MASTER OF COMPUTER SCIENCE/
MASTER OF SCIENCE IN COMPUTER SCIENCE

MCS 4204 –
Software Project Management and Quality Assurance

Project Scope Management

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What is Scope Management

- Processes to ensure that the project includes **all the work required**, and **only the work required**, to complete the project successfully.
- Primarily concerned with defining and controlling **what is and is not** included in the project.
- Project Scope Management processes are:
  - Plan Scope Management
  - Collect Requirements
  - Define Scope
  - Create WBS
  - Validate Scope
  - Control Scope

Planning

Monitoring and controlling

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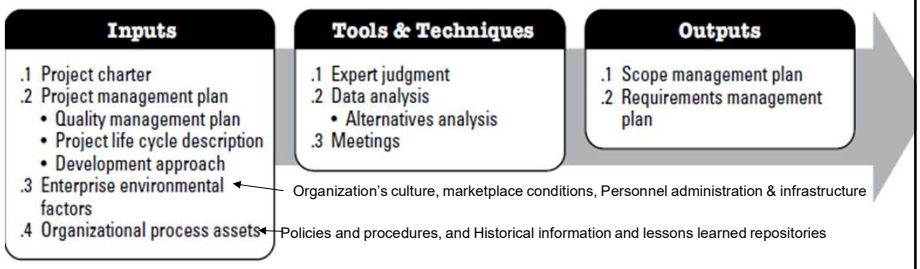
1.Plan Scope Management



- Process of documenting how the project and product scope will be defined, validated, and controlled.
- Provides guidance and direction on how the scope will be managed throughout the project.
- This is performed once or at predefined points in the project.

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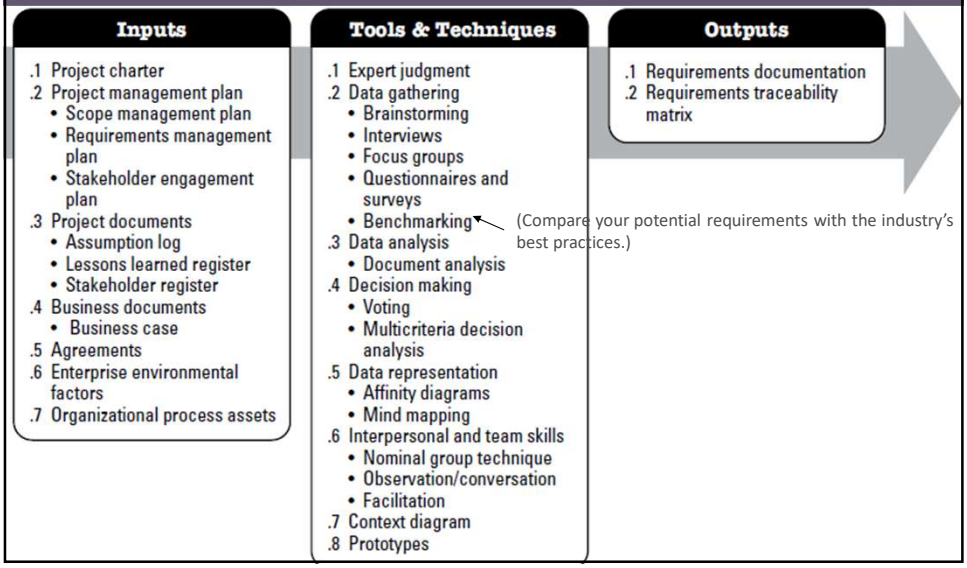
2. Collect Requirements



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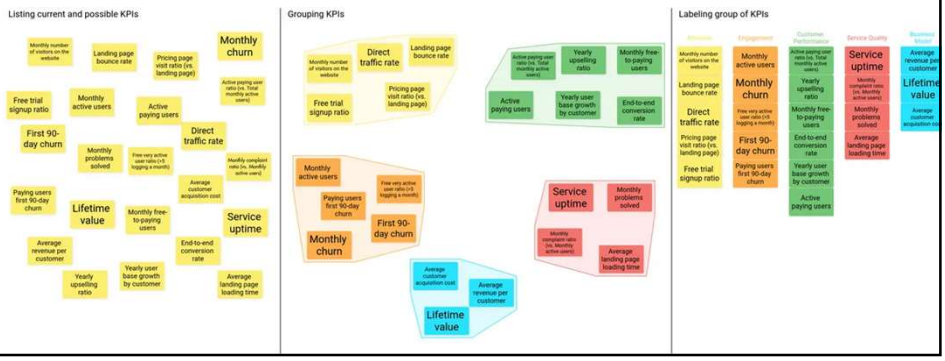
Tool/Techniques: Affinity Diagram

- An output from a brainstorming session
- Affinity diagram **organizes a large number of ideas into their natural relationships**.
- Aid to develop innovative solutions



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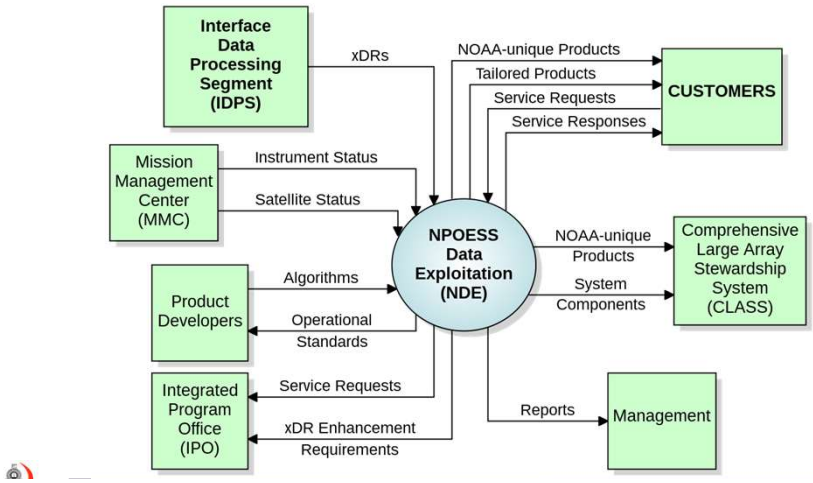
Tool/Techniques: Context Diagram



https://en.wikipedia.org/wiki/System_context_diagram

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Output: Requirement Traceability Matrix

	Requirement #1	Requirement #2	Requirement #3	Requirement #4	Requirement #5	Requirement #6	Requirement #7	Requirement #8	Requirement #9	Requirement #10	Requirement #11	Requirement #12	Requirement #13
Test Case #1			X				X				X		
Test Case #2		X		X			X						X
Test Case #3	X			X			X			X			
Test Case #4				X	X								
Test Case #5								X					
Test Case #6					X				X				

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3. Define Scope

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

Tools & Techniques

.1 Expert judgment
.2 Data analysis
- Alternatives analysis

.3 Decision making
- Multicriteria decision analysis

.4 Interpersonal and team skills
- Facilitation

.5 Product analysis

Outputs

.1 Project scope statement
.2 Project documents updates
- Assumption log
- Requirements documentation
- Requirements traceability matrix
- Stakeholder register

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Stakeholder Register

Stakeholder Register

Project Name:					Date:	
Stakeholder's Name	**Role**	**Group (Internal/ External)**	**Type**	**Group**	**Influence/Interest**	**Address**
Brian	Client	External	Positive	Sponsor	High-Power / High-Interest	New York

Stakeholder Name	Contact information	Project Role	Project Requirements	Project Concerns	Impact and Influence Scores
Mary Pulaski	(123) 1234567 mpulaski@hmail.com	Sponsor	Compelling UI, fast and responsive	Delays, cost over runs, poor reacti	●●● ■■■
Libby Kipling	(123) 2345678 lkippling@hmail.com	Project Manager	Completion to scope, schedule, budget & q	Tech viability, Disappointed Sp	●●● ■■□
Jeff Harris	(123) 3456789 jharris@hmail.com	Product Manager	Fully functional app with all high priority	Ready for trade show, slower tha	●●● ■■■
Mitchel O'Keath	(123) 4567890 mokeath@hmail.com	PMO Representative	Alignment with IS strategy, integration	Citizen dev. risks, dependencies on	●○○ ■□□
Sanjiv Patel	(123) 5678901 sapatel@hmail.com	Steering Committee Mbr	Competitive advantage, ROI	Industry reception, costs	●○○ ■■■
Joe Corbitt	(123) 6789012	Development	Delight the users,	Team skills, lack	●●○

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4. Create WBS

Inputs	Tools & Techniques	Outputs
.1 Project management plan • Scope management plan .2 Project documents • Project scope statement • Requirements documentation .3 Enterprise environmental factors .4 Organizational process assets	.1 Expert judgment .2 Decomposition	.1 Scope baseline .2 Project documents updates • Assumption log • Requirements documentation

- The process of subdividing project deliverables and project work into smaller, more manageable components.
- Provides a framework of what has to be delivered.
- This is performed once or at predefined points in the project

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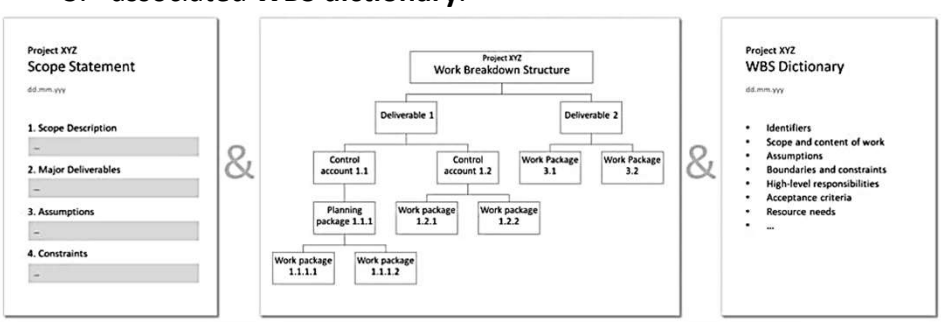
Output: Scope Baseline

- It includes the,
  1. approved **Project Statement**,
  2. **Work Breakdown Structure (WBS)**, incl. control accounts, planning packages, and work packages, and
  3. associated **WBS dictionary**.



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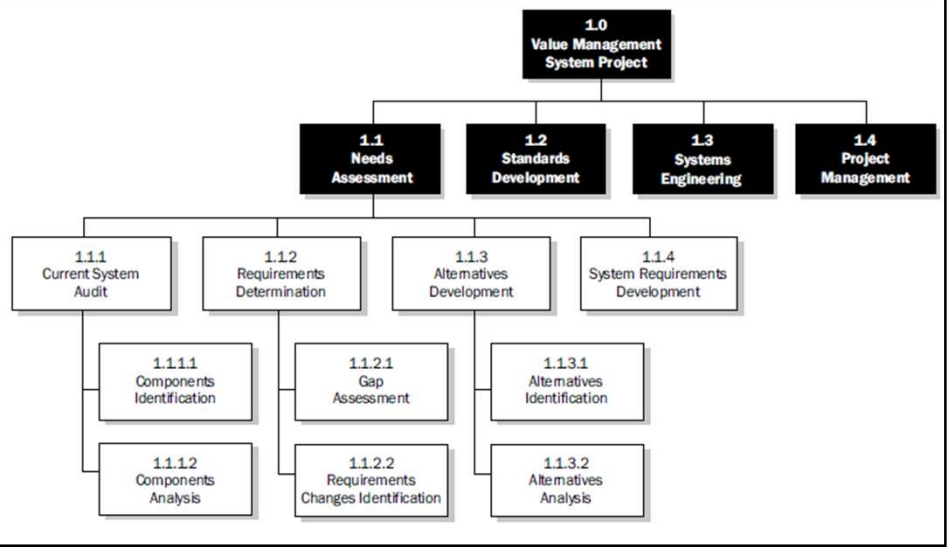
Example - WBS



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Creating a WBS

1. Identifying and analyzing the deliverables and related work,
2. Structuring and organizing the WBS,
3. Decomposing the upper WBS levels into lower-level detailed components,
4. Developing and assigning identification codes to the WBS components, and
5. Verifying that the degree of decomposition of the deliverables is appropriate.

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Identifying activities

- **Activity-based approach**
  - Conduct a brainstorming session or analyse similar past projects and prepare a WBS
- **Product-based approach**
  - Produce a Product Break-down Structure (PBS) and a Product Flow Diagram (PFD)
- **Hybrid approach**
  - Introduce additional levels structuring both products and activities

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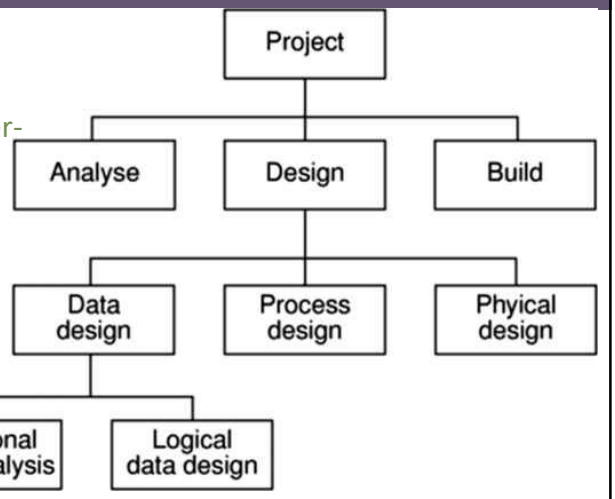
Activity-based Work Breakdown Structure

- Identify the main (high-level) tasks
- Break them into lower-level tasks
- Consider which activities need to be completed before others can start



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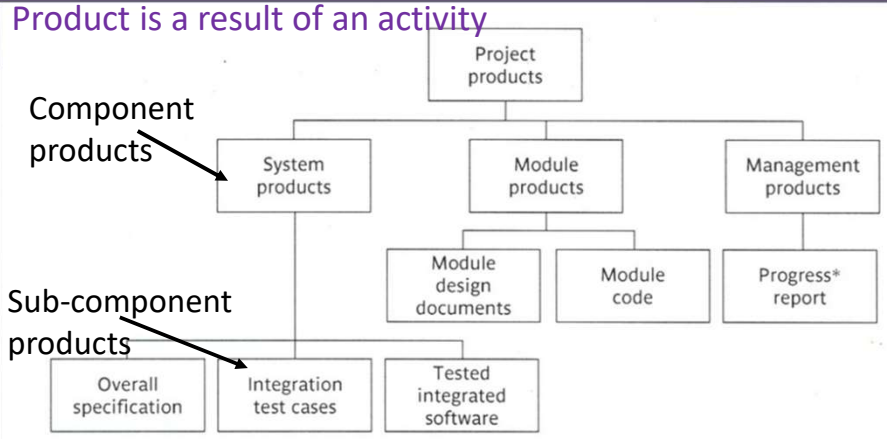
PBS

- Product is a result of an activity



- Do not identify activities as products
- Use standards
- Products at the bottom should be documented by product descriptions

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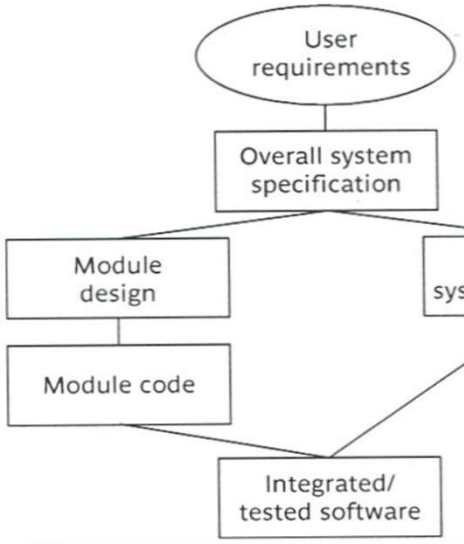
PFD



Oval shape item is used by the project, but not created by it

Bottom of the diagram shows an overall product

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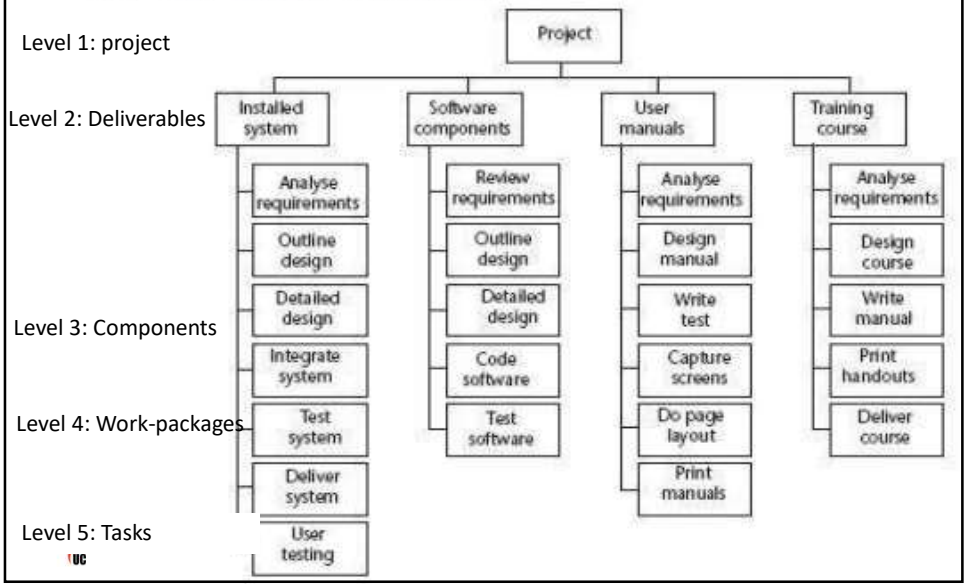
The Hybrid Approach

A WBS based on deliverables



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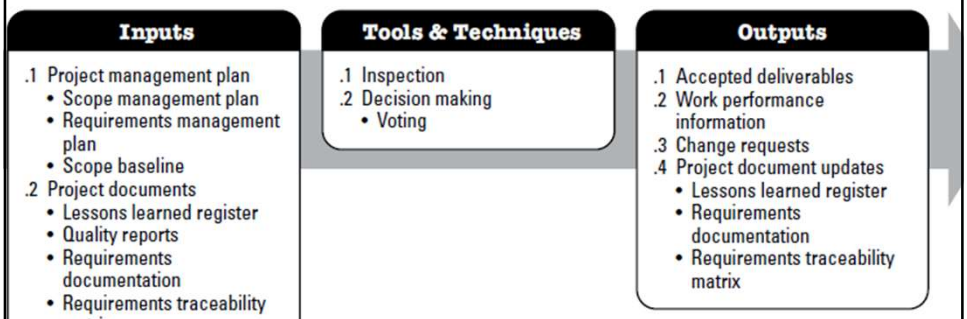
5. Validate Scope



formalizing acceptance of the completed project deliverables

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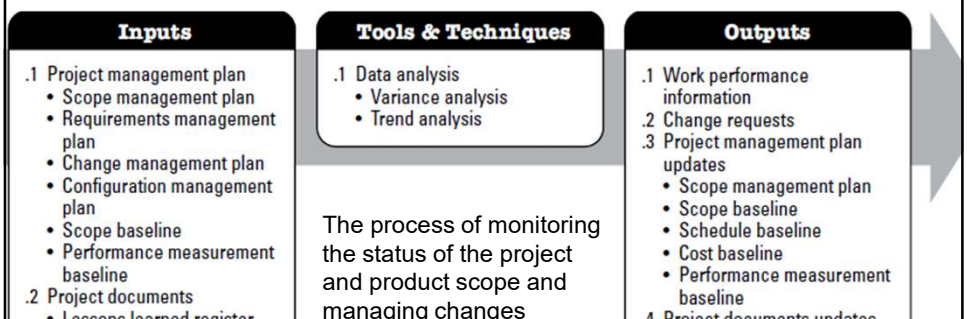
Control Scope



The process of monitoring the status of the project and product scope and managing changes to the scope baseline.

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