PMBOK® 2008
Project Scope Management

Requirements

QTC CONSULTING

Enhancing Your Program And Project Performance

What is Scope?

Two scopes to consider in project management:

1. ***Scope of the Project*** which is a description of work which when complete will deliver the product of the project in complete working order and fully functioning as specified.

2. ***Scope of the Product*** which is a description of the characteristics of the product of the project with which the project deliverable must comply.

Definition

"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."**

"A Guide to the Project Management Body of Knowledge" 4th Ed., (2008), Project Management Institute.

Why we 'Do' Projects?

- To Solve a problem, or
- To realise an opportunity
- If you cannot clearly and succinctly identify your project to the above, as in, what is the problem you are solving or what is the opportunity you are realising, you should not be 'doing' the project!

Scope Management

1. Collect Requirements – Define and document the project and the product expectations of the stakeholders (clients)
2. Scope Definition – Developing a detailed project scope statement
3. Create WBS – subdividing deliverables into smaller more manageable components
4. Scope Verification - formalising acceptance of project deliverables
5. Scope Control – control changes to project scope

Collect Requirements

Questions to ask

- What's the business benefit sought?
- What's the business problem to be solved?
- Functional requirements?
- Quality requirements?
- Impacts to existing business(s)
  - Internal or external
- Ongoing training and support?
- Assumptions and Constraints

Detailed Requirements Planning

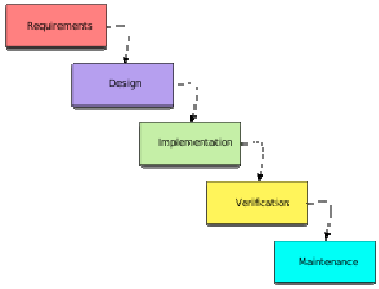
- Detailed requirements gathering and planning enables true comparison of what we want to do and what we need to do, to either solve the problem or realise the opportunity

Selecting the requirements process?

- Waterfall
- Iterative
- Rapid Applications Development (RAD)
- Scrum
- Dynamic Systems Development Methodology

Waterfall

- Where does the project 'fit'?
- The requirements plan(the approach)?
- Capture the requirements
- Document and review with stakeholders (not all)
- Obtain 'sign off' from the relevant stakeholders



Waterfall

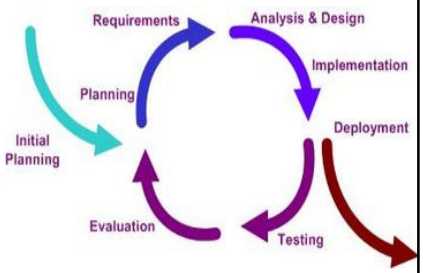
- Suitable for:
  - Large projects
  - Well-understood product/requirements
  - Using proven technologies
  - Enterprise solutions
- Advantages:
  - Easy to plan and manage
  - Sign of at each step
  - Expectations set up front
  - Revisiting issues minimised
  - Easy integration across corporate activities

Waterfall

- Disadvantages:
  - Limitation of customer involvement
  - Focus is retrieving requirements rather than discovering them
  - May lead to unrealised misunderstandings
  - Could lead to excessive rework
- Good practice:
  - Continual sign off
  - Modeling/prototyping (where possible)
  - Focus on the key requirements
  - Accept iteration as fact

Iteration

- Where does the project 'fit'?
- Create requirements plan
  - Executive view
  - Operations view
  - Users view
- Elicit requirements
- Document requirements
- Review and approve



Iteration

- Suitable for:
  - Medium to large projects
  - Unclear requirements
  - Research and development
  - New technologies
- Advantages:
  - Learn from previous iteration
  - Client see's evolution of product
  - Logical development of ideas

Iteration

- Disadvantages:
  - Each iteration may cause rework to the previous
  - Scope creep
  - When do you stop?
- Good practice:
  - Initiate change control protocol before you start
  - Use baselines for each iteration
  - Each iteration can be a project or an independent phase

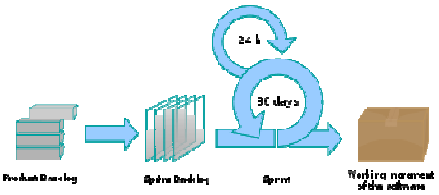
Rapid Applications Development (RAD)

- People
  - Small specialised groups, typically 5 -7
- Process
  - Well defined processes: check lists, roles, responsibilities and lessons learned
  - Minimal planning in favor of rapid prototyping
- Tools
  - Specialised for sector

Assumes a stable organisation and utilises 'time boxing' , scope has to fit into the time box determined.

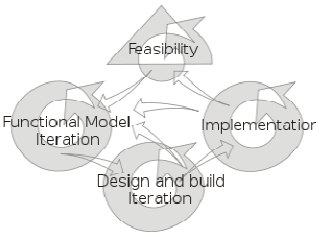
SCRUM

- Requirements typically not well understood
- Mostly focused on the development phase
- Stand up meetings – 15 minutes each day
  - What tasks have you worked on since the last meeting?
  - What are you planning to work on next?
  - Is anything blocking you?
- The SCRUM Master keeps the team from being 'bothered'



Dynamic Systems Development Methodology

- Extension of RAD
- Uses the delivery of products deemed 'good enough'
- Tasks are overlapped and progressed as soon as enough information available from predecessor tasks
- Risk management is a key component
- Main problem – open to much rework!



Which Requirements Gathering Technique?

- Interview
- Facilitated session
- Observation/job shadowing
- Study existing
- Study interfaces/interactions
- Surveys
- Focus group

Requirements issues?

- Lack of time/availability of customer
- Lack of customer knowledge
- Lack of buy-in to scope
- Lack of skilled consultants/business analysts
- No repeatable process from which to learn

Requirements issues

- Technical skills matter, but communication matters more!
- People skills
- Negotiation
- 'The Business' background

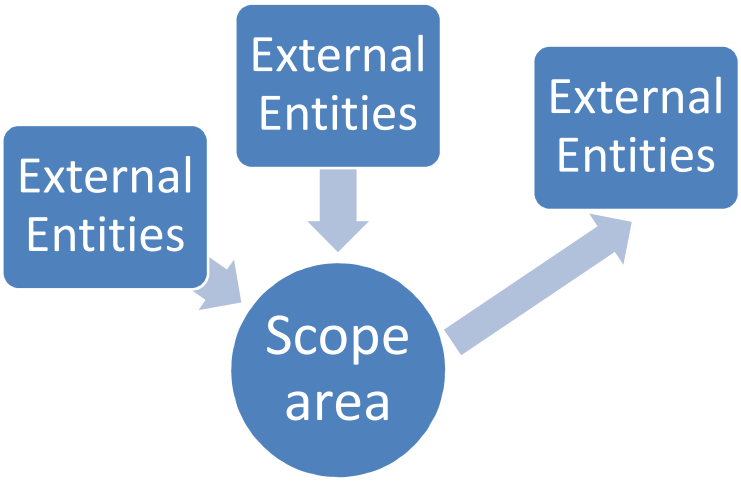
Requirements issues

- Is there too much attention to the project plan and not enough to defining the product to be delivered?

Enterprise Analysis

- Which stakeholders have information that may help understand the business (may not be involved with the particular project in question)

The context diagram

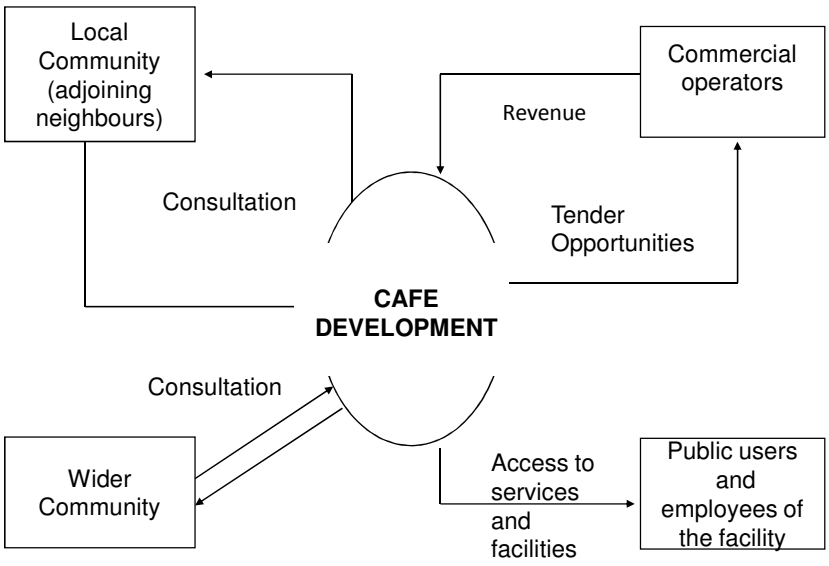


The Context diagram

- Scope Area
  - Represented by a circle in the middle
  - Can be the business area
  - Can be the problem or opportunity
- External Entities
  - Represented by a rectangle
  - People
  - Organisations
  - Systems that will send or receive information from the scope area

The Context diagram

- Data Flow
  - Represented by an arrow
  - Denotes a ‘packet’ of information
  - Key business concepts
  - Easy for the client to recognise



USER AND FUNCTIONAL LEVEL REQUIREMENTS

Ranking = M-Mandatory; D-Desirable; F- Future

ID	Requirement	Rank		
		M	D	F
	Performance			
	• Operational life of 50 years		√	
	• Major upgrades and refurbishments every 8 to 10 years		√	
	• Inclusion of environmental design features offsetting energy consumption costs to deliver savings in the order of 20% per annum.		√	

User profiling?

- Who will use the product of the project?
- How much will they use the product?
- At what level will they use the product?
- Users are Stakeholders!

Elements of a Requirements Plan

1. Project overview & Background
2. Scope & deliverables (Consultant/BA view)
3. Stakeholder analysis
4. Communication plan
5. Project activities
6. Roles & responsibilities
7. Resource plan (Consultants/BA view)
8. Risks in relation to requirements/end product
9. Change control

Question?

- You are assigned a project that requires the manufacturing of medical equipment for one of your company's current clients. Your company has executed similar projects successfully in the past. During which phase of the project would you consider referring to previous project documents for the similar projects?
- A. Scope planning
- B. Scope verification
- C. Scope definition
- D. Initiation

Stakeholders

- Single stakeholder?
- Multiple stakeholders?
- One location?
- Multiple locations?
- Well understood environment (by stakeholders)
- Brand new environment (by stakeholders)

Question?

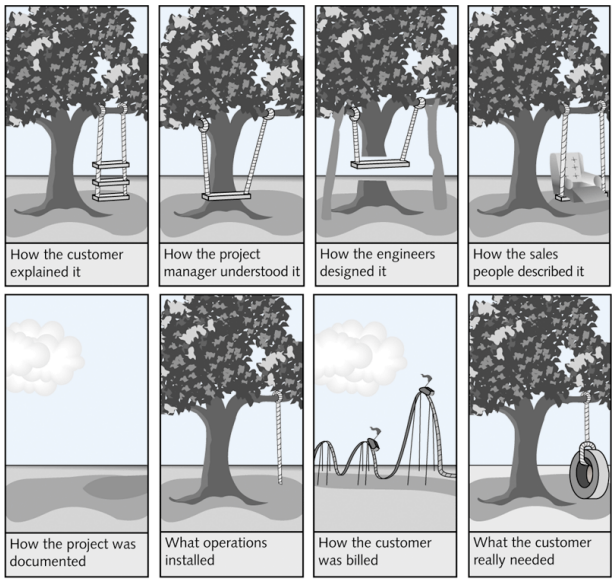
What tools and techniques are typically used in the scope planning process?

- A. Analysis of the product, cost/benefit analysis estimates, identification of alternative approaches, and expert judgment.
- B. Work breakdown structure templates and decomposition of deliverables into smaller, more manageable components.
- C. Review of historical information, creation of project constraints and assumptions, and cost/benefit analysis estimates
- D. Project justification, work breakdown structure templates, and identification of alternative approaches.

Interview questions

- Types:
  - Open
  - Closed
  - Probing
  - Validating
- The focus for requirements gathering is on the What, not the How!

Importance of clarifying the what!



Effective requirements Communication

- Identifies stakeholders
- Brings together disparate views
- Determines differing review approaches
- Gets sign-off!

Alternative solutions

- A new system/product will not always be the answer
- Enhance the existing/product system
- Develop a new solution/method
- Buy a solution
- Do nothing

Mapping

- The solution must be mapped back to the requirements
- Identify missing requirements
- Identify excess functionality
  - (scope creep)
- Give the client what they asked for and solve their problem, or realise their opportunity!

Question?

You are the project manager on a project that has met all deliverables on schedule and on budget. What **MUST** be done to ensure all work was completed correctly and satisfactorily?

- A. Perform product verification.
- B. Perform a procurement audit.
- C. Obtain formal acceptance from the client.
- D. Obtain formal approval from the contracts manager.

Scope definition and client agreement checklist

- Who is the client?
- What are the objectives of the project?
- What are the project deliverables including products, services and other agreed outcomes?
- What assumptions does the client have?
  - What assumptions does the project team have?
  - Are these assumptions compatible?

Scope definition and client agreement checklist

- What constraints is the project operating under?
- What will the project team be doing to deliver agreed products and services?
- What are the timelines for these activities?
- Are the client and the project team in agreement regarding the project activities and timelines?

Clarifying outcomes and establishing performance measures

Depending on the scale of the project, measures can be applied at three stages:

- Pre-project measurements applied during the set up phase to generate the base-line indicators
- Measurements taken during the project to check on whether key performance milestones are being met
- Post-project measurements that reveal whether the completed project has delivered the specified project outputs and that outcomes are realised.

Assumptions, Dependencies and Constraints

Ranking: H – High level of uncertainty M – Medium level of uncertainty
L – Low level of uncertainty

ID	Assumption	Uncertainty		
		H	M	L
	The City will provide the necessary financial and human resource requirements as detailed in this report.		√	
	The City will receive competitive tenders for the construction component of the facility inline with its budget forecasts. If the Tenders are well in excess of the forecast budget a reappraisal of the project will be required.		√	

Assumptions, Dependencies and Constraints

Ranking: H – High level of uncertainty M – Medium level of uncertainty
L – Low level of uncertainty

ID	Constraints	Uncertainty		
		H	M	L
	The scope of the project is limited to what is actually required and documented in the brief for the site. This is of particular importance during the community consultation phase as unrealistic expectations need to be managed to ensure that the project scope does not increase dramatically which could lead to the City not having the financial capacity to match these expectations unless funding is found from alternative resources.	√		
	The project is limited to the funding provided.		√	

Force Field Analysis

- Is a technique of analysing the negative or positive forces that may influence your ability to achieve the project objectives
- List the positive and negative forces in separate columns, to allow a focus where required

Force Field Analysis

Positive	Negative
Fully trained personnel Supportive management	Semiskilled personnel Hostile client

Clarifying outcomes and establishing performance measures

Failure to introduce performance measures will result in too little feedback for stakeholders to effectively monitor the project's management and progress towards delivering the requirements.

10 Signs that You May Have Scope Problems

1. Unclear purpose
2. The scope doesn't match the objectives
3. There are gaps in definition (the what)
4. The scope statement contains insufficient detail
5. The scope contains hidden assumptions or constraints
6. Undocumented interfaces (within the project or with other projects)
7. Items don't fit (solution mapped back to the list of what?)
8. Wrong participants/approvers
9. Silent questions
10. Unresolved issues

Finished

- Questions?