

Project Management Professional



PMP PREPARATION COURSE

6TH EDITION

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Chapter 5

Project Scope Management

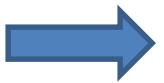
PMBOK-6th Page **129** to **171**

Project Charter

1	Project purpose	غرض المشروع	الموارد المالية مسبقة الاعتماد
2	Measurable project objectives	أهداف المشروع القابلة للقياس	متطلبات الموافقة على المشروع
3	High-level requirements	المتطلبات العامة	قائمة المعندين الرئيسيين
4	High-level project description and deliverables	الخطر الكلي للمشروع	معايير الخروج من المشروع
5	Overall project risk		مدير المشروع المكلف والمسؤولية ومستوى الصلاحية
6	Summary milestone schedule	الجدول الزمني الموجز للمعالم	
7	Preapproved financial resources;		
8	Project approval requirements		
9	Key Stakeholder list		
10	Project exit criteria		
11	Assigned project manager, responsibility, and authority level		
12	Name and authority of the sponsor or other person(s) authorizing the project charter.		

Project Management Plan Contents

- 1. Processes, life cycles, tools and techniques that will be used.**
- 2. Management plan for each knowledge area (Scope, Schedule, cost, Resources , quality, risk, communication, procurement, stakeholder).**
- 3. Performance Measurement Baseline (Scope, Schedule, and cost baseline).**
- 4. Requirement Management Plan**
- 5. Change Management Plan**
- 6. Configuration Management Plan**



- **What is a Product?**
- **What is a Project?**
- **What is Scope?**
- **What is Product Scope ?**
- **What is Project Scope ?**
- **What is Requirements ?**
- **What is Project Scope Statement ?**

What is a Product?



Product Scope



Features and functions that characterize a product

- What is a Product?



- What is a Project?
- What is Scope?
- What is Product Scope ?
- What is Project Scope ?
- What is Requirements ?
- What is Project Scope Statement ?

What is a Project?

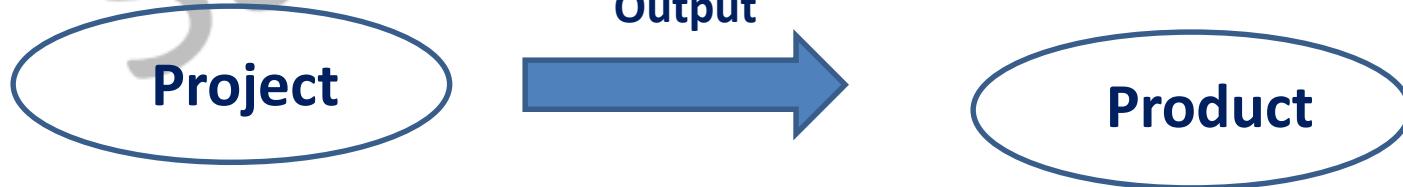
According to the PMBOK Guide, “A project is a **temporary** endeavor undertaken to create a unique **product**, service, or result.”

From the above definition, you can conclude that the nature of the project is **temporary**, and it is undertaken to produce a **unique output**; for example, a **product**, service, or a result.

The first point says the nature of the project is temporary. This means that once you **deliver the deliverables** (output of the project), your project will cease to **exist** because its **objective** has been achieved.

The second point says that the project produces an output. Projects are undertaken to produce **a certain output**.

The output can be **tangible** or **intangible**.

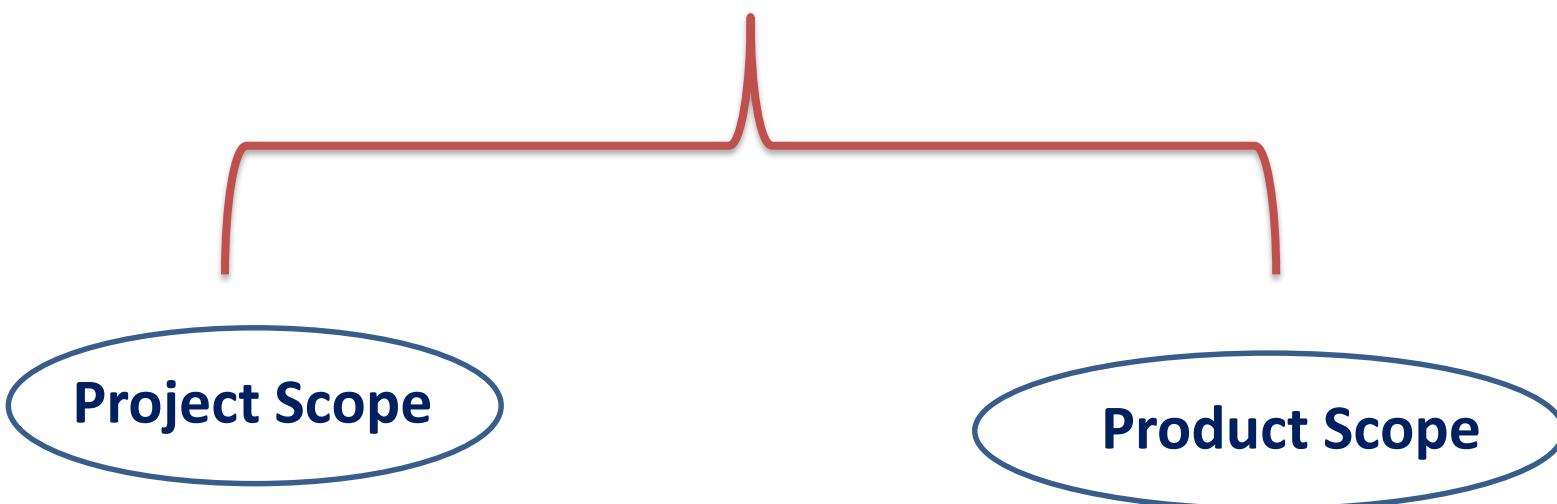


- What is a Product?
 - What is a Project?
-
- What is Scope?
 - What is Product Scope ?
 - What is Project Scope ?
 - What is Requirements ?
 - What is Project Scope Statement ?

What is a Scope ?

Scope can be defined as the range, detail, or a boundary of a term it is attached to. نطاق أو تفصيل أو حدود المصطلح المرتبط به

- { If it is used with the term **product**, it means the **details of the product**,
- if it is attached to **project** then it means the **details of the project**.



- What is a Product?
 - What is a Project?
 - What is Scope?
-
- What is Product Scope ?
 - What is Project Scope ?
 - What is Requirements ?
 - What is Project Scope Statement ?

What is a Product Scope ?

Product scope is about the **product details**. Product scope defines what the product will **look like, how will it work, its features, etc.**

According to the PMBOK Guide 6th edition, product scope is the **features** and **functions** that characterize a product, service or result.

For example, if the product is a **bridge**, the product scope might be its **length, width, load strength, etc.**

If the product is a **cell phone**, its product scope will be its screen size, battery backup, processor speed, camera type, memory, etc.



iPhone 5	
Display Size (Inches)	4
Display Resolution (Pixels)	1136 x 640 pixels, 326 ppi
Connectivity	HSPA+, LTE, Wi-Fi
Processor	A6
RAM	Unknown
Internal Storage	16GB, 32GB, 64GB
Battery Size	Unknown
Camera	8-MP back, HD front cam (720p)
Size	4.9 x 2.3 x 0.3
Weight	4 ounces
Carriers	AT&T, Sprint, Verizon
Starting Price	\$199

What is a Product Scope ?

How to Determine the Product Scope ?

Most of the time, determining the product scope is not a difficult task. If you get a project through a contract, you get the product scope with the **contract** document.

However, if the project is **initiated by your organization**, you will have to define the product scope.

In this case, you **meet** with all the stakeholders to find their expectations and requirements regarding the final product. Once the requirement and expectations are finalized, you get them **signed** by stakeholders and then forward them for approval



Collect Requirements process

- What is a Product?
 - What is a Project?
 - What is Scope?
 - What is Product Scope ?
-
- What is Project Scope ?
 - What is Requirements ?
 - What is Project Scope Statement ?

What is a Project Scope ?

The project scope is the **work** required to create the product. It also defines what is in the scope and whatnot, which helps you avoid scope creep.

According to the PMBOK Guide 6th edition, project scope is the **work performed** to deliver a product, service, or result with the specified features and functions.



- **What is a Product?**

- **What is a Project?**

- **What is Scope?**

- **What is Product Scope ?**

- **What is Project Scope ?**



- **What is Requirements ?**

- **What is Project Scope Statement ?**

What is a Requirements ?

- Using a particular grade of cement could be your **quality requirement**.
- Getting a weekly progress update from your contractor, and making monthly payments could be your project **management requirements**.
- Making the house earth-quake proof could be a **performance requirement**

- **What is a Product?**
- **What is a Project?**
- **What is Scope?**
- **What is Product Scope ?**
- **What is Project Scope ?**
- **What is Requirements ?**
- **What is Project Scope Statement ?**



What is Project Scope Statement ?

The building contractor would receive the necessary clearances (for floor plans, architecture etc.) from the local town council body → **Acceptance criteria**

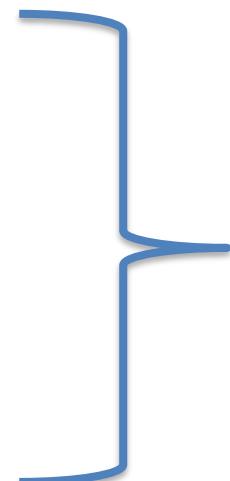
The cost should not exceed \$100K → **Constraint**

The site would receive uninterrupted electricity and water supply during the course of the project → **Assumption**

A roof-top swimming pool is not included → **Exclusion**

Deliverables include the

- House,
- The floor plan,
- Electrical and plumbing diagrams,
- All the approval documents,
- keys for the doors,
- Windows, cupboards and drawers.



Project Scope Statement

Project scope description
(progressively elaborated)

Acceptance criteria

Project deliverables

Project exclusions

Project constraints

Project assumptions

Examples of Product Scope, Project Scope, and Requirements

Let's say you have **a plot of land and you want to build a house on it.**



✓ Product example

The house is the product in this case.

✓ Product Scope example

The house should have 3 storeys, 1000 sq.m. of built-up area, **4 bedrooms with attached baths, 2 living rooms, a kitchen, a basement, and a garage.** The **exteriors should be white.** These are all examples of Product Scope.

✓ Project Scope example

Hiring a building contractor, an architect and an interior designer, acquiring legal permits, estimating the cost, taking bank loan, planning for risks such as rain and storms, **designing the house, buying construction material, constructing the house, doing the interiors, buying furniture, conducting inspections,** conducting regular site visits to track the progress and resolving disputes, making payments and compensations, closing contracts,

✓ Requirements example

In addition to the Product Scope, there could be other requirements for the house. Using a particular grade of cement could be your quality requirement. Making the house earth-quake proof could be a performance requirement. Getting a weekly progress update from your contractor, and making monthly payments could be your project management requirements.

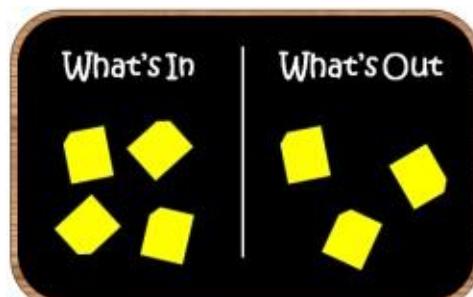
✓ Project Scope Statement example

The building contractor would receive the necessary clearances (for floor plans, architecture etc.) from the local town council body (acceptance criteria). The cost should not exceed \$100K (constraint). The site would receive uninterrupted electricity and water supply during the course of the project (assumption). A roof-top swimming pool is not included (exclusion). Deliverables include the house, the floor plan, electrical and plumbing diagrams, all the approval documents, keys for the doors, windows, cupboards, and drawers.

Project Scope Management (Planning)

► Project Scope Management

- includes the processes required to ensure that the project includes **all the work required**, and **only the work required**, to complete the project successfully
 - إدارة نطاق المشروع تشمل العمليات الالزمة للتأكد من أن المشروع يشمل **جميع الأعمال المطلوبة، والأعمال المطلوبة فقط**، لإكمال المشروع بنجاح.
 - Managing the project scope is primarily concerned with **defining and controlling what is and is not included in the project.**
- ✓ تهتم إدارة نطاق المشروع في المقام الأول بتحديد ما يُدرج وما لا يُدرج في المشروع وضبطه



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Lecture 02 : Project Scope Management

Product Scope

نطاق المنتج.

السمات والوظائف التي يتميز بها منتج أو خدمة أو نتيجة

- The features and functions that characterize a product, service, or result

Ex: 30 floors tower & 1000 beds hospital

➤ Completion of the product scope is measured against the product requirements



Project Scope

نطاق المشروع.

- The work performed to deliver a product, service, or result with the specified features and functions.

العمل الذي يؤدى لتسليم منتج أو خدمة أو نتيجة تتوفّر فيها السمات والوظائف المحددة

Ex:

Planning (PM Plan, Safety Plan, method statements... etc.)

Technical Efforts (Drawings, Material Submittals)

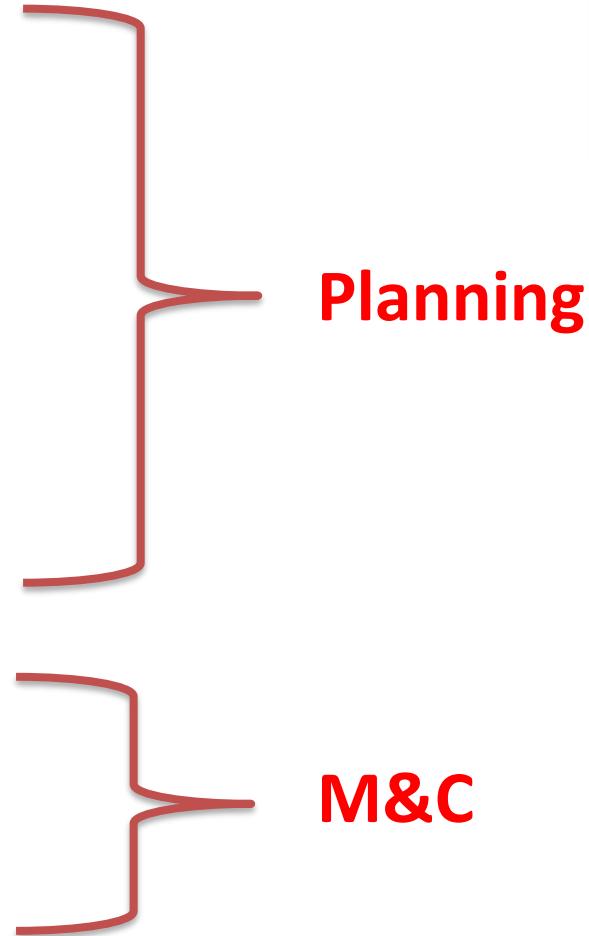
➤ Completion of the project scope is measured against the project management plan



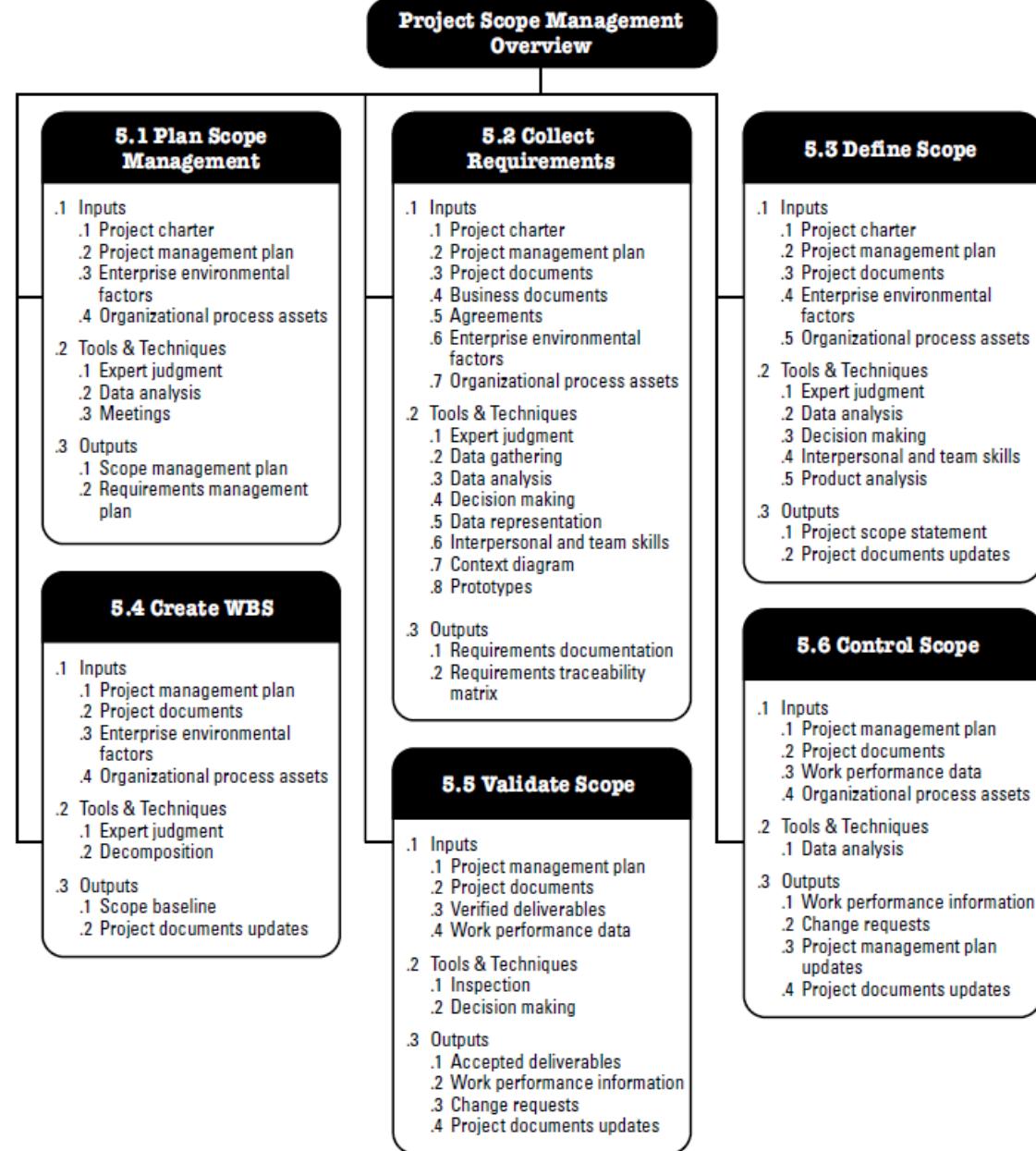
Lecture 02 : Project Scope Management

Contents

- 1 Plan Scope Management
- 2 Collect Requirements
- 3 Define Scope
- 4 Create WBS
- 5 Validate Scope
- 6 Control Scope



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



Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)



Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)

➤ Plan Scope Management is the process of:

- Creating a scope management plan that documents how the project and product scope will be defined, validated, and controlled. • عملية وضع خطة لإدارة النطاق والتي توثق كيفية تحديد نطاق المشروع والمنتج والتحقق منه وضبطه

❖ The key benefit of this process:

- ✓ Provides guidance and direction on how scope will be managed throughout the project.
 - ✓ توفر الإرشاد والتوجيه بشأن كيفية إدارة النطاق على مدار المشروع.



Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)

(1) Plan Scope Management



Input

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



Tools & Techniques

1. Expert judgment
2. Data Analysis
3. Meetings



Outputs

1. Scope management plan
2. Requirements management plan

Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)

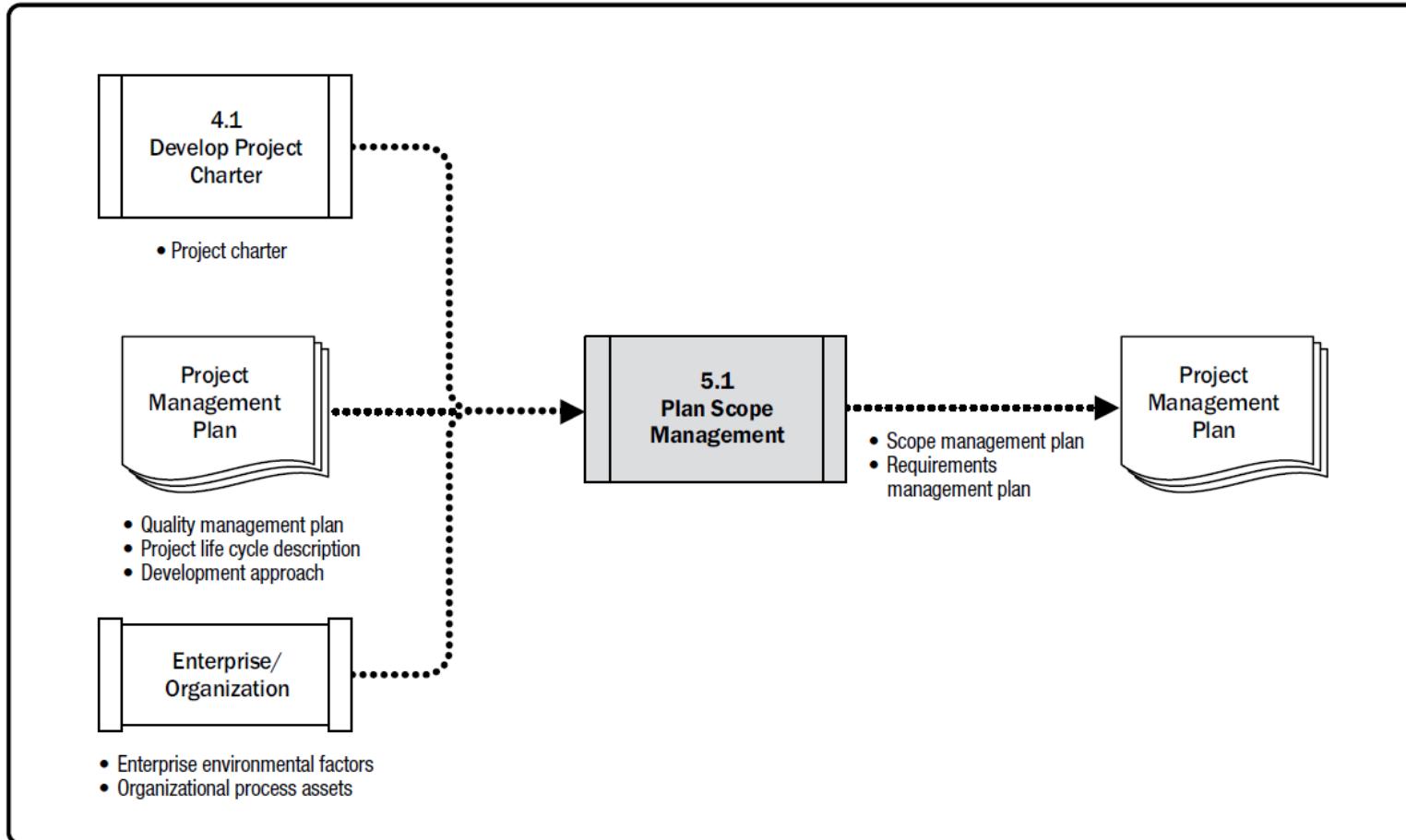


Figure 5-3. Plan Scope Management: Data Flow Diagram

Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)

Inputs

1- Project Charter

- ✓ The project charter documents the project purpose, high-level project description, assumptions, constraints, and high-level requirements that the project is intended to satisfy.
- ✓ يوثق ميثاق المشروع الغرض من المشروع، والوصف العام للمشروع، والافتراضات، والقيود، والمتطلبات العامة التي يهدف المشروع إلى تلبيتها.



Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)

2- Project Management Plan

- ✓ Quality management plan. The way the project and product scope will be managed can be influenced by **how** the organization's quality policy, methodologies, and standards are implemented on the project.
- ✓ Project life cycle description. The project life cycle determines the **series of phases** that a project passes through from its inception to the end of the project.
- ✓ Development approach. The development approach defines whether **waterfall, iterative, adaptive, agile**, or a **hybrid** development approach will be used.

3- Enterprise Environmental Factors

Organization's culture, Infrastructure, Marketplace conditions

4- organizational process assets

Policies and procedures and lessons learned repositories

Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)

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1- EXPERT JUDGMENT

Expertise should be considered from individuals or groups with specialized knowledge or training in the following topics:

- Previous similar projects, and
- Information in the industry, discipline, and application area.

2- DATA ANALYSIS

A data analysis technique that can be used for this process includes but is not limited to **alternatives analysis**.

Various ways of **collecting requirements**, elaborating the project and product scope, **creating the product**, validating the scope, and **controlling the scope** are evaluated.

4- Meeting

Project teams may attend project meetings to develop the scope management plan. Attendees may include the **project manager**, the **project sponsor**, selected project team members, selected **stakeholders**, anyone with responsibility for any of the scope management processes, and others as needed.

Lecture 02 : Project Scope Management

1. Plan Scope Management (Planning)

Outputs

Scope Management Plan (Not the Project Scope)

- Component of the project management plan. إحدى مكونات خطة إدارة المشروع
- How scope will be defined, developed, monitored, controlled, and validated.
- **The components of a scope management plan include:**
 - ✓ Process for preparing a project scope statement. عملية إعداد بيان نطاق المشروع
 - ✓ Process that enables the creation of the WBS from the detailed project scope statement.
 - ✓ Process that establishes how the scope baseline will be approved and maintained.
 - ✓ Process that specifies how formal acceptance of the completed project deliverables will be obtained.

Requirements Management Plan

خطة إدارة المتطلبات

- Component of the project management plan. إحدى مكونات خطة إدارة المشروع
- How project and product requirements will be analyzed, documented, and managed

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

➤ Collect Requirements is the process of:

- Determining, documenting, and managing stakeholder needs and requirements to meet objectives.
- عملية تحديد احتياجات ومتطلبات المعينين بالمشروع، وتوثيقها، وإدارتها لتحقيق أهداف المشروع.

❖ The key benefit of this process:

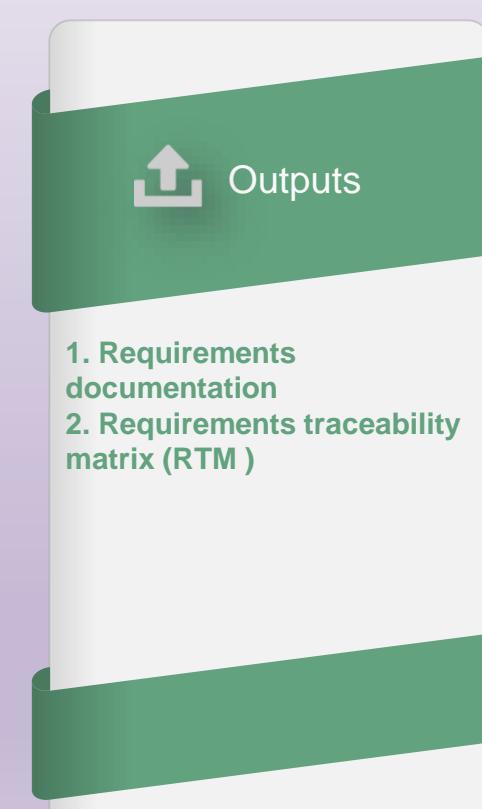
- ✓ Provides the basis for defining the product scope and project scope.
- ✓ توفر الأساس لتحديد نطاق المنتج ونطاق المشروع.



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

(2) Collect Requirements



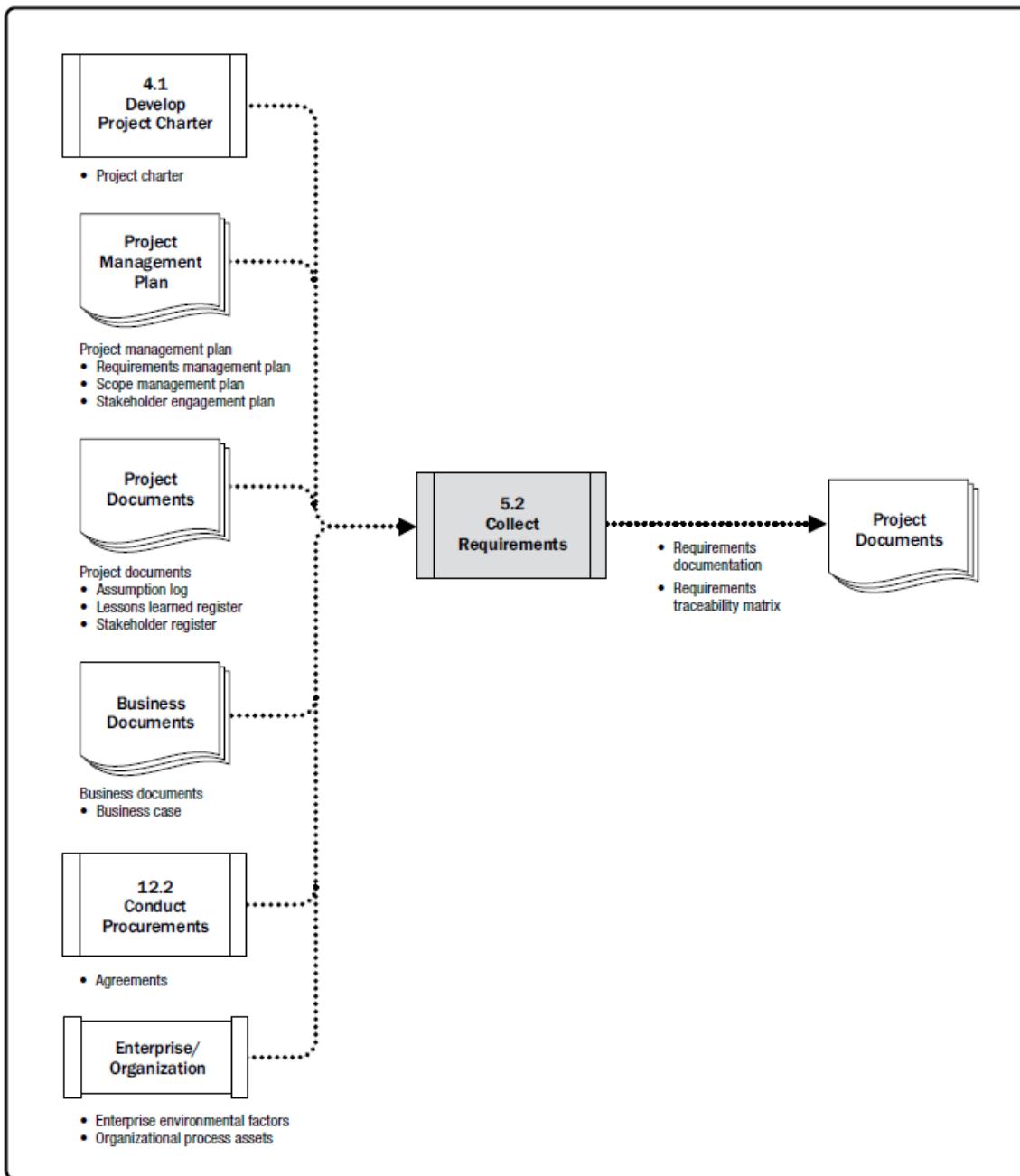


Figure 5-5. Collect Requirements: Data Flow Diagram

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

Inputs

project charter

- ✓ The project charter documents the **high-level project description** and **high-level requirements** that will be used to develop detailed requirements.

✓ يوثق ميثاق المشروع **الوصف العام** للمشروع والمتطلبات العامة التي سوف تستخدم لوضع متطلبات مفصلة.

Project Management Plan

- ✓ **Scope management plan.** Contains information on **how** the project scope will be **defined** and **developed**.
- ✓ **Requirements management plan.** Contains information on **how** project requirements will be **collected**, **analyzed**, and **documented**.
- ✓ **Stakeholder engagement plan.** Used to understand **stakeholder communication requirements** and the **level of stakeholder engagement** in order to **assess** and adapt to the **level of stakeholder participation** in requirements activities.

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

Project documents

مستندات المشروع

- ✓ **Assumption Log.** identified assumptions about the product, project, environment, stakeholders, and other factors that can influence requirements.

يحدد سجل الافتراضات افتراضات حول المنتج، والمشروع، والبيئة، والمعنيين، وغيرها من العوامل التي يمكن أن تؤثر على المتطلبات.

- ✓ **Lessons learned register.** Used to provide information on effective requirements collection techniques

لتوفير معلومات عن الأساليب الفعالة لجمع المتطلبات

- ✓ **Stakeholder Register.** Used to identify stakeholders who can provide information on the requirements. It also captures requirements and expectations that stakeholders have for the project.

يُستخدم في تحديد المعنيين الذين يمكنهم توفير معلومات حول المتطلبات. كما يسجل متطلبات وتوقعات أصحاب المصلحة بالنسبة للمشروع.

Business document

وثائق الأعمال

Business case, which can describe required, desired, and optional criteria for meeting the business needs

وصف المعايير المطلوبة، والمرغوبة، والاختيارية لتلبية احتياجات العمل.

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

Inputs

Agreements

الاتفاقيات

- ✓ Agreements can contain project and product requirements.

✓ الاتفاقيات يمكن أن تتضمن متطلبات المشروع والمنتج.



Enterprise Environmental Factors

- ✓ Organization's culture ثقافة المؤسسة
- ✓ Infrastructure البنية التحتية
- ✓ Marketplace conditions ظروف السوق



Organizational Process Assets

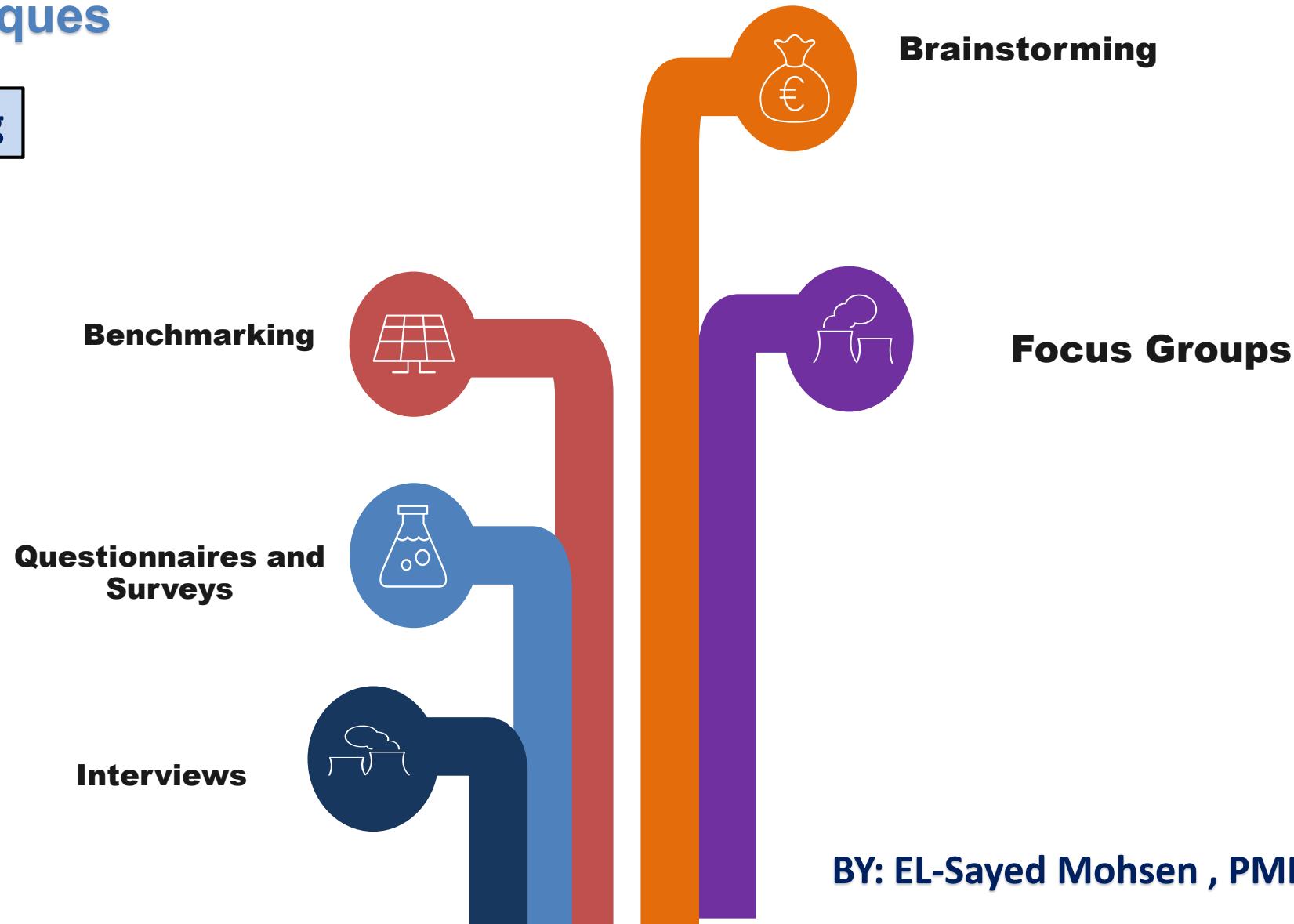
- ✓ Policies and procedures السياسات والإجراءات
- ✓ Historical information and lessons learned from previous projects
المعلومات السابقة والدروس المستفادة من المشاريع السابقة

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

Tools & Techniques

Data Gathering



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Brainstorming

العصف الذهني

- Used to **generate** and collect multiple **ideas** related to project and product requirements

لتوسيع وتجمیع عدة أفکار مرتبطة بمتطلبات المشروع والمنتج



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Interviews

المقابلات

- Elicit information from stakeholders by talking to them directly.
- Interviews are also useful for obtaining **confidential information**

لاستنباط المعلومات من المعينين من خلال التحدث إليهم مباشرة

المقابلات مفيدة في الحصول على معلومات سرية.



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Focus Group

المجموعات التخصصية

- Bring together **prequalified stakeholders** and **subject matter experts** to learn about their expectations.

تجمع بين المعينين المؤهلين مسبقاً والخبراء المتخصصين في المجال للتعرف على توقعاتهم



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Questionnaires and Surveys

الاستبيانات والاستقصاءات.

- ✓ Written sets of questions designed to quickly accumulate information from a large number of respondents.

✓ مجموعات مكتوبة من الأسئلة المصممة لجمع المعلومات سريعاً من عدد كبير من المشاركين



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Benchmarking

مقارنات الأداء.

- ✓ Benchmarking involves comparing actual or planned practices, such as processes and operations, to those of comparable organizations to identify best practices, generate ideas for improvement, and provide a basis for measuring performance. The organizations compared during benchmarking can be internal or external.

مقارنة المنتجات والعمليات والممارسات الفعلية أو المخطط لها بمثيلاتها لدى المؤسسات المماثلة وذلك لتحديد أفضل الممارسات، وتوليد أفكار للتحسين، ووضع أساس لقياس الأداء. ويمكن أن تكون المؤسسات التي خضعت للمقارنة أثناء مقارنات الأداء داخلية أو خارجية



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Data analysis



- **Document Analysis:** تحليل الوثائق

✓ Such as agreements, business plans, current process flows, issue logs, policies, procedures, Specs.

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Decision Making

صنع القرار



1- Voting: التصويت

Unanimity : الإجماع

Everyone agrees on a single course of action



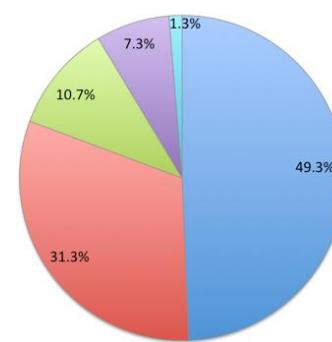
Majority : الأغلبية

Support from more than 50%



Plurality : الأكثرية

The largest group even if no majority



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Decision Making

2- Autocratic decision making

صنع القرار الاستبدادي.

- ✓ One individual takes responsibility for making the decision for the group

✓ يتحمل فرد واحد مسؤولية القرار نيابة عن المجموعة



3- Multicriteria decision analysis

تحليل القرارات متعدد المعايير.

- ✓ Uses a decision matrix to provide a systematic analytical approach for establishing criteria, such as risk levels, uncertainty, and valuation, to evaluate and rank many ideas.

هو أسلوب يستخدم مصفوفة قرارات لتوفير طريقة تحليلية منتظمة لإرساء المعايير، مثل مستويات المخاطر والشك والتقدير لتقدير العديد من الأفكار وترتيبها

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

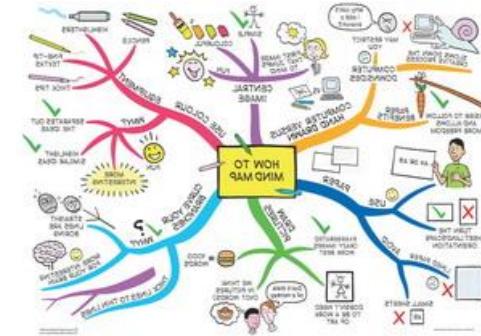
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□ Data representation:

تمثيل البيانات

- **Mind Mapping:** وضع خريطة العقل

- ✓ Ideas created through individual brainstorming sessions are consolidated into a single map to reflect commonality and differences in understanding and to generate new ideas.

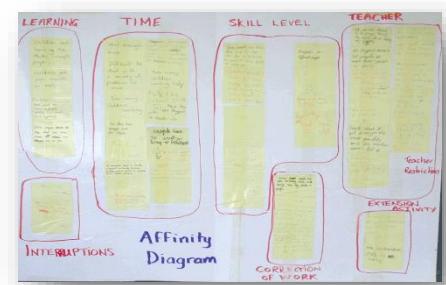


مستخدمة في تجميع الأفكار الناشئة عن طريق جلسات العصف الذهني الفردية في خريطة واحدة لعكس القواسم المشتركة والاختلافات في الفهم وتوليد أفكار جديدة

- **Affinity Diagram:** مخططات التقارب

- ✓ Allow large numbers of ideas to be classified into groups for review and analysis.

✓ تسمح بتصنيف أعداد كبيرة من الأفكار في مجموعات للمراجعة والتحليل



| Placeholder text |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Placeholder text |
| Placeholder text |
| Placeholder text |
| Placeholder text |

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Interpersonal and team skills:

المهارات الشخصية ومهارات فريق العمل

1- Nominal group Technique:

- ✓ Enhances brainstorming with a voting process used to rank the most useful ideas for further brainstorming or for prioritization.



✓ يعزز الأسلوب الجماعي الاسمي العصف الذهني من خلال عملية تصويت تُستخدم في ترتيب الأفكار الأكثر فائدة لمزيد من العصف الذهني أو لتحديد الأولويات.

- يُطرح سؤال أو مشكلة على المجموعة. كل شخص يولد أفكاره أو يدونها في صمت.
- يدون المنسق الأفكار على لوح ورقي قلاب حتى تُسجل جميع الأفكار.
- تُناقش كل فكرة مُسجلة حتى يكون لدى جميع أفراد المجموعة فهماً واضحاً.
- يصوت الأفراد سراً لإعطاء الأولوية للأفكار، وقد يحدث التصويت في عدة جولات لتقليل الأفكار والتركيز عليها.
- وبعد كل جولة، تدون الأصوات ويجري اختيار أعلى الأفكار تصوياً.

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Interpersonal and team skills:

المهارات الشخصية ومهارات فريق العمل



2- Observation/conversation: الملاحظة/الحوار

- ✓ A direct way of viewing individuals in their environment and how they perform their jobs or tasks and carry out processes.

تقديم عمليات الملاحظة والحوار طريقة مباشرة لمشاهدة الأفراد في بيئة عملهم وكيفية أداء وظائفهم أو مهامهم وأثناء تنفيذ العمليات.

- ✓ It is particularly helpful for detailed processes when the people who use the product have difficulty or are reluctant to articulate their requirements

وهي مفيدة على وجه الخصوص مع العمليات المفصلة عندما يواجه الأفراد الذين يستخدمون المنتج صعوبة في الإعراب عن متطلباتهم أو لا يرغبون في ذلك

- ✓ Used to uncover hidden requirements. يكشف المتطلبات المخفية

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Interpersonal and team skills:

3- Facilitation تنسیق الأعمال

- ✓ Bring key stakeholders together to define product requirements.

تجمع المعينين الأساسيين معاً لتحديد متطلبات المنتج.

- ✓ can be used to quickly define cross-functional requirements and reconcile stakeholder differences.

سرعة تحديد المتطلبات متعددة الوظائف وتسوية الخلافات بين المعينين

- ✓ Well-facilitated sessions can build trust, foster relationships, and improve communication among the participants.

تساعد الجلسات المنسقة بطريقة جيدة في بناء الثقة وتعزيز العلاقات وتحسين الاتصال بين المشاركين



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

context diagram

مخطط السياق

Context diagrams visually depict the **product scope** by showing a business system (process, equipment, computer system, etc.), and how people and other systems (actors) interact with it.

توفر مخططات السياق وصفاً مرجئياً لنطاق المنتج من خلال عرض نظام العمل (العمليات، والمعدات، وأنظمة الحاسوب، وغيرها)، وكيفية تفاعل الأشخاص والأنظمة الأخرى (والأطراف الفاعلة معه).

Context diagrams show **inputs** to the business system, the **actor(s)** providing the input, the outputs from the business system, and the **actor(s)** receiving the output.

تعرض مخططات السياق المدخلات المستخدمة في نظام العمل، والطرف الفاعل والأطراف الفاعلة الذي يوفر المدخلات، والمخرجات الناتجة من نظام العمل، والطرف الفاعل (الأطراف الفاعلة) الذي يتلقى المخرجات.

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

context diagram

مخطط السياق



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

TT

Prototypes

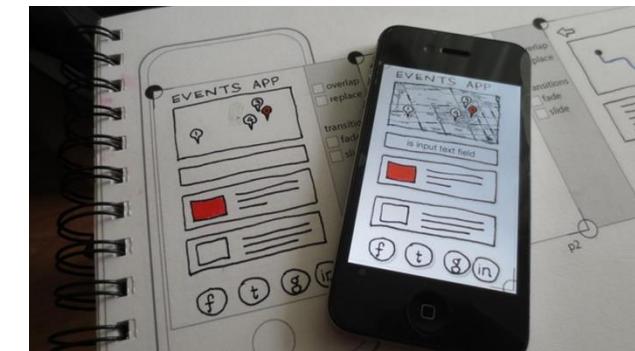
النماذج الأولية

- ✓ Prototyping is a method of **obtaining early feedback** on requirements by providing a model of the expected product before actually building it.

هي طريقة للحصول على تعليقات مبكرة على المتطلبات من خلال توفير نموذج للمنتج المتوقع قبل بنائه

Examples of prototypes:

- Small-scale products المنتجات صغيرة الحجم
- Computer generated 2D and 3D models النماذج ثنائية وثلاثية الأبعاد المترولدة من الحاسوب
- Mock-ups النماذج بالحجم الطبيعي



Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

Outputs

Requirements documentation

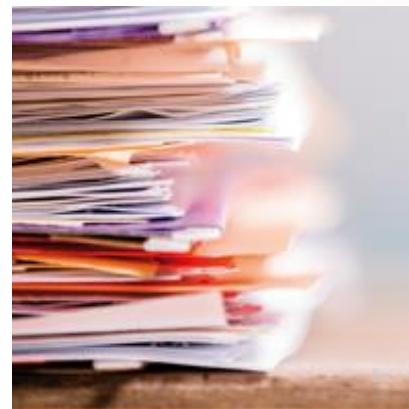
وثائق المتطلبات

- ✓ How individual requirements meet the business need for the project.

كيفية قيام كل متطلب على حدة بتلبية حاجة العمل للمشروع.

- ✓ Before being baselined, requirements need to be unambiguous (measurable and testable), traceable, complete, consistent, and acceptable to key stakeholders

قبل وضع خط مرجعي للمتطلبات، يلزم أن تكون واضحة قابلة للقياس والاختبار وقابلة للتتبع ومكتملة ومتسقة ومقبولة للمعنيين الأساسيين.



Outputs

Requirements documentation

وثائق المتطلبات

- Business requirements.
- Stakeholder requirements.
- Solution requirements.
 - Functional requirements.
 - Nonfunctional requirements.
- Quality requirements.
- Transition and readiness requirements.
- Project requirements.

Outputs

Requirements documentation

وثائق المتطلبات

- ◆ **Business requirements.** These describe the **higher-level needs of the organization** as a whole, such as the business issues or opportunities, and **reasons why a project has been undertaken**.
- ◆ **Stakeholder requirements.** These describe **needs of a stakeholder or stakeholder group**.
- ◆ **Solution requirements.** These describe **features, functions, and characteristics** of the **product, service**, or result that will meet the business and stakeholder requirements. Solution requirements are further grouped into functional and nonfunctional requirements:
 - ■ **Functional requirements.** Functional requirements describe the **behaviors of the product**. Examples include actions, processes, data, and interactions that the product should execute.
 - ■ **Nonfunctional requirements.** Nonfunctional requirements supplement functional requirements and describe the environmental conditions or qualities required for the product to be effective. Examples include: reliability, security, performance, safety, level of service, supportability, retention/purge, etc.
- ◆ **Transition and readiness requirements.** These describe temporary capabilities, such as data conversion and training requirements, needed to transition from the current as-is state to the desired future state.
- ◆ **Project requirements.** These describe the actions, processes, or other conditions the project needs to meet. Examples include **milestone dates, contractual obligations, constraints**, etc.
- ◆ **Quality requirements.** These capture any **condition or criteria** needed to **validate the successful completion of a project deliverable** or fulfillment of other project requirements. Examples include tests, certifications, validations, etc.

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

Outputs

Requirements Traceability Matrix

مصفوفة تتبع المتطلبات

- ✓ Is a grid that links product **requirements** from their origin to the **deliverables** that satisfy them.

عبارة عن شبكة تربط متطلبات المنتج من مصدرها الأصلي بالتسليمات التي تحقق تلك المتطلبات.

- ✓ Helps ensure that each requirement adds business value by linking it to the business and project objectives.
ويساعد تنفيذ مصفوفة تتبع المتطلبات في ضمان أن كل متطلب يضيف قيمة عمل من خلال ربطه بأهداف العمل والمشروع
- ✓ It provides a means to track requirements throughout the project life cycle,
- ✓ Ensure that requirements approved in the requirements documentation are delivered at the end of the project
- ✓ Provides a structure for managing changes to the product scope
توفر هيكلًا لإدارة التغييرات التي تطأ على نطاق المنتج.

Lecture 02 : Project Scope Management

2. Collect Requirements (Planning)

Outputs

Requirements Traceability Matrix

مصفوفة تتبع المتطلبات

Requirements Traceability Matrix								
Project Name:								
Cost Center:								
Project Description:								
ID	Associate ID	Requirements Description	Business Needs, Opportunities, Goals, Objectives	Project Objectives	WBS Deliverables	Product Design	Product Development	Test Cases
001	1.0							
	1.1							
	1.2							
	1.2.1							
002	2.0							
	2.1							
	2.1.1							
003	3.0							
	3.1							
	3.2							
004	4.0							
005	5.0							

Lecture 02 : Project Scope Management

3. Define Scope (Planning)

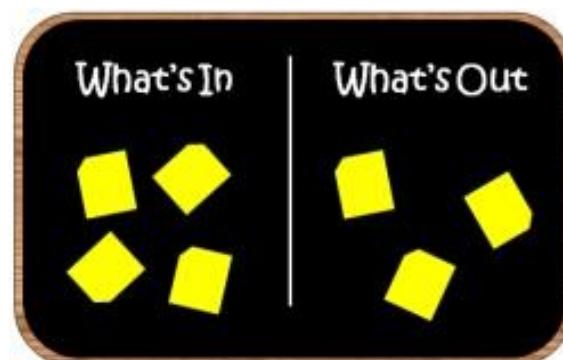


Lecture 02 : Project Scope Management

3. Define Scope (Planning)

➤ **Define Scope is the process of :**

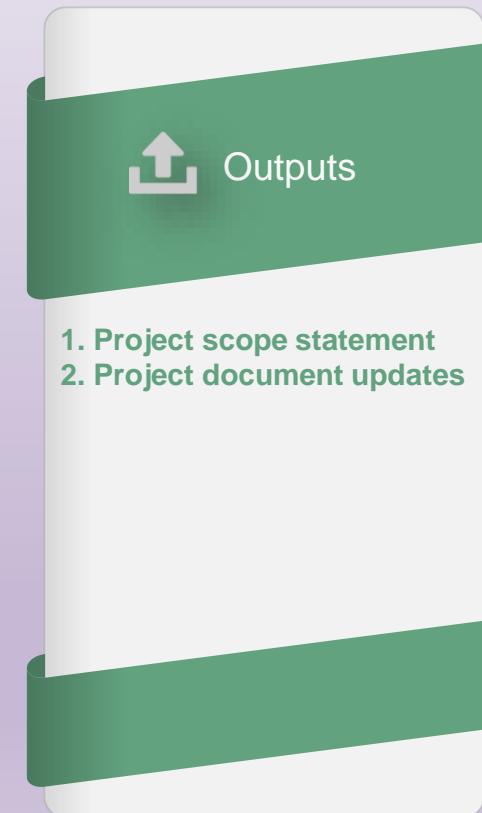
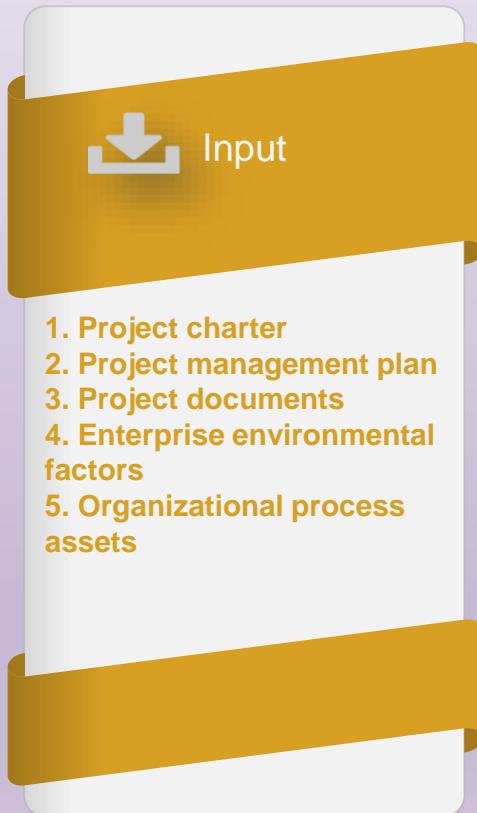
- Developing a detailed description of the project and product.
 - عملية وضع وصف مُفصّل للمشروع والمنتج
- ❖ **The key benefit of this process:**
 - ✓ Describes the product, service, or result boundaries and acceptance criteria
 - ✓ توضّح حدود المنتج أو الخدمة أو النتيجة ومعايير القبول.



Lecture 02 : Project Scope Management

3. Define Scope (Planning)

(3) Define Scope



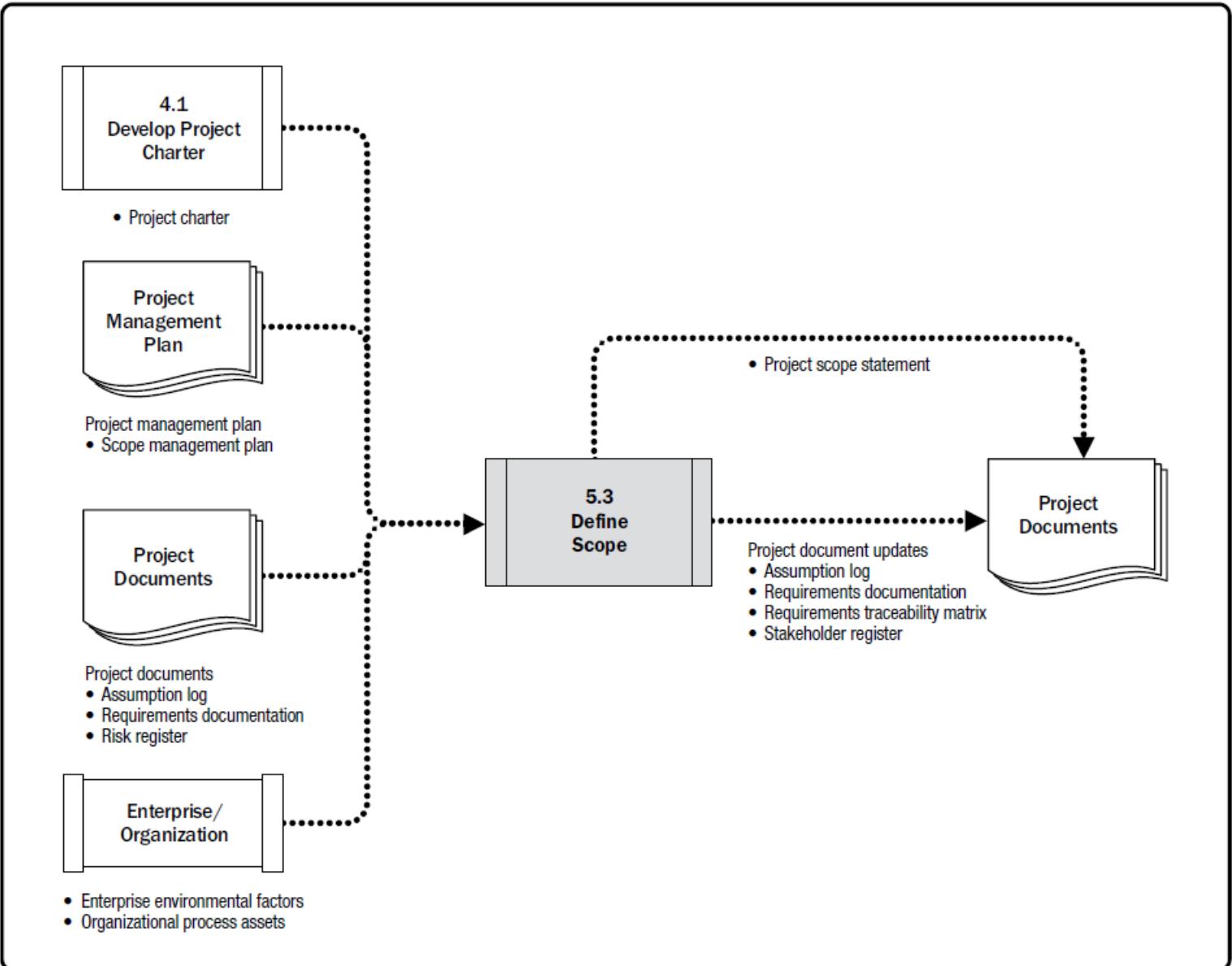


Figure 5-9. Define Scope: Data Flow Diagram

Lecture 02 : Project Scope Management

3. Define Scope (Planning)

Inputs

project charter

- ✓ Provides the high-level project description, product characteristics, and approval requirements

Project management plan

- ✓ Scope management plan which documents how the project scope will be defined, validated, and controlled.

Project documents

- ✓ Assumption log
- ✓ Requirements documentation
- ✓ Risk register

Lecture 02 : Project Scope Management

3. Define Scope (Planning)

TT

Data analysis

- **Alternatives analysis:**
- ✓ used to evaluate ways to meet the requirements and the objectives identified in the charter.

TT

Interpersonal and team skills

لتقييم طرق تلبية المتطلبات والأهداف المحددة في الميثاق

▪ **Facilitation:** تنسيق الأعمال

- ✓ Used in workshops and working sessions with **key stakeholders** who have a variety of expectations or fields of expertise.

يستخدم تنسيق الأعمال في ورش العمل وجلسات العمل مع المعينين الرئисين الذين لديهم مجموعة متنوعة من التوقعات أو مجالات الخبرة.

- ✓ The goal is to reach a cross-functional and common understanding of the project deliverables and project

الهدف هو التوصل إلى تفاهم متعدد الوظائف ومشترك لتسليمات المشروع

Lecture 02 : Project Scope Management

3. Define Scope (Planning)

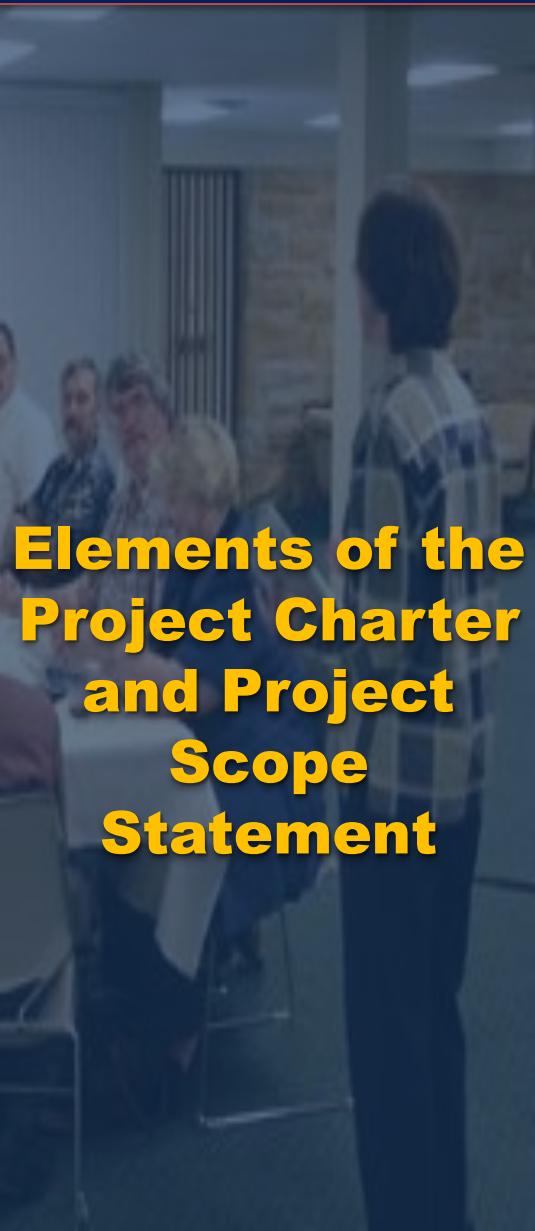
Define Scope Outputs

Project Scope Statement

- **Project scope description** (Product characteristics)
- **Acceptance criteria** (Set of conditions that is required to be met before deliverables are accepted) .
- **Project deliverables** (Product + Project management work)
- **Project exclusions** (Out of scope)
- **Project constraints** Such as imposed dates, predefined budget
- **Project assumptions** We will not need engineering department approval before we start the activity.

Lecture 02 : Project Scope Management

3. Define Scope (Planning)



Project Charter

- Project Purpose or justification
- Measurable project objectives and related success criteria
- High level requirements
- High level project description
- High level risks
- Summary milestone schedule
- Shareholder list
- Project approval requirement

Project Scope Statement

- Project scope description
- Acceptance criteria
- Project deliverables
- Project exclusions
- Project constraints
- Project assumptions

Lecture 02 : Project Scope Management

4. Create Work Breakdown Structure (Planning)



Lecture 02 : Project Scope Management

4. Create Work Breakdown Structure (Planning)

➤ Create WBS is the process of :

- Subdividing project deliverables and project work into smaller, more manageable components.
- عملية تقسيم فرعي لتسليمات المشروع وأعمال المشروع إلى مكونات أصغر وأكثر قابلية للإدارة.

❖ The key benefit of this process:

- ✓ Provides a framework of what has to be delivered.
- ✓ توفر إطار عمل لما ينبغي تسليمه.

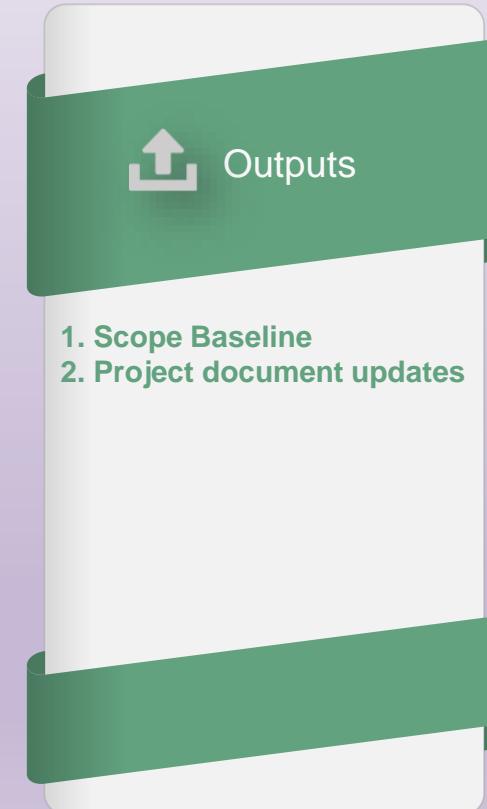


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Lecture 02 : Project Scope Management

4. Create Work Breakdown Structure (Planning)

(4) Create WBS



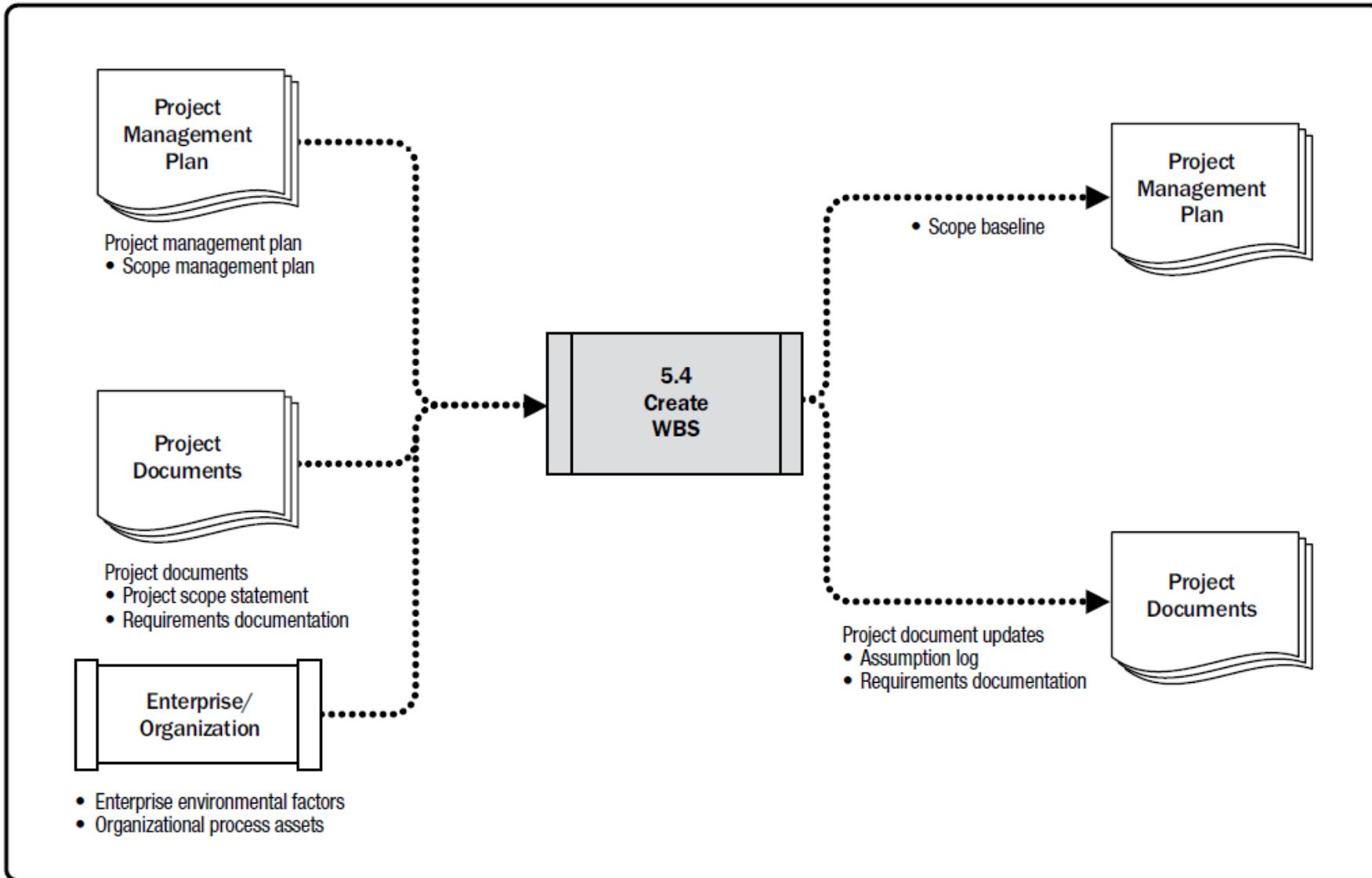


Figure 5-11. Create WBS: Data Flow Diagram

Lecture 02 : Project Scope Management

4. Create Work Breakdown Structure (Planning)

➤ Notes

- The WBS is 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.
- The WBS organizes and defines the total scope of the project and represents the work specified in the current approved **project scope statement**.
- Lowest level of WBS components, which are called **work packages**.

Lecture 02 : Project Scope Management

4. Create Work Breakdown Structure (Planning)

TT

Decomposition

التجزئة

- Is a technique used for **dividing** and **subdividing** the project scope and project deliverables into **smaller**, more manageable parts. يستخدم في التقسيم والتقسيم الفرعي لنطاق المشروع وتسلیماته إلى أجزاء أصغر وأجزاء أكثر قابلية للإدارة.
- The **work package** level is the **lowest level** in the **WBS** that the cost and the durations can be **estimated** and managed.

حزمة العمل هي العمل المحدد عند أدنى مستوى من هيكل تجزئة العمل والذي يمكن تقييم وإدارة تكلفته ومدته

Lecture 02 : Project Scope Management

4. Create Work Breakdown Structure (Planning)

SCOPE BASELINE

The scope baseline is the approved version of :

- a scope statement,
- WBS,
- WBS dictionary

Project scope statement.

The project scope statement includes the **description of the project scope**, **major deliverables**, **assumptions**, and **constraints**

WBS.

- ✓ The WBS is 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.
- ✓ The **lowest** level of the WBS is a work package.



Create WBS Outputs

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4. Create Work Breakdown Structure (Planning)

WBS Example



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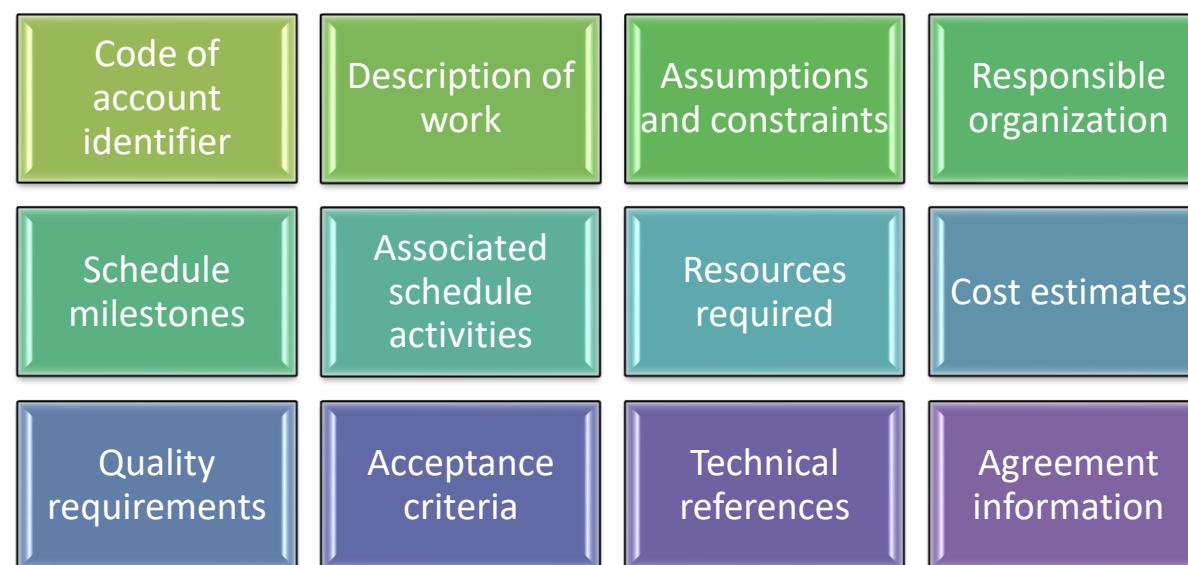
Lecture 02 : Project Scope Management

4. Create Work Breakdown Structure (Planning)

Create WBS Outputs

WBS Dictionary قاموس هيكل تجزئة العمل

The WBS dictionary is a document that provides **detailed** deliverable, activity, and scheduling information about **each component** in the WBS



WBS Dictionary

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4. Create Work Breakdown Structure (Planning)

WBS Dictionary

Lecture 02 : Project Scope Management

5. Validate Scope (M/C)



Lecture 02 : Project Scope Management

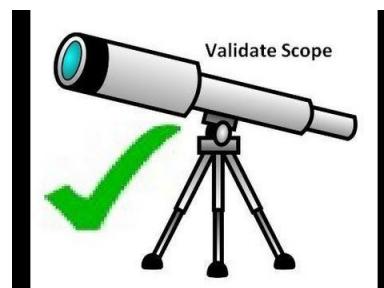
5. Validate Scope (M/C)

➤ **Validate Scope is the process of :**

- Formalizing acceptance of the completed project deliverables.
- عملية إضفاء صفة رسمية على قبول تسليمات المشروع المكتملة.

❖ **The key benefit of this process:**

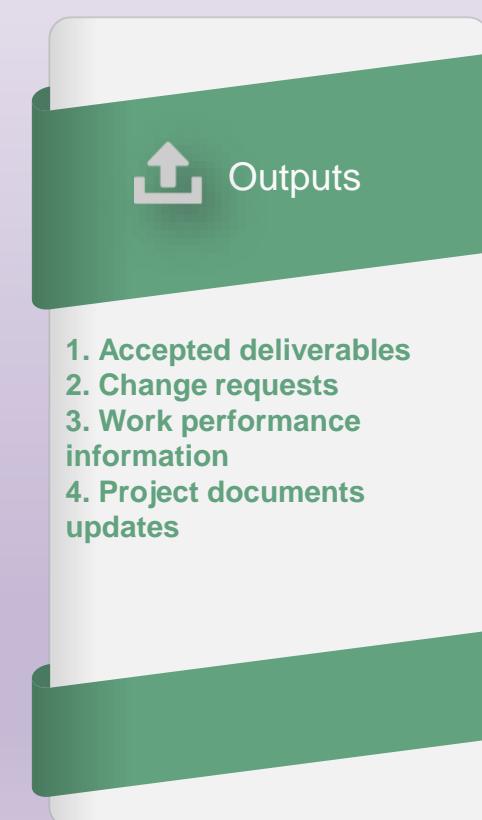
- ✓ Increases the probability of final product, service, or result acceptance by validating each deliverable.
- ✓ تزيد من احتمالية قبول المنتج النهائي أو الخدمة أو قبول النتيجة عن طريق التحقق من صحة كل تسليم.



Lecture 02 : Project Scope Management

5. Validate Scope (M/C)

(5) Validate Scope



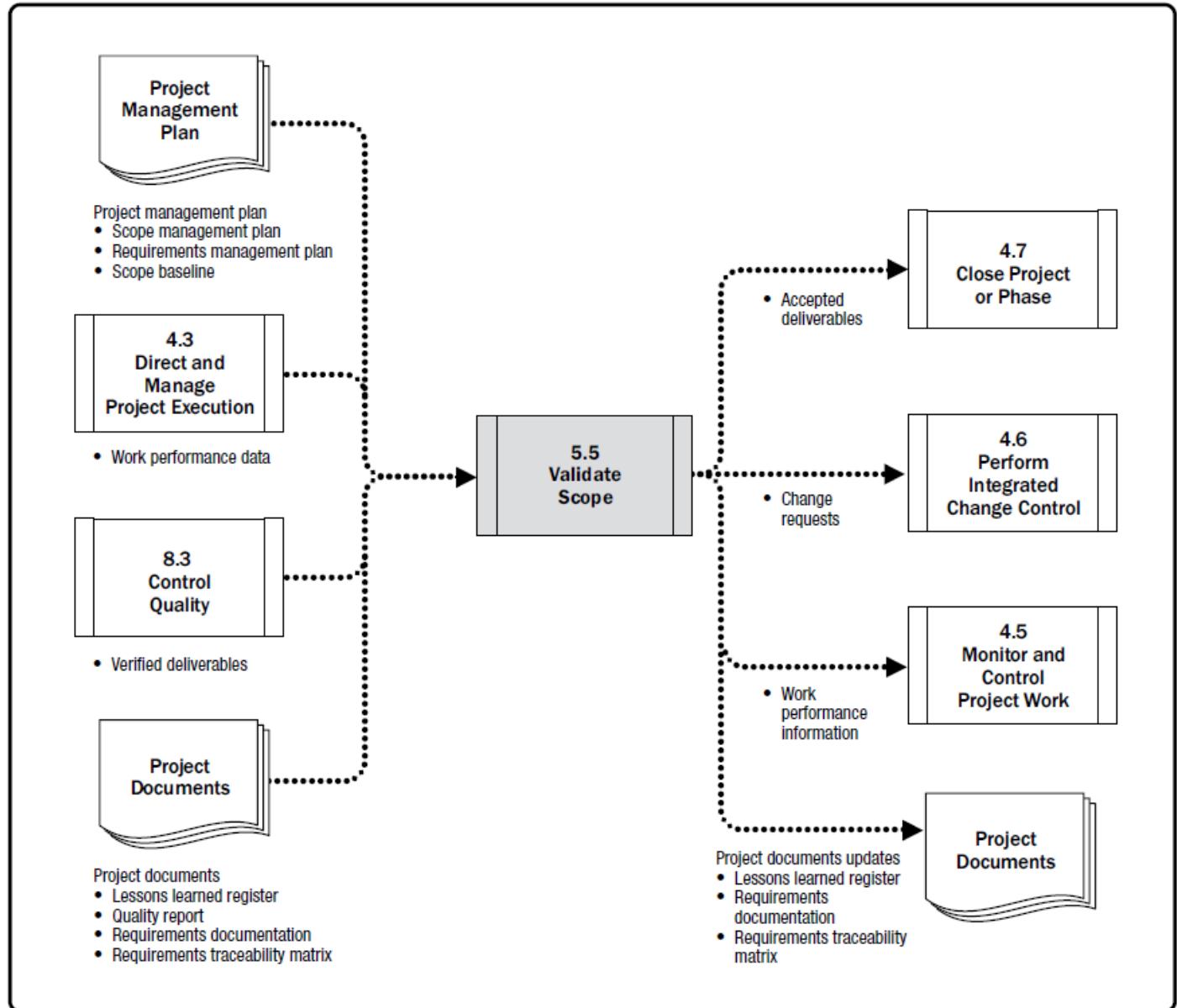


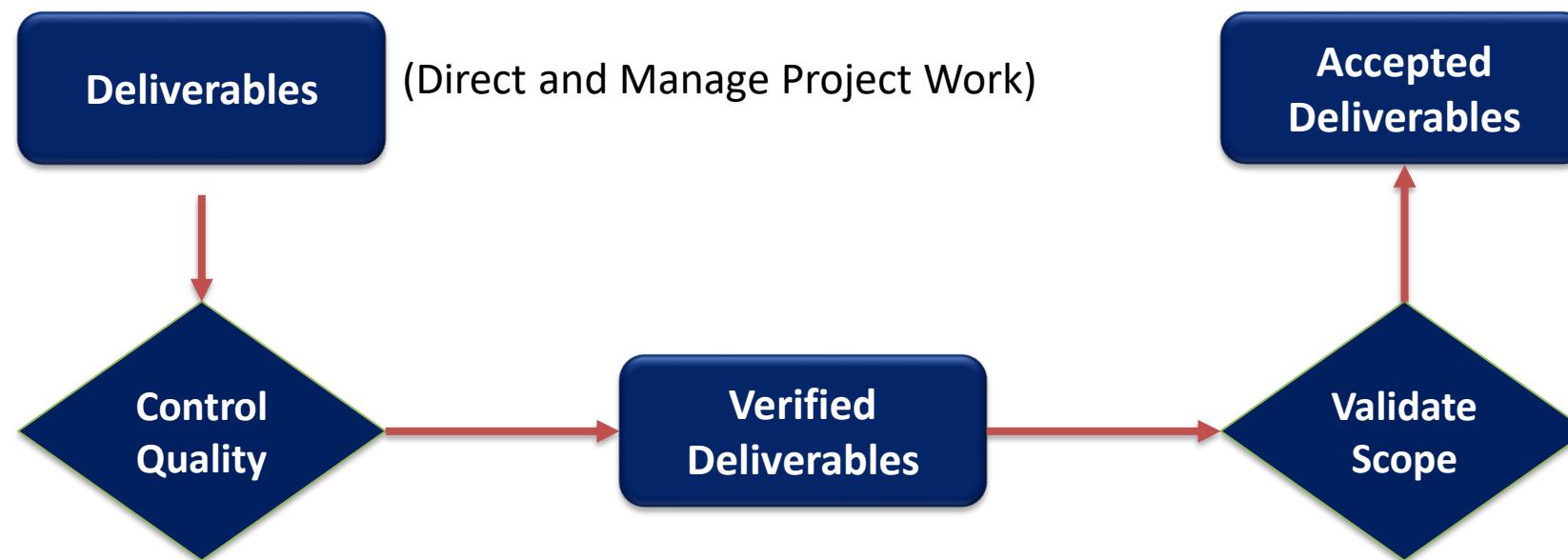
Figure 5-16. Validate Scope: Data Flow Diagram

Lecture 02 : Project Scope Management

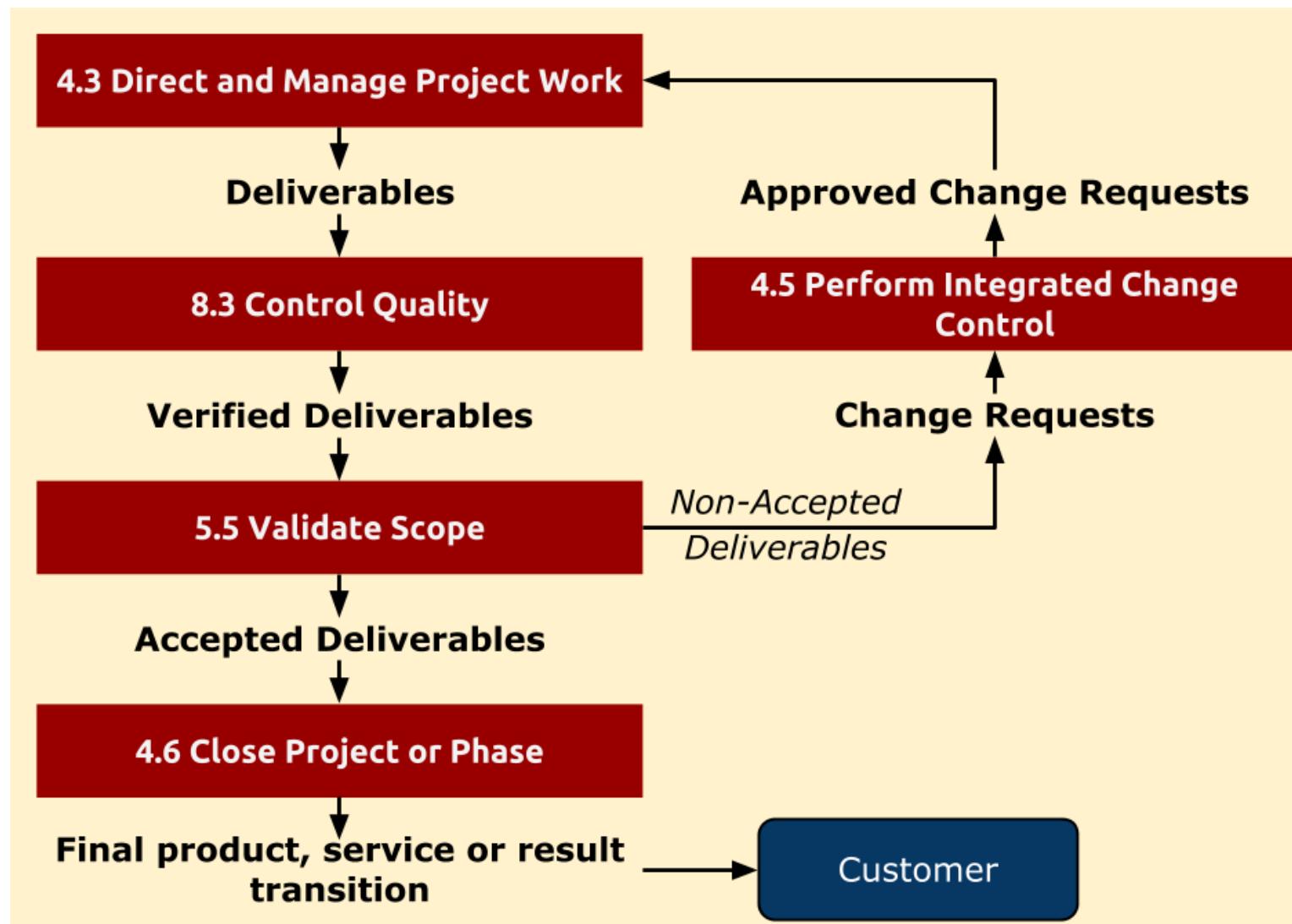
5. Validate Scope (M/C)

Validate Scope :

- **Validate scope** is concerned with **acceptance** of deliverables by **customer or sponsor** to ensure that they are fully completed as per customer requirements.
- **Quality control** is concerned with **correctness** of the deliverables by QC Department to ensure that they meet specified quality requirements.



Delivrables & Verified Delivrables & Accepted Delivrables



Sayed.Mohsen
PMP

Lecture 02 : Project Scope Management

5. Validate Scope (M/C)

Inputs

Verified deliverables

التسليمات المتحقّق منها

- ✓ Verified deliverables are project deliverables that are completed and checked for correctness through the Control Quality process

هي تسليمات المشروع المكتملة والتي فُحصت للتأكد من صحتها من خلال عملية ضبط الجودة.

TT

Inspection

الفحص

- Includes activities such as measuring and testing to determine whether deliverables meet requirements and product acceptance criteria.

القياس والاختبار والتحقق من الصحة لتقرير ما إذا كانت الأعمال والتسليمات تفي بالمتطلبات ومعايير قبول المنتجات

- Inspections are sometimes called **reviews**, **product reviews**, and **walkthroughs**.

وأحياناً يُطلق على عمليات الفحص اسم مراجعات ومراجعة المنتج والعرض التفصيلي.



Lecture 02 : Project Scope Management

5. Validate Scope (M/C)

o Accepted Deliverables: التسليمات المقبولة

- Deliverables that meet the acceptance criteria are formally signed off and approved by the customer or sponsor.
التسليمات التي تفي بمعايير القبول يوقع عليها ويعتمدتها العميل أو الراعي رسميًا
- Formal documentation received from customer or sponsor acknowledging formal acceptance of the project's deliverables.



والوثائق الرسمية المستلمة من العميل أو الراعي والتي تقر بموافقة المعنيين الرسمية على تسليمات المشروع يُعاد توجيهها إلى عملية إغلاق المشروع أو المرحلة.

o Work Performance Information:

- It includes information about **progress**, such as which deliverables have **started**, **their progress**, which deliverables have **finished**, or **accepted**.
- This information is documented and communicated to stakeholders.

Lecture 02 : Project Scope Management

6. Control Scope (M/C)



Lecture 02 : Project Scope Management

6. Control Scope (M/C)

➤ Control Scope is the process of :

- Monitoring the status of the project and product scope and managing changes to the scope baseline.
- هي عملية مراقبة حالة نطاق المشروع والمنتج وإدارة التغييرات على الخط المرجعي للنطاق.

❖ The key benefit of this process:

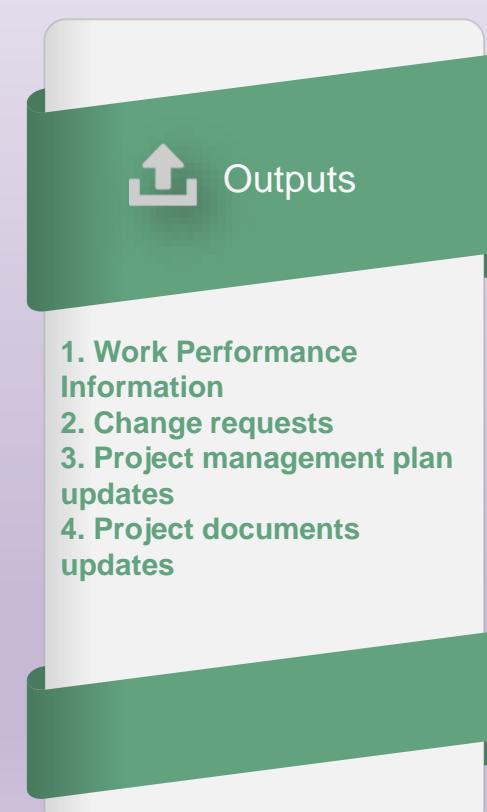
- ✓ The scope baseline is maintained throughout the project.

✓ الحفاظ على الخط المرجعي للنطاق على مدار المشروع.

Lecture 02 : Project Scope Management

6. Control Scope (M/C)

(6) Control Scope



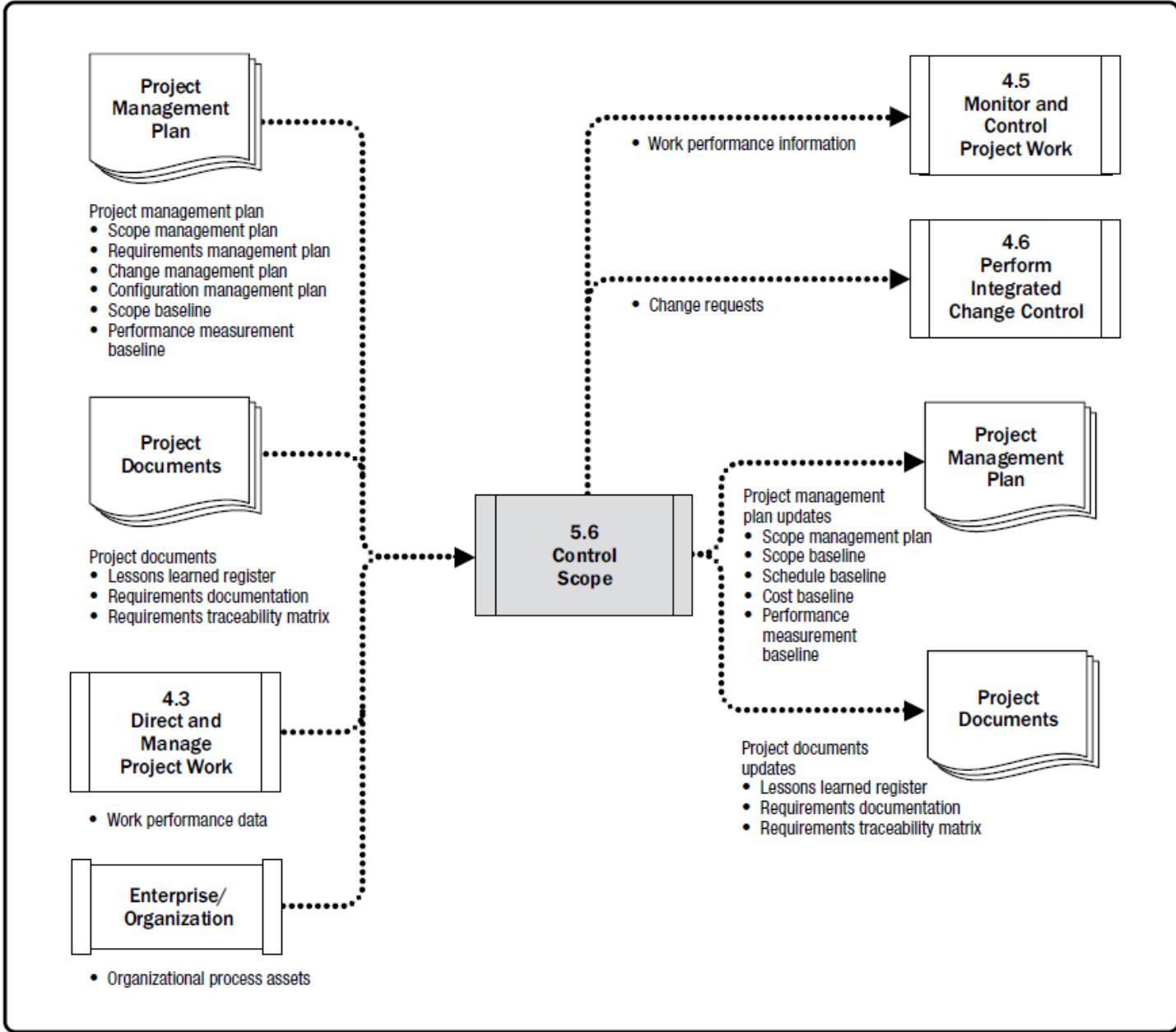


Figure 5-18. Control Scope: Data Flow Diagram

Lecture 02 : Project Scope Management

6. Control Scope (M/C)



DATA ANALYSIS



Variance Analysis

تحليل التباين

- ✓ Used to compare the **baseline** to the **actual results** and determine if the variance is within the threshold amount or if corrective or preventive action is appropriate.

Trend analysis

تحليل الاتجاه

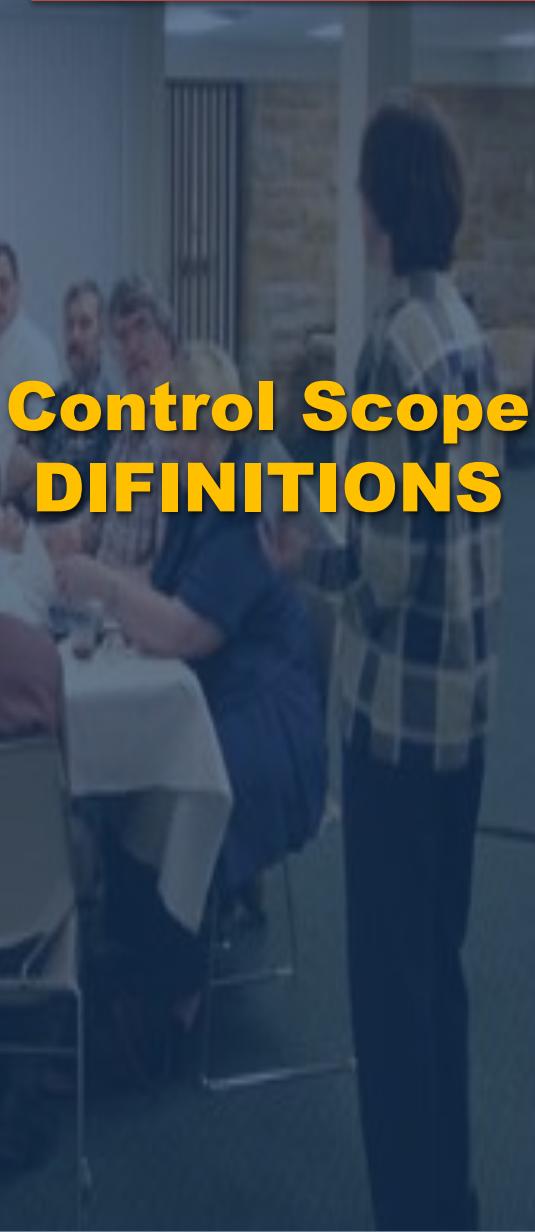
- ✓ Examines project performance over time to determine if performance is improving or deteriorating.

يفحص تحليل الاتجاه أداء المشروع على مدار الوقت لتقرير ما إذا كان الأداء يتحسن أم يتدهور.



Lecture 02 : Project Scope Management

6. Control Scope (M/C)



scope creep

تسbib النطاق

- The uncontrolled expansion to product or project scope without adjustments to time, cost, and resources.

ويشار إلى التوسيع غير المتحكم به الذي يطرأ على نطاق منتج أو مشروع دون تعديلات في الوقت والتكاليف والموارد باسم تسbib النطاق



BY: EL-Sayed Mohsen , PMP®, PMI- RMP®

Very Important Keywords

- 1- Brainstorming (Generate new ideas)
- 2- Interviews (Confidential information)
- 3- Focus Group (Prequalified stakeholders and subject matter experts)
- 4- Benchmarking (Comparing - generate ideas for improvement)
- 5- Affinity Diagram (Generate and Organize – Classified information)
- 6- Nominal group Technique (Generate and prioritization or Rank – Voting)
- 7- Observation (Uncover hidden requirements)
- 8- Facilitation (Bring key stakeholders - cross-functional requirements)
- 9- Prototypes (obtaining early feedback - Mock-up)
- 10 - Requirements Traceability Matrix (links requirements To deliverables)

Very Important Keywords

11- Decomposition (dividing and subdividing)

12- work package (lowest level in the WBS)

13- Validate Scope (Formal acceptance)

14- Close Project Or phase (Final Acceptance)

15- Verified deliverables (By Quality Control Team)

16- Accepted Deliverables (By Customer Or Sponsor)

17- Scope creep (Uncontrolled expansion to product or project scope)

18- Variance Analysis (Compare the baseline to the actual results)

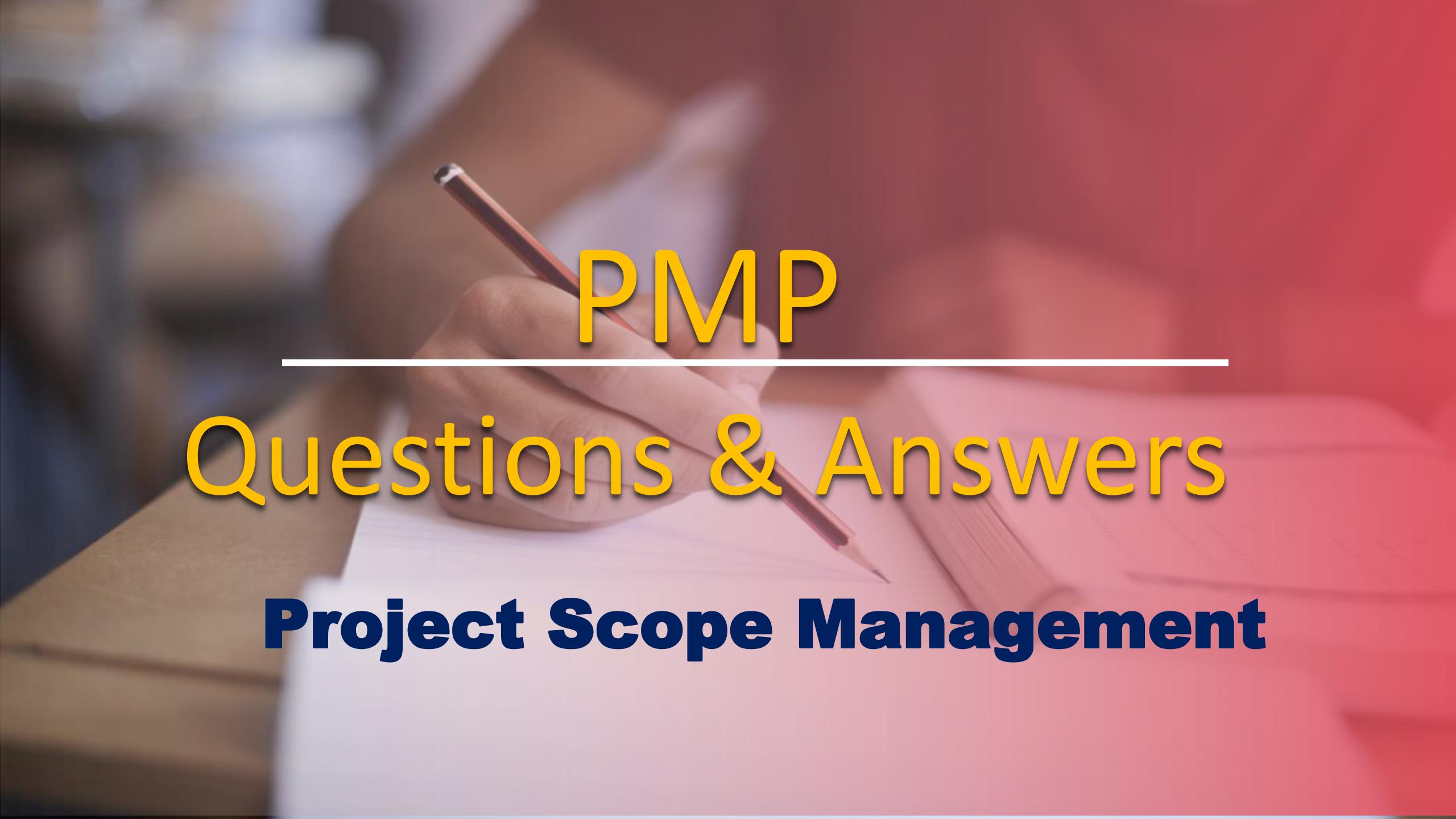
19- Trend analysis (Examines project performance over time)

20- WBS (Hierarchical decomposition of the total scope)

21- Product Scope (Features and Functions)

12- Project Scope (Work Performed)

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A close-up photograph of a person's hand holding a pink pencil, writing on a white page with blue horizontal lines. The background is blurred, showing more of the notebook and a wooden surface.

PMP

Questions & Answers

Project Scope Management



Q1) as a project manager, in which document will you find information about Assumptions, constraints and key deliverables?

- A. scope baseline
- B. Risk register
- C. Issue log
- D. Change management plan



PMBOK 154

5.3.3.1 PROJECT SCOPE STATEMENT

The project scope statement is the description of the project scope, major deliverables, assumptions, and constraints. The project scope statement documents the entire scope, including project and product scope. It describes the project's



Q2) you are a project manager and during collect the requirements for your project by group creativity technique you want to generate and organize information. This technique called:

- A.Brainstorming**
- B. Nominal group technique**
- C. Affinity diagram**
- D. Idea/mind mapping**



Generate = brainstorming

Generate& Organize & Classify OR Grouping =Affinity Diagram

Generate & prioritization& Voting= Nominal group techniques



Q3) On your project, you notice that an activity takes longer than what was planned, you have told the project team that an activity does not in the project scope, so you will review which document?

- A. Project Scope statement**
- B. Scope management plan**
- C. project management plan**
- D. change management plan**

PMBOK 155



Project Scope Statement

Project scope description (progressively elaborated)

Project deliverables

Acceptance criteria

Project exclusions



Q4) After a major milestone release, one of the key stakeholders are not happy and complain their requirements are not being met. In which of the following processes should the project manager have involved them to ensure their approval for the release?

- A. Validate scope**
- B. Control Scope**
- C. Change management**
- D. Develop project charter**

PMBOK 163



5.5 VALIDATE SCOPE

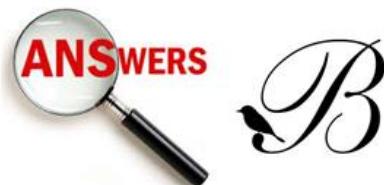
Validate Scope is the process of formalizing acceptance of the completed project deliverables. The key benefit of this process is that it brings objectivity to the acceptance process and increases the probability of final product, service, or result acceptance by validating each deliverable. This process is performed periodically throughout the project as



Q5) As part of tracking a project, a project manager is validating the completion of project scope. He or she would measure this against ?

- A- Requirements traceability matrix**
- B- The Project Management Plan**
- C- The Project Charter**
- D- The Requirements Management Plan**

PMBOK 131



Completion of the project scope is measured against the project management plan, while completion of the product scope is measured against the product requirements. The term “requirement” is defined as a condition or capability that is required to be present in a product, service, or result to satisfy an agreement or other formally imposed specification.

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Q6) While managing a project, you have included the product acceptance criteria in the Quality Management Plan. While reviewing your plan, a senior manager asks you to reconsider this. You then realize that what you did is incorrect. Where should you place the product acceptance criteria?

A- Project Charter

B- Change control process

C- Project Scope Statement

D- Scope Verification Plan

PMBOK 155

Project Scope Statement

Project scope description (progressively elaborated)

Project deliverables

Acceptance criteria

Project exclusions



C

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Q7) Which of the following defines the total scope of the project and represents the work specified in the current approved project scope statement?

- A- Work Breakdown Structure (WBS)**
- B- Risk Register**
- C- Project Charter**
- D- Requirements Breakdown Structure (RBS)**

PMBOK 157



The WBS is 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. The WBS organizes and defines the total scope of the project and represents the work specified in the current approved project scope statement.

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Q8) Where would you find a detailed list and description of specific project assumptions associated with the project?

A- Project charter

B- Project scope statement

C- Project configuration document

D- Change management plan





Q9) A process that states how formal validation and acceptance of the completed project deliverables will be achieved is documented in the:

A- Scope Management plan

B- Procurement Management plan

C- Risk Management plan

D- Communications Management plan

PMBOK 137



5.1.3.1 SCOPE MANAGEMENT PLAN

The scope management plan is a component of the project management plan that describes how the scope will be defined, developed, monitored, controlled, and validated. The components of a scope management plan include:

- ◆ Process for preparing a project scope statement;
- ◆ Process that enables the creation of the WBS from the detailed project scope statement;
- ◆ Process that establishes how the scope baseline will be approved and maintained; and
- ◆ Process that specifies how formal acceptance of the completed project deliverables will be obtained.



Q10) Marwa is a project manager in charge of an online banking project. The project has completed phase 1 and is moving into the next phase of the project. What is the process Marwa has to plan for to formalize acceptance of the completed project deliverables so that the project can move to the next phase?

- A- Manage Quality**
- B- Validate Scope**
- C- Close Project or Phase**
- D- Control Quality**

PMBOK 163



B

5.5 VALIDATE SCOPE

Validate Scope is the process of **formalizing acceptance of the completed project deliverables**. The key benefit of this process is that it brings objectivity to the **acceptance process** and increases the probability of final product, service, or result **acceptance by validating each deliverable**. This process is performed periodically throughout the project as



Q11) SAM is managing an ERP system implementation project. Which of the following tools can help her uncover a number of hidden process requirements during the Collect Requirements process?

- A- Observation**
- B- Questionnaires**
- C- Surveys**
- D- Nominal group technique**

PMBOK 145



◆ **Observation/conversation.** Observation and conversation provide a direct way of viewing individuals in their environment and how they perform their jobs or tasks and carry out processes. It is particularly helpful for detailed processes when the people who use the product have difficulty or are reluctant to articulate their requirements. Observation is also known as “job shadowing.” It is usually done externally by an observer viewing a business expert performing a job. It can also be done by a “participant observer” who actually performs a process or procedure to experience how it is done to uncover hidden requirements.



Q12) As the Project Manager for Midway Carnival Rides, you are beginning the Define Scope process. Which of the following is a key input to this process?

A- Project Scope Statement

B- Expert Judgment

C- Project Charter

D- WBS



C

PMBOK 150

Inputs

- .1 Project charter
- .2 Project management plan
 - Scope management plan
- .3 Project documents
 - Assumption log
 - Requirements documentation
 - Risk register
- .4 Enterprise environmental factors
- .5 Organizational process assets



Q13) Uncontrolled project scope changes are often referred to as

- A- Scope creep**
- B- Scope verification**
- C- Value Added Scope**
- D- Scope control**



PMBOK 168

to manage the actual changes when they occur and is integrated with the other control processes. The uncontrolled expansion to product or project scope without adjustments to time, cost, and resources is referred to as scope creep. Change is inevitable; therefore, some type of change control process is mandatory for every project.



Q14) which of these is not a component of the scope baseline that is contained in the project management plan?

A- Work Breakdown Structure (WBS)

B- Requirements documentation

C- WBS Dictionary

D- Project Scope Statement



B

5.4.3.1 SCOPE BASELINE

The scope baseline is the approved version of a scope statement, WBS, and its associated WBS dictionary, which can be changed only through formal change control procedures and is used as a basis for comparison. It is a component of

PMBOK 161



Q15) A technique that enhances brainstorming with a voting process used to rank the most useful ideas so they can be taken up for further brainstorming is:

- A- Six thinking hats**
- B- Mind mapping**
- C- Affinity diagram**
- D- Nominal group technique**



PMBOK 144

◆ **Nominal group technique.** The nominal group technique **enhances brainstorming** with a voting process used to **rank the most useful ideas** for further brainstorming or for prioritization. The nominal group technique is a structured form of brainstorming consisting of four steps:



Q16) If you are creating a new WBS for your project, what should you do to save time during the creation process?

- A- Delegate the WBS creation since it is not an important process**
- B- Skip the WBS process**
- C- Use a previous WBS from a similar project as a template**
- D- Create a less detailed WBS**





Q17) You are eight months into a project, and since another employee resigned, you have a new resource, Joe. After a couple of weeks on the job, Joe states that it isn't clear to him what exactly he should be accomplishing. While this is disturbing to you as the project manager, you decide to give him a document that contains detailed descriptions of work packages. What document did you give him?

A- Project Scope Management Plan

B- Activity List

C- WBS Dictionary

D- Project Charter

PMBOK 162

◆ **WBS dictionary.** The WBS dictionary is a document that provides detailed deliverable, activity, and scheduling information about each component in the WBS. The WBS dictionary is a document that supports the WBS. Most of the information included in the WBS dictionary is created by other processes and added to this document at a



C



Q18) You are a project manager and during collect the requirements for your project by Data representation techniques you want to generate, organize information and allows large numbers of ideas to be classified into groups for review and analysis. . This technique called:

- A- Brainstorming**
- B- Nominal Group Techniques**
- C- Affinity Diagram**
- D- Cause and effect Diagram**



C

◆ **Affinity diagrams.** Affinity diagrams allow large numbers of ideas to be classified into groups for review and analysis.

PMBOK 162



Q19) Jonson is a project manager who manages equipment installations in an automobile manufacturing project. Early in the planning process, He is asked to generate ideas for improvement and to provide a basis by which to measure performance. Jonson is most likely to use?

A- Control Chart

B- Pareto chart

C- Scatter Diagram

D- Benchmarking

PMBOK 143

◆ **Benchmarking.** Described in Section 8.1.2.2. Benchmarking involves comparing actual or planned products, processes, and practices to those of comparable organizations to identify best practices, generate ideas for improvement, and provide a basis for measuring performance. The organizations compared during benchmarking can be internal or external.





Q20) Which of the following document that links product requirements from their origin to the deliverables that satisfy them and provides a structure for managing changes to the product scope?

A- Project Charter

B- Risk Register

C- Requirements Tractability Matrix

D- Requirements Documentation

PMBOK 148



C

5.2.3.2 REQUIREMENTS TRACEABILITY MATRIX

The requirements traceability matrix is a grid that links product requirements from their origin to the deliverables that satisfy them. The implementation of a requirements traceability matrix helps ensure that each requirement adds business value by linking it to the business and project objectives. It provides a means to track requirements throughout the project life cycle, helping to ensure that requirements approved in the requirements documentation are delivered at the end of the project. Finally, it provides a structure for managing changes to the product scope.



Q21) After Defining the Scope What Will you do Next ?

A- Collect Requirements

B- Decomposition deliverables in to smaller component

C- Plan Scope Management

D- Validate Scope



B

What is the difference between Scope Creep and Gold Plating?

Scope Creep:

** The uncontrolled expansion to product or project scope without adjustments to time, cost, and resources.

Example:

📌 Suppose you are building a 100-foot wall for the client, and client comes to the team and asks them to increase the length of wall by one foot. Team members think there is a lot of material lying around on the site, and it will make no difference to them to build just one foot of the wall; therefore, they go ahead and add the extra length to the wall.

Gold Plating:

** Gold plating means intentionally adding extra features or functions to the products which were not included in the scope statement.

Example:

📌 Let us say that you are building a software program for the client. Your programmer comes to you and says he can add some extra features to the program with almost no effort which will increase the functionality of the product, and the client will like it. You also agree with him, and allow him to add this extra functionality.

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