المتبقية
- VAC => Variance at cost =  $BAC - EAC$  الفرق بين ميزانية المشروع و الميزانية المقدرة
- TCPI => To complete Performance index =  $(BAC - EV) / (BAC - AC)$  مؤشر التكاليف المتبقية
- SV => Schedule Variance =  $EV - PV$  الفرق الزمني

- $SPI \Rightarrow$  Schedule Performance Index =  $EV/PV$  مؤشرا أداء الزمن
- $TOC \Rightarrow$  Time on complete =  $Project\ Time / SPI$  الوقت المقدر لانتهاء المشروع

cost variance & schedule variance

\* Cost Variance

$CV = EV - AC$  where:

- $CV$ : cost Variance
- $EV$ : Earned value قيمة الأعمال التي عكنا
- $AC$ : Actual cost تكلفة الأعمال التي عكنا

if Answer:-

- (+ve)  $\Rightarrow$  under Planned cost أقل من التكلفة المخططة
- (Zero)  $\Rightarrow$  on Planned cost طبقاً للتكلفة المخططة
- (-ve)  $\Rightarrow$  over Planned cost أكثر من التكلفة المخططة

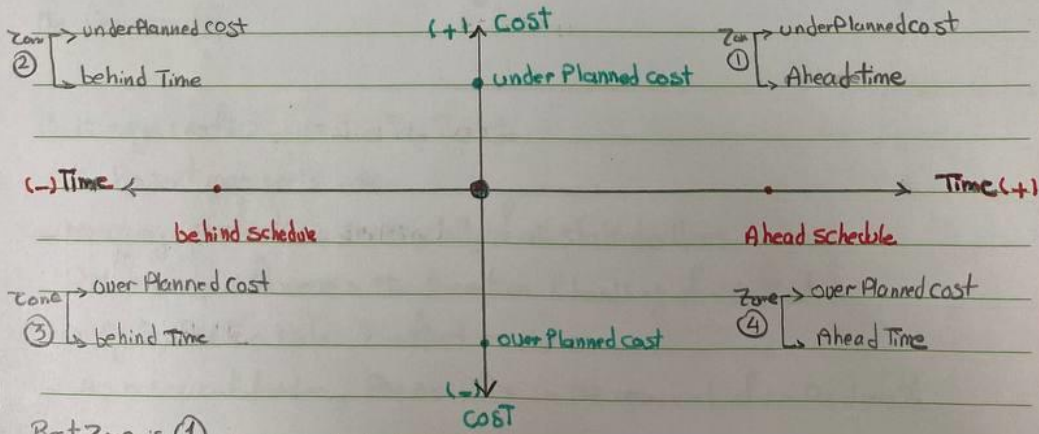
\* Schedule variance

$SV = EV - PV$  where:

- $SV$ : Schedule Variance
- $EV$ : Earned value
- $PV$ : Planned value

if Answer:-

- (+ve)  $\Rightarrow$  Ahead of schedule متقدماً عن البرنامج الزمني
- (Zero)  $\Rightarrow$  on Schedule طبقاً للجدول الزمني
- (-ve)  $\Rightarrow$  behind schedule متأخر عن الجدول الزمني



Best Zone is ①

worst zone is ③

Cost Performance index and Schedule Performance index

\* Cost Performance index  $\rightarrow$  CPI = cost Performance index

$CPI = EV / AC$

where;

$\rightarrow$  EV = Earned value

$\rightarrow$  AC = Actual cost

**if Answer :-**

$CPI > 1 \Rightarrow$  under Planned cost      أقل من التكلفة المخططة

$CPI = 1 \Rightarrow$  on Planned cost      طبقاً للتكلفة المخططة

$CPI < 1 \Rightarrow$  over Planned cost      أعلا من التكلفة المخططة

\* Schedule Performance index  $\rightarrow$  SPI = Schedule Performance index

$SPI = EV / PV$

where;

$\rightarrow$  EV = Earned value

$\rightarrow$  AC = Actual cost

**if Answer :-**

$SPI > 1 \Rightarrow$  Ahead of schedule      متقدماً عن الجدول الزمني

$SPI = 1 \Rightarrow$  on schedule      طبقاً للجدول الزمني

$SPI < 1 \Rightarrow$  behind schedule      متأخراً عن الجدول الزمني

\* Performance report مراجعات

- Information Radiator
- Burn down chart
- Burn up chart
- Earned value management reports
- Variance analysis reports
- Work Performance reports
- Quality reports
- Dashboards
- Task Boards

## C. Address and remove impediments, obstacles &amp; Blockers

- **impediments**: Prevent team from achieving its objectives
- **obstacles**: Should be able to be moved, avoided or overcome
- **Blockers**: Events or conditions that cause stoppage

## \* Daily Standup

A brief, daily collaboration meeting in which the team reviews progress from the previous day.

D. Manage conflict مواجهات

## \* the Project manager's role

- Managing conflict is a responsibility of all stakeholders
- PM heavily influences the direction & handling of conflict
- in Agile, PM facilitates conflict resolution
- As a servant leader, PM assists in the removal of impediments

\* Cause of conflict

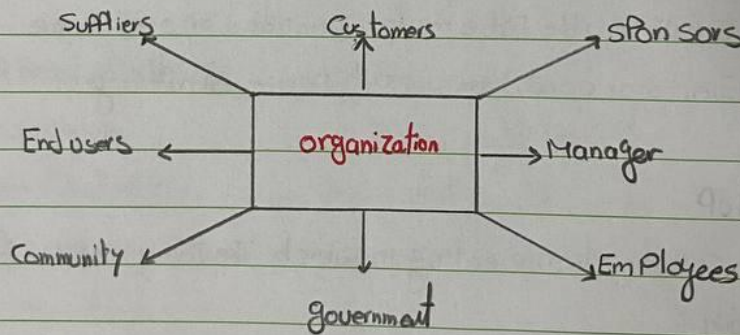
- Competition
- Different in obj, value

\* Conflict Management Approaches

1. Withdraw / Avoid
2. Smooth / Accommodate
3. Compromise / Reconcile
4. Force / Direct
5. Collaborate / Problem solve

E. collaborate with stake holders

\* Project stake holders



\* stake holder register

A Project document including identification, assessment and classification of Project stakeholder

Table

Name	organization	Project role	Major req.	Expectation	influence	Area	internal / external
------	--------------	--------------	------------	-------------	-----------	------	---------------------

### F. Mentor relevant stakeholder

- \* Transformation skills
- \* Determining relevant stakeholders

### G. Apply Emotional intelligence To Promote Team Performance

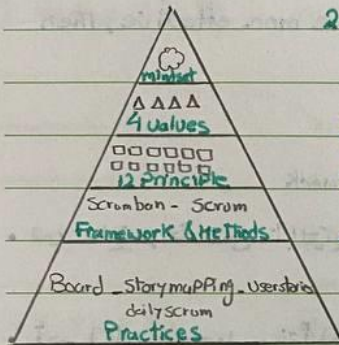
- EI helps you understand your emotions and those of others to help minimize conflict

## Lecture No.4 ( Agile )

6 Videos ( 112 min )

## 1. what is Agile ?

- its a mindset show method for developing Product using short iterations.
- Each iteration is like a short Project in itself
- Produce value early & often.



## 2. what is the four values of Agile ?

1. individuals and interaction **against** Processes and Tools
2. Working software **against** Comprehensive Documentation
3. customer collaboration **against** Contract negotiation
4. Responding to change **against** following a Plan

## Agile Pyramid

## 3. what is the 12 Principles of Agile ?

1. our highest Priority is to satisfy the customer through early & continuous delivery of valuable software
2. Welcome changing requirements even late in development
3. Deliver working software frequently, from a couple of weeks to a couple of months, with preference to the shorter timescale.
4. Business People and deliverables must work together daily through the project
5. Build Projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development Team is face-to-face conversation

7. working software is the Primary measure of Progress.
8. Agile Processes Promote sustainable development. The Sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. continuous attention to Technical excellence and good design enhances agility.
10. Simplicity - The art of maximizing the amount of work not done is essential.
11. The best Arch., requirements, and design emerge from Selforganizing Teams
12. At regular intervals, The Team reflects on How to become more effective, then tunes and adjusts its behavior accordingly.

#### 4. what is Scrum ما هو Scrum one of Agile framework

- هي عملية مرنة تسمح لنا بالتركيز على تقديم أعلى قيمة للأعمال في أقصر وقت
- أحد نماذج العمل وفقاً لمعايير منهجية تطوير البرمجيات آجايل لإدارة تطوير المنتجات

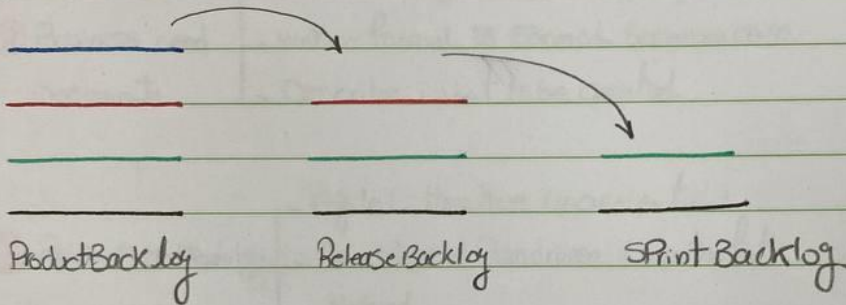
#### 5. Agile Scrum منهجية

- Scrum المنهجية Scrum board
- Product log جدول ككل المتطلبات مع حالة المنتج
- Release الأصدار
- Sprint الجزء المراد تطويره
- Meeting (ceremonies) اجتماع
- Role الأدوار والهام
- Artifact المنتجات
- Daily standup (Scrum) اجتماع يومي لمدة 15 دقيقة لمناقشة ما تم إنجازه
- Sprint review مراجعة الجزء الذي تم تطويره لتقييم العمل
- Scrum of Scrums
- Burndown charts
- Burndown charts

## 6. Scrum meetings

- 1- Planning meeting
- 2- Standup meeting
- 3- Sprint review meeting
- 4- Retrospective meeting

## 7. Product Backlog Vs. Release Backlog Vs Sprint Backlog



## 8. Agile Backlog Reprioritization

- Product owner re-prioritizes the Backlog as stories or req. changes
- the Business value determines the Priority & changes

## 9. Scrum Framework

Ⓐ Artifacts	Ⓑ Roles	Ⓒ Ceremonies
• Scrum Artifacts	• Product owner	• Sprint Planning
• Product Backlog refinement	• Scrum master	• Daily Scrum
• Sprint Backlog	• Development Team	• Sprint review
• Product increment		• Sprint retrospective

## Lecture No. 5 (Starting the Project)

7 videos (147min)

## A. Determining Appropriate Project methodology / methods and Practices

- ① Business case
- Economic feasibility study
  - use to establish the benefits & project components
  - Provides a basis of authorization

- ② Business need documents
- Provides high level deliverables
  - written formal to formal business case
  - Describe what to be created

- ③ Project Methodology
- Agile (iterative / incremental)
  - Predictive / Plan driven / water fall
  - Hybrid

- ④ Progressive elaboration ← تعريف موجز
- The iterative process of increasing the level of detail in a project management plan as greater amount of information & more accurate estimates become available

- ⑤ Rolling wave Planning ← تعريف موجز
- An iterative planning technique in which the work to be accomplished in the near term is planned in detail, while a work further in the future is planned at a higher level

## B. Plan & Manage scope

### ① Project scope

مفهوم

The work performed to deliver a product, service or result with the specified features & functions; Proj. scope may include Product scope

### ② Scope management Plan

مفهوم

A component of a Project management Plan or Program management Plan that describes how the scope will be defined, developed, monitored, controlled and validated.

### ③ Requirements management Plan

مفهوم

A component of a Project or Program management Plan that describes how requirements will be analysed, documented and managed.

### ④ Project requirement

The agreed upon conditions or capabilities of a product, service or outcome that the Project is designed to specify.

تقنية الاستخلاص

### ⑤ Elicitation Techniques

مفهوم

5.1 Document Analysis: To gain Project requirements from current document

5.2 Questionnaires: Written sets of questions designed to accumulate information from many respondents

5.3 interviews: A formal or informal approach to elicit information from stakeholders by talking with them directly

5.4 Focus group: Technique that brings prequalified stakeholder and subject matter experts (SME) to learn their expectations and attitudes about a proposed product, service or result.

5.5 observation: A technique to gain knowledge of a specific job role, task or function to understand and determine project requirements

5.6 Facilitated workshop: organized working sessions held by project manager to determine a project req. and get all stakeholder together to agree on project outcome

5.7 Prototype: a method of obtaining early feedback on requirements by providing a working model of the expected product before building it

5.8 Storyboarding: A prototyping method using visuals / image to illustrate a process or represent a project result.

5.9 Benchmarking: The comparison of actual or planned product / process & practices to those of comparable organization

⑥ Techniques with definitions

6.1 Mind mapping: A technique used to consolidate ideas created through individual brainstorming session into a single map to reflect commonality and differences in understanding and to generate new ideas.

6.2 Affinity diagram: A technique that allow large numbers of ideas to be classified for review and analysis

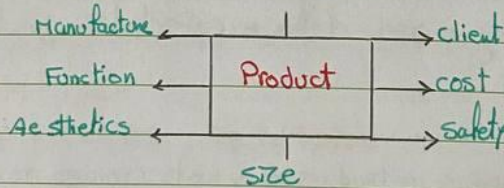
Requirements documentations

Requirements Traceability Matrix

Guide lines to develop Project scope management

Project scope statement

6.3 Product Analysis - A Tool to define scope



6.4 Scope Base line Top To Top

Its the approved version of a scope statement, WBS, and its associated WBS dictionary that can be managed using formal change control procedure and its used as basis for a comparison to actual results

6.5 WBS work breakdown structure مفهوم جيد

A hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables

6.6 WBS dictionary مفهوم جيد

A document that provides detailed deliverable, activity and scheduling information about each component in the work breakdown structure

6.7 Definition & Done (DoD) مفهوم

check list of all the criteria to be met so that a deliverable can be considered ready for customer use

6.8 Definition of ready (DOR) مفهوم

checklist that have all the information the team needs to be able to begin working on it

6.9 Acceptance criteria مفهوم

Set of conditions that required to be met before deliverables are accepted

6.10 validate scope مفهوم

the process of formalizing acceptance of completed project deliverable

## 6.11 iteration review:

the project team shows and demonstrates all the work produced during the iteration with business & other stakeholders

6.12 Variance analysis **تفاوت**

Technique to determine the cause and degree of difference between the Baseline & actual Performance.

6.13 Trend Analysis **توجهات**

Analytic technique that use mathematical models to forecast future outcomes based on historical results

C. Plan & manage budget and resources

1. Analysis Estimating

2. Bottom-up Estimating

3. Parametric Estimating

Estimation Techniques

\* Funding limit reconciliation

Compare variances (gaps) between Funding limits & Planned expenditures

\* Burn rates:

The rate which the Project consumes financial resources, representing negative cash flow (its usually used by agile Projects to budget costs for Planned iterations / Sprint / increments)

\* Budget Estimate:

The estimated costs of individual activities or work Packages, The Project cost Performance is then measured against this cost baseline.

\* **Cost Baseline**: The approved version of the time Phased Project budget, excluding any management reserves.

## D. Plan & manage schedule

### 1. Project schedule:

An output of a schedule model that present linked activities with planned dates, durations, milestones and resources

### 2. Benchmark and Historical data:

Define Activities.

Sequence Activities.

Estimate Activity duration.

Develop schedule.

### 3. Schedule management Plan:

Component of Project or Program management Plan

### 4. Project Activities:

Activities during the course of Project

### 5. Milestone

A significant Point or event in a Project, Program, Portfolio.

### 6. Activity dependency

It's a logical Two relationships of Project

7. <sup>تخطيط</sup> Gantt chart

A Bar chart where activities on Y-Axis & X-Axis

8. <sup>تخطيط</sup> Milestone chart

Provide summary view of a project milestones (start-start) (Finish-start)  
(start-Finish) (Finish-Finish)

9. <sup>تخطيط</sup> Critical path

Sequence of activities that represents the longest path through a project, which determines the shortest possible duration

E. Plan & manage quality of Products & Deliverables

1. Quality

The degree to which a set of inherent characteristics full fill requirements

2. Standard

A document established by an authority, custom or general consent.

3. Regulation

4. Cost of quality

All costs over the life of the project by investment in preventing non conformance

5. Quality Metric

A description of a project or product attribute and how measure it

### 6. Tolerance

- Acceptable variation for quality requirement.

### 7. Quality control Tools

- Data Gathering
- Data Analysis
- Data representation
- Check sheets
- Root cause
- Scatter diagram
- Questionnaires
- Performance

### 8. Performance review

- Technique used to (measure, compare, Analyze)
- Earned Value management
  - Trend Analysis
  - critical Path method

### 9. Root cause analysis

- Analytic Technique used to determine the basic underlying reason
- using gathered data
  - Goal
  - Use PCA Tools - Failure mode S and effects analysis (FMEA - Fish Bone - Pareto Scatter)

### E. integrate Project Planning activities

### G. Plan & manage Procurement

- Bidder conferences
- contract

## \* contract Types

### ① Fixed Price

- Firm Fixed Price (FFP)
- Fixed Price in centive Fee (FPIF)
- Fixed Price with economic Price adjustments (FPEPA)

### ② Cost Reimb

- Cost Plus Fixed Fee (CPFF)
- Cost Plus incentive Fee (CPIF)
- Cost Plus award Fee (CPAF)

### ③ Agile contract

## H. Establish Project governance structure

- ① Project governance : Framework, Functions and Processes that guide Project management activities to creat. unique Product

## I. Plan and manage Project closure

### ① Delivery solutions

1. Planning and Analysis
2. Detailed Design
3. imPlementation or installation
4. Testing
5. Training
6. Handover
7. Support & maintenance

## Lecture No. 6 (Doing the work)

6 Videos (118 min)

## ④ Risk assessment and management

## 1. Risk

An uncertain event or condition that if it occurs, will have a positive or negative on one or more Project objectives.

## 2. Trigger condition

An event or situation that indicates that a risk is about to occur

## 3. Risk management Plan (a part of a Project management)

- Risk strategy
- Methodology
- Roles and responsibilities
- Funding
- Timing
- Contingency reserves
- Risk categories
- Stakeholder risk appetite
- Probability and impact
- Probability and impact matrix

## 4. Risk identifications

## 4.1 Check list Analysis

Developed Based on historical information as a standardized way to identify risks.

## 4.2 Root cause Analysis

examines a problem and seeks to determine the underlying reason or cause of the problem

### 4.3 Assumption and constraint Analysis

explores the validity of the project assumptions within the constraints

### 4.4 SWOT Analysis

Strength - Weaknesses - Opportunity - Threats

### 4.5 Document Analysis

Review Project Plans and related documents to help identify the risk

### 4.6 Prompt lists

a list of risk categories that might help gathering and analyzing risk related to data

### 4.7 Meetings

A special meeting called a risk workshop to focus on identifying risks

### 4.8 Expert Judgement

individual with experience in risk analysis provide appropriate feedback

### 4.9 Types of risks strategies

#### Negative risk strategies

- Escalate
- Avoid
- Transfer
- Mitigate
- Accept

#### Positive risk strategies

- Escalate
- Exploit
- Enhance
- Share
- Accept

4.10

مراجعة

RBS0	RBS1	RBS2
	Technical risks الفنية	
	Management risks الإدارية	
All resources Project's risks	Commercial risks التجارية	
	External risks الخارجية	

### 5. Risk Tolerance

The max. amount of risk and potential impact of that risk occurring that a Project manager or Key stakeholder is willing to take

### 6. Risk appetite

The degree of uncertainty an organization or individuals is willing to accept in anticipation of a reward.

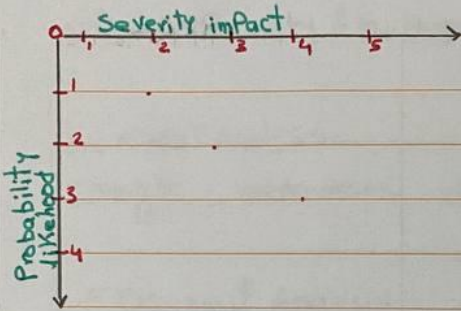
### 7. Qualitative risk analysis

Tech. used to determine the Probability of occurrence and the impact of each identified risk

### 8. Fundamentally risk

Agile Projects include risk in user stories and as a part of Backlog.

### 9. Probability and impact matrix



### 10. Quantitative risk analysis Methods سؤال امتحان

- Simulation
- Sensitivity Analysis
- Decision Tree analysis
- influence diagram
- Expected monetary

### B. Execute Project TO deliver Business value

1. MVP (minimum Value Product): smallest collection of features that can be include

#### 2. Creating a culture of urgency

Represent the voice of the customer To create relevancy and Personalize the value

#### 3- Business value

Financial improvement - new customer - First To market - social - net Quantifiable benefit derived from a business endeavor

## 4. Product road map

Service a high level of visual summary of the Product or the Products of the Project.

## 5. Minimum Business increment

Smallest collection can be added to a Product

## C. Manage communication

1. communication Plan management (جدول مبین هیئتواصل مع اصین و امتی و آزای)

## 2. Types of communications

- Email
- Face to Face
- Fax
- Company website

## 3. Communication Methods

- interactive
- Push (send)
- Pull

## D. Engage stakeholders

1. stakeholder Engagement assess ment matrix

unaware → Resistance → neutral → supportive

## E. Project Artifacts

### 1. Project Artifact

Any document related to the management of a Project, the Project Team will create and maintain any artifacts during the life of the Project, to allow reconstruction of the History of the Project

### 2. Version control

A system that records changes to a file in a way that allows you to retrieve previous changes made to it

### 3. Configuration management system

A collection of Procedures used to Track Project artifacts and monitor & control changes to these artifacts

## F. Manage Project changes

### 1. Change management Plan

A component of the Project management Plan that establishes the change control Board, documents and describe how the change control system will be implemented

### 2. Causes of Project changes

- in accurate initial estimate
- Specific changes
- New regulation
- Missed requirements

### 3- change control system

A set of Procedures that describes how modification to the Project deliverables and documentation are managed and controlled.

### 4- change control board (CCB)

A formally chartered group responsible for reviewing, evaluating, APPROVING, debying or re-scenting changes to the Project.

### 5- change control strategy

A formally chartered group responsible for reviewing, evaluating, APPROVING, debying or re-ecting changes to the Project and for recording an communicat such decisions

### 6. Approved change requests

requests that have been received and approved in accordance with the integrated change control Plan and are ready to be scheduled for implementation. it include : corrective and preventive action

الترتيب من وجهة نظر إدارة تنفيذ المشروع

① change identification

② change documentation

③ Analyzing the impact of change

④ course of Action

⑤ updated related Plans

## G. Manage Project Issue

### 1. Issue

its an action item that the Project Team must address

### 2. Issue log

its used to Track Problems or conflicts that occurs during the life of the Project

## H. Ensure Knowledge Transfer for the Project Continuity

### 1. Explicit Knowledge

Knowledge that can be codified using symbols such as words, numbers, pictures

### 2. Tacit Knowledge

Personal Knowledge that can be difficult to articulate and share such a benefits

### 3. Lesson learned register

A Project document used to record Knowledge gained during a Project so that it can be used in the current Project and entered into the lesson learned

### 4. Lesson learned repository

A store of historical information about lessons learned in Projects

## Lecture No. (7) (Keep the Business in mind)

6 Videos (126 min)

## A. Manage compliance requirement

- its subjected to legal or regulatory constraints
- its must identified, tracked and managed throughout the Project
- might include specific Practices, Privacy laws, handling of sensitive information.

## 1. Risk register

- used to track and manage risks during the Project
- compliance-related risk might include identified risk, a risk owner, impact of related risk and risk responses
- create Testing and Validation Plans To ensure Project deliverables meet compliance requirement
- Recommended to Perform a Summary check of compliance before end of Project
- legal and regulatory compliance for deliverables should be validated on an ongoing basis during the Project.

## 2. Variance Analysis

- its variance related to compliance are critical because of potential impact on usability of the deliverable

## 3. Configuration management system.

- Track and record the Project's deliverable component
- Allow for tracking, versioning, and control.
- compliance information, including proof-validation that each deliverable meets identified compliance requirements
- Handover with the deliverables so customer can continue to track in their own management system.

#### 4. Execution reports

• Project Manager creates the report and it will be include of;

- Project Activities

- Deliverable Status

- Overall Progress

#### 5. Potential threats compliance

- identification of new vulnerabilities

- changes in legal or regulatory requirements

- Errors in testing and validation to confirm compliance

- Errors or bugs in deliverables

- lack of awareness of compliance requirements

#### 6. Non functional requirements

- Availability

- Capacity

- Continuity

- Safety

#### 7. Signs & Alerts and Approvals

- identity stakeholder authorized

- Deliverables meet requirements

- Approval through the Project

- Early warning of threats

- capture variance and course of Actions

### 8. Tolerance

- Levels enables Project manager to effectively manage certain issue without needing to escalate every issue
- Area of Tolerance might include: (Budget - Time - Quality - Non Functional req)

### 9. Escalation Procedure

- when non compliance issue is identified, determine if it's within the Tolerance level the Project manager to handle. → This Procedure should be defined during Project and Risk Planning

### 10. Quality management Plan

- Describes the resource and activities need for the Project team to achieve the necessary quality objectives
- Quality requirements might include:
  1. Quality standards
  2. Quality objectives of the Project
  3. Quality roles and responsibilities
  4. Project deliverables & Processes
  5. Quality control & quality management Plan
  6. Quality Tools
  7. Major Procedure relevant

### 11. Audits

- conducted by a team external to Project, such as internal Audit team or PMO
- used to verify compliance with organizational Policies, Processes and Procedures
- used to verify implementation of work

### 12. QA Tools

- Data Gathering: checklist
- Data Analysis: Alternatives analysis, document analysis, Process analysis or Formal root cause analysis.
- Decision making Technique
- Data representations: Affinity diagrams, cause & effect diagram, flowcharts, Histograms, matrix diagrams, scatter diagram
- Audit reports
- Problem Solving Techniques
- Quality management method: 6-sigma, Plan Do check Act

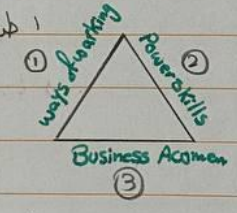
### B. Evaluate and deliver project benefits and value

#### 1. PMI Triangle

مهارات القوة

(A) ways of working (طرق العمل)

(B) Powerskills (Soft skills)



(C) Business Acumen (معرفة الأعمال)

### 2. Strategic Alignment & Business management skills

#### A. Strategic Plan

A high level business document that explains an organization's vision and mission

### 3. Strategic management element and Frame works

Some agile Projects used a goal setting framework such as OKRs (Objectives and Key result) that describes the organization's objective and desired key results

4. Objectives and Key results (سؤال امتحان) # OKR

OKR is a goal setting Framework used by individuals, Teams, and organization to define measurable goal and track their outcomes.

it helps clarify investment ideas and the metric used to measure success

5. Business value (سؤال امتحان)

in formal term that goes beyond economic value and it includes:

- Shareholder value
- Customer value
- Employee Knowledge
- Channel Partner value

6. Value Analysis (سؤال امتحان)

Process of examining each of the components of business value and understanding the cost of each one.

Cost ↑	High cost	High cost
	low value	High value
Low cost	Low cost	High value
	low value	High value
		value →

7. Benefit management Plan (مزايا المشروع)

- A document that describes how and when the benefits of a project will be derived and measured.

Target benefits: The expected tangible and intangible business value to be realized from the project

Strategic Alignment: How the benefits align with the business strategies of the organization

Time Frame: When the benefit (short/long term) will be released

Benefits owner: The person/group who own the record, monitor and report benefits

Metrics: direct/indirect measurement of released benefits

Risks: The risks associated with achieving target benefits

8. Benefit cost Analysis (مزايا - ائحة)

Asystematic approach to estimate strength & weakness

(A) ROI (Return on investment) ايراس ائحة

A financial metric of profitability that measures gain or loss from an investment relative to the amount of money invested

معدل الربح

$$\text{rate of return} = \frac{\text{net Profit}}{\text{cost of investment}} \times 100 = \text{ROI} \times \text{should} > 1$$

ⓑ Present value (PV) The current value of a future sum of money given a specific rate of return.

$$PV = \frac{FV}{(1+r)^n}$$

where; FV: Future value  
r: interest rate  
n: NO. of years

Ⓒ Net Present value (NPV) المكسب الصافي  
Present value of all cash out flow - Present value of all cash in flow

$$NPV = \sum \frac{CF_n}{(1+i)^n} - \text{initial investment}$$

Ⓓ Internal rate of return (IRR)

The interest rate that make npv of all cash flow = Zero

Ⓔ Net Promoter score (NPS)

NPS = % of Promoters - % of Detractors

Ⓕ AB Testing

Ⓖ Decision Tree Analysis

C. Evaluate and address internal & external Business environment changes

A. internal Business environment

B. update Baseline (موجود)

C. Reprioritization backlog.

E. External Business environment.

F. Product owner Duties

G. updated road map (موجود)

- Swimlan road map Provide high level visibility to overall Project task deliverable and milestones

- reflect change in backlog.

D. support organizational change

A. change management

Transitioning from current state to future state diff. from Proj. management

B. change management Framework (RADKAR)

A: Awareness

D: Desire

K: Knowledge

A: Ability

R: Reinforcement

### C. Rollout Plan

### D. Structures organizational

نوع الامتحان

	مركب مشروع مشروع مشروع	مركب مشروع مشروع مشروع	مركب مشروع مشروع مشروع	مركب مشروع مشروع مشروع
	Relationship	Functional	Matrix	Projectized
Team member are loyal to	Functional department	conflicted loyalty	Project	
Team member report to	Functional manager	Both Functional & Proj. manager	Project manager	
Project manager's role	Part-time	Full time	Full time	
Team member's role	part time	PartTime	Full time	
control & Project management	low	Medium	High	

### E. PMO (Project Management office)

A management structure that standardized the project related governance processes & facilitates the sharing of resources, methodologies, tool tied

#### PMO Types

- ① Supportive : : consultative role
- ② controlling : Support & require compliance
- ③ Directive : Take control of the Project