School of Engineering

Project Management & Engineering Practice
(GENG 5505)

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Scope management: Delivering on changing expectations
(Ch 4)

(Week 3a) - Lecture five, 12th March, 2024

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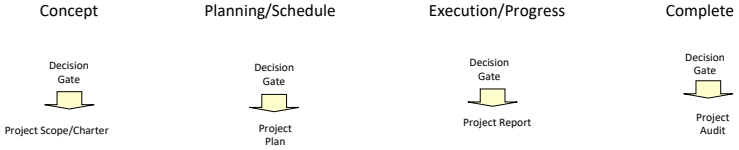
Navigating the project lifecycle (Slide review)



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Project life cycle inputs (Slide review)

Concept inputs	Planning inputs	Execution inputs	Finalization inputs
➢ Project selection ➢ Problem/opportunity trigger ➢ Alternative solutions discussed ➢ Consistent with organizational capability ➢ Project benefits identified ➢ Critical success factors identified ➢ Risks identified ➢ Expectations agreed ➢ Sponsors located ➢ Stakeholders confirmed ➢ Explicit decision made to proceed to next stage (resources & time commitment) ➢TBL & Life cycle thinking ➢…	➢ Project variables reviewed & redefined ➢ Break down project into activities ➢ Schedule developed, revised & base lined ➢ Estimate contingency factors ➢ Critical path identified ➢ Source & assign resources ➢ Quality measures in place ➢ Procurement specifications finalised ➢ Contracts formulated ➢ Control measures identified ➢ Explicit decision to proceed to next stage (resources & time commitment) ➢TBL & Life cycle thinking ➢…	➢ Ongoing progress review & control ➢ Progress status & forecast reports ➢ Manage change requests ➢ Manage contracts ➢ Deal with team issues ➢ Corrective &/or reinforcement action ➢ Manage escalation issues ➢ Manage meetings ➢ Control & report progress ➢ Explicit decision made to commit more time, resources & money in proceeding to next stage ➢TBL & life cycle thinking ➢…	➢ Document client acceptance ➢ Document project outcome ➢ Conduct project evaluation & audit ➢ Contract closeout ➢Team & stakeholders debrief ➢ Communicate lesson learnt ➢ Resources reassigned ➢ Retentions certificates & warranties ➢ Archiving & recording ➢ Celebrate team's success ➢ Decision to close out ➢TBL & life cycle thinking ➢…

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Project life cycle outputs (Slide review)

Concept outputs	Planning outputs	Execution/monitoring outputs	Finalization outputs
➢ Client brief ➢ Business case ➢ Feasibility study / Cost benefit analysis /Life cycle impact assessment, etc. ➢ Risk assessment ➢ Charter/Scope documentation ➢ Stakeholder analysis ➢ Budget forecasts ➢ Procedures & policies ➢ Meeting minutes ➢TBL & life cycle thinking ➢… Approvals	➢ Stage, task & milestone detail – including duration, sequencing & resources ➢ Revised timelines (PERT/Gantt/etc.) ➢ Revised cash flows & budgets ➢ Resource matrix ➢ Baseline project schedule ➢TBL & life cycle thinking ➢… Approvals	➢Performance standards ➢ Inspection & monitoring /testing plan ➢ Purchase orders ➢ Performance reports ➢ Change of scope request ➢ Progress claims ➢ Corrective action ➢ Contracts ➢ Revised schedules ➢TBL & life cycle thinking ➢… Approvals	➢ Handover ➢ Acceptance testing ➢ Project audit ➢ Completion checklist ➢ Feedback & evaluation ➢… Approvals

Planning scope management

1. A scope management plan documents '…how the project scope will be defined, validated and controlled' (PMBOK 2013).
2. Establishes the direction and guidance parameters on how the scope itself (project or product/service based) will be managed.
3. Provides a formal mechanism o limit, assess and authorise changes on a consistent and transparent basis.

Defining the scope

- ➢What is (inclusions) and what isn't (exclusions) required
- ➢Establishes a scope baseline for comparisons and updates
- ➢Forms the foundation of the project plan
- ➢Investigates if expectation meets capability
- ➢Identifies the project deliverables, results and benefits

EXPECTATIONS DON'T ALWAYS MATCH CAPABILITY

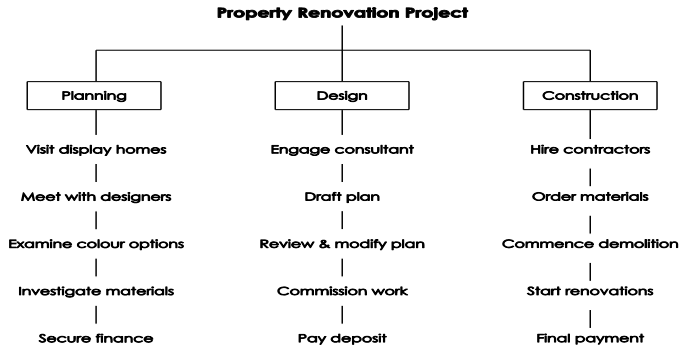
Client expectation		Project capability	
Expectation 1	☑	Capability 1	☑
Expectation 2	☑	Capability 2	☐
Expectation 3	☑	Capability 3	☑
Expectation 4	☑	Capability 4	☐
Expectation 5	☑	Capability 5	☐
Expectation 6	☑	Capability 6	☑

The work breakdown structure (WBS)

➢Decomposes the project:

- What work must be performed? Identifies all required activities;
- How long will each activity take? Determines the duration;
- What resources can perform the work? Determines who is needed;
- How much investment is required? Determines what budget is needed.

GRAPHICAL WORK BREAKDOWN STRUCTURE



Objective validation criteria

➢Client acceptance will never be automatic in any project. Consider the following criteria to add a little formality to the process:

- •Issuing compliance certificates
- •Measuring work performance
- •Conducting variance analysis
- •Undertaking physical inspections
- •Conducting quality testing
- •Scheduling independent audits
- •Assessing technical feasibility
- •Maintaining a traceability matrix

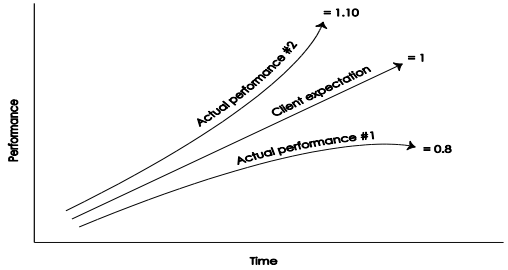
Satisfying client expectations: Delivering the agreed output

➢Highly satisfied (over performance)
> 100%

➢Satisfaction (agreed performance)
= 100%

➢Dissatisfaction (under performance)
< 100%

SATISFYING CLIENT EXPECTATIONS: DELIVERING THE AGREED OUTPUT...CONTINUES



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Controlling the scope

- Scope will always change over time (scope creep);
- Other words for scope creep are innovation, continuous improvement, a client change of mind or just poor management;
-
- Scope control requires a written process with formal approval;
- Proposed changes should be assessed against all other project variables (time, cost, risk, contracts, quality, …) and approved by key stakeholders;
- Implemented changes must produce updated project plans and related documents;

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Starting the project: Core outputs from the concept stage

1. Identifying key stakeholders
2. Assigning the project manager
3. Creating the project charter
4. Developing preliminary project scope statement

The Project Charter

Example of charter format:

- Project title
- Project start date
- Project finish date
- Key stakeholders
- Business case supporting the project (e.g. Solving a problem or pursuing an opportunity)
- Deliverables /Project goals
- Budget information
- Foreseeable risks
- TBL and life cycle thinking

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Selling the project charter/scope

Tangible benefits…

- Nominates key stakeholders
- Agrees deliverables/expectations
- Builds commitment & conveys capability
- Documents agreement
- Identifies direction & requirement
- Defines baseline
- Authorizes scheduling
- Facilitates management
- Pre-empts scope changes
- …

Latent dangers…

- Imprecise language
- Inaccurate estimates
- Lack of detail i.e. Ignored specifications
- Inability to close-out
- Potential for misleading information
- Economic 'truth'
- Variation disputes
- Inconsistency with quality specifications
- Schedule delays
- Unavailability of resources
- …

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Project Scope Statement

- Project title
- Project start and finish date
- Detailing key stakeholders
- Project deliverables
- Detailed description of all objectives, characteristics & requirements
- Project justification
- Detailing milestones
- Detailing risks
- Detailing assumptions
- Project success criteria
- TBL & life cycle thinking
- …

Setting project objectives

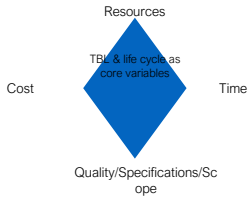
SMART Framework

- Specific
- Measure
- Achieve
- Realistic
- Time frame

- Appropriate
- Unambiguous
- Concise
- Communicated
- Written
- Agreed
- …

**To measure your progress (success) objectively, you must first have clear objectives to measure against

Optimizing & negotiating the project variables



Optimal input

Optimal output

Courage, confidence & TBL and life cycle principles to challenge & change the current status quo

BATNA

The intent of the concept stage is to:

- Document the key project stakeholders
- Confer project status on the idea/initiative/change
- Describe what is to be accomplished
- Document the project in all essential respects before final estimates are made
  - Time, cost, quality, resources, TBL and life cycle
- Communicate the size, complexity/potential risks, TBL & life cycle & interdependencies of the project
- Identify how much is to be achieved (& what will not be achieved)
- …

So, how can you capture the concept in your project?

Search for:

- The project charter
- The project scope
- Client/sponsor briefs
- Proposals
- Information on key stakeholders
- Information detailing the “business case” and alignment with vision, mission & overall company strategy
- Feasibility studies/cost benefit analysis/life cycle assessment analysis, etc.
- Memorandum of understanding
- Risk assessment documents
- Benefits
- Agreed aims & objectives
- …

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Reading week 3

Hartman F. and Ashrafi R, 2004, Development of the SMART project planning framework, *International Journal of Project Management*, pp 499 – 510

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