Essentials of Project Management

Tools and Techniques for Anthropology

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Value of Project Management

- Greater probability of funding for research
- Alignment with sponsors' internal processes
- Marketable job skills

History of Project Management

1890s	Frederick Taylor, *Scientific Management*
1910s	Henry Gantt, chart of work and time
1950s	US Navy, PERT for Polaris submarine
1950s	DuPont, CPM analysis
1960s	Project Management Institute, PMBOK
1980s	IBM, PCs for office use
1990s	Microsoft, MS Project for PCs
2000s	Y2K remediation, Project Office standards

Definition of a project

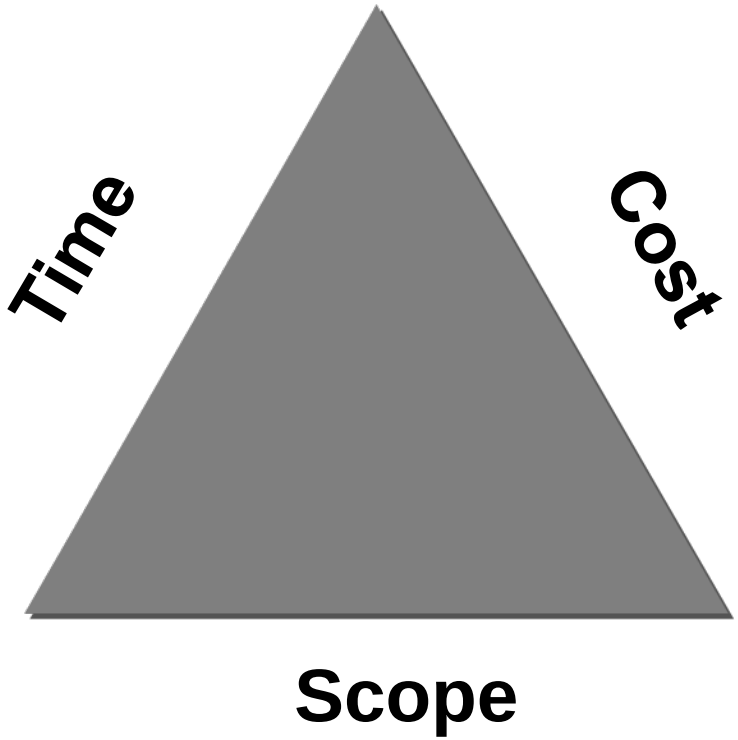
Project Management Body of Knowledge:

> “A temporary endeavor undertaken to create a unique product, service, or result.”

Projects vs. Operations

- Projects:
  - Temporary
  - Unique
  - Goal-oriented
  - Cause/respond to change
  - Assemble ad-hoc teams
- Operations:
  - Ongoing
  - Repetitive
  - BAU
  - Maintain the status quo
  - Employ permanent resources

Triple Constraint



PM Knowledge Areas

- Scope
- Time
- Cost
- Risk
- Quality
- Communications
- Human Resources
- Procurement

PM Processes

- Initiating
- Planning
- Executing
- Monitoring and Controlling
- Closing

Project Initiation

Project Goal Statement

The goal statement describes the primary *benefit* and deliverable.

"*To improve our organization's compliance with regulations,* we will develop a training program."

- The *benefit* forecasts the increase/decrease of a condition that can be measured both qualitatively and quantitatively.
- The deliverable is a tangible outcome whose existence can be objectively proven. PMBOK: "Any unique and verifiable product, result or capability to perform a service that must be produced to complete a process, phase or project."
- Both the benefit and the deliverable are stated from the perspective of the organization as a whole rather than a specific department or function.

Project Charter

- Provides authority for PM to spend money and assign work
- Length and content vary based upon organizational requirements
- Minimum content:
  - Goal statement
  - Sponsor name
  - PM name

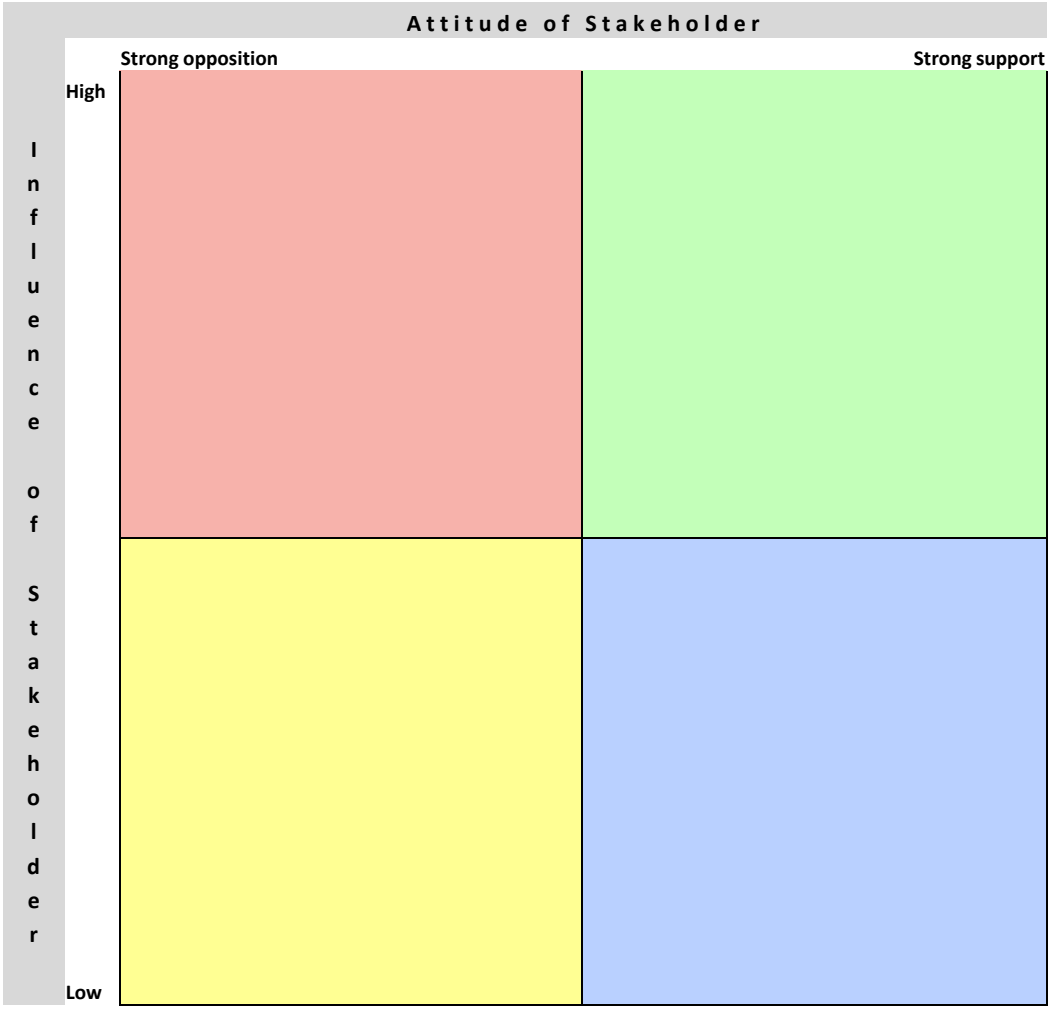
Stakeholders - definition

- Actively involved in the project
- Affected by the project
- Interested in the project
- Influence the project

Stakeholders - roles

- PM
- Sponsor
- Core team
- Extended team
- Customers
- Users
- Community members
- Subject matter experts (SME)
- Functional managers
- Operational managers
- Suppliers

Stakeholders - analysis



Reasons for undertaking projects

- Mandatory
  - Survival
  - Legal compliance
  - Security
- Discretionary
  - Revenue
  - Cost reduction
  - Growth

Business Case

- Goal
- Problem/Opportunity
- Solution/Proposal
- Benefits
- Costs

Project Planning

Definition of scope

Project Management Body of Knowledge:

"The sum of the products, services, and results to be provided as a project."

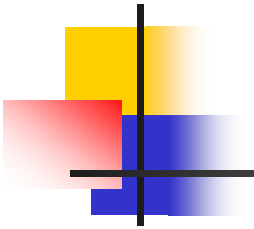
Scope Document

- ✓ Project Charter
- ✓ Stakeholders
- ✓ Business Case
- Success measures
- Deliverables
- Milestones
- Constraints
- Assumptions
- Risks
- Exclusions
- External dependencies
- Estimated schedule
- Estimated budget
- Project team
- Project chain of command
- Product chain of command

Definition of a requirement

Project Management Body of Knowledge:

"A condition or capability that must be met or possessed by a system, product, service, result or component to satisfy a contract, standard, specification, or other formally imposed document."

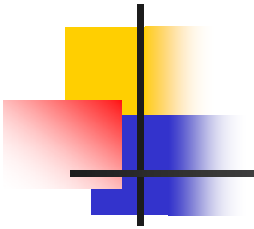


Requirements elicitation

- Interviews
- Focus groups
- Workshops
- Questionnaires/surveys
- Observations
- Prototypes
- Expert judgment
- Product analysis
- Organizational process assets
- Literature research

Requirements Document

- ID
- Description
- Source
- Owner
- Type
- Priority
- Link to deliverable
- Link to benefit
- Verification method
- Status
- Change log
- Comments



Work Breakdown Structure

- Work required to produce deliverables
- Outline format
- Activities, tasks, subtasks
- Hierarchical but not sequential
- Basis for schedule, cost, and risk analysis
- Process definition for team

WBS - Milestones

- Point in time
- Marker of a significant event
- 0% or 100% complete
- Link to deliverable
- Progress monitoring and reporting
- Supervision of remote team members
- Summary for executive stakeholders

Schedule Management Process

1. Build a WBS
2. Identify task dependencies
3. Draft logical task relationships
4. Estimate work packages
5. Calculate initial schedule
6. Assign and level resources
7. Finalize task relationships

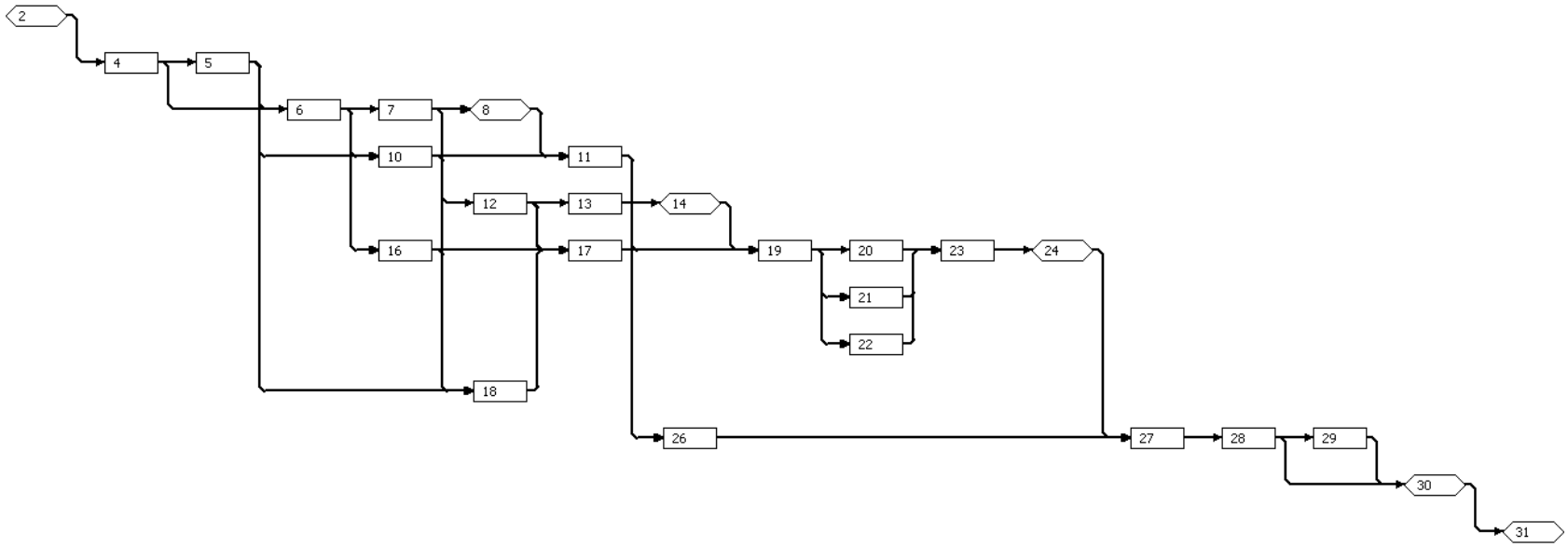
Critical Path calculation

- Establishes the schedule based upon dependencies and duration of tasks
- Identifies tasks that must be completed on schedule to avoid delaying the entire project
- Determines task priorities
- Highlights potential risks and resource constraints

WBS with Activities, Tasks, Milestones

	WBS	Task Name
1	**1**	**Ethnography research project**
2	1.1	Project start
3	**1.2**	**Initiate engagement**
4	1.2.1	Establish sponsorship
5	1.2.2	Identify target community
6	1.2.3	Define scope
7	1.2.4	Obtain approvals
8	1.2.5	Initiation complete
9	**1.3**	**Plan strategy**
10	1.3.1	Define methods
11	1.3.2	Create workplan
12	1.3.3	Recruit team
13	1.3.4	Perform training
14	1.3.5	Planning complete
15	**1.4**	**Manage fieldwork**
16	1.4.1	Select locations
17	1.4.2	Build schedule
18	1.4.3	Identify participants
19	1.4.4	Establish procedures
20	1.4.5	Conduct interviews
21	1.4.6	Peform observations
22	1.4.7	Administer surveys
23	1.4.8	Review findings
24	1.4.9	Fieldwork complete
25	**1.5**	**Document results**
26	1.5.1	Organize data
27	1.5.2	Perform analysis
28	1.5.3	Report conclusions
29	1.5.4	Record outcomes
30	1.5.5	Documentation complete
31	1.6	Project complete

PERT Chart / Activity Network Diagram

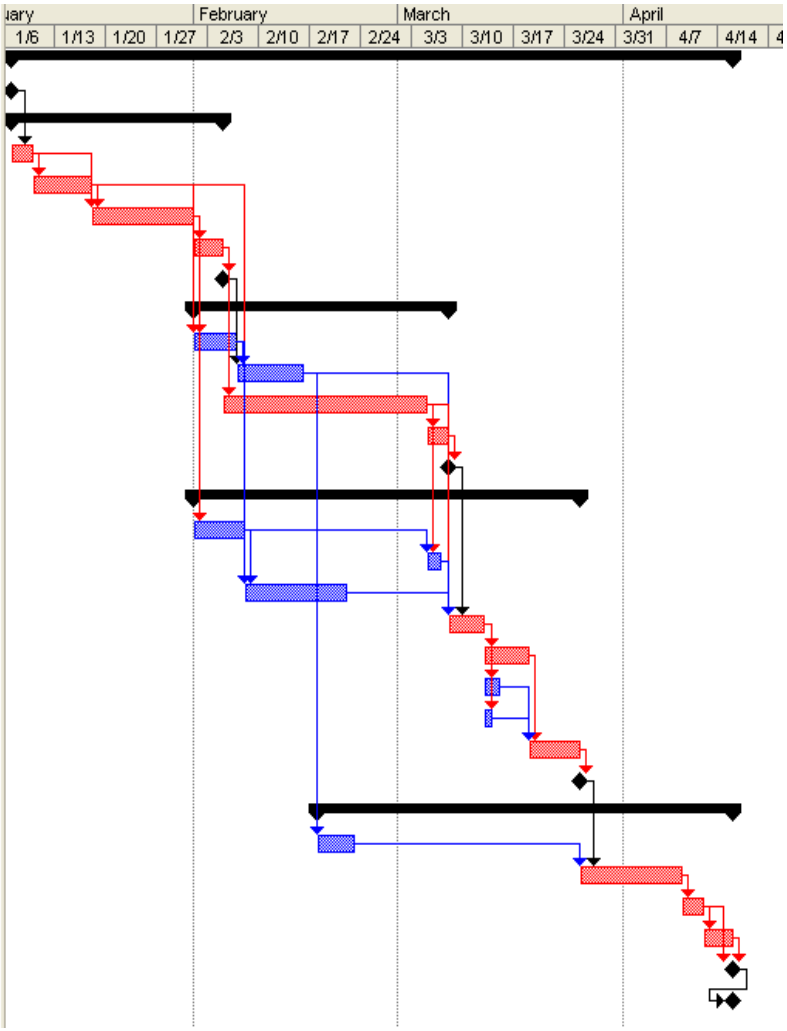


WBS with Durations, Predecessors, Resources

	WBS	Task Name	Duration	Predecessors	Resource Names
1	**1**	**Ethnography research project**	**71 days**		
2	1.1	Project start	0 days		PM
3	**1.2**	**Initiate engagement**	**21 days**		
4	1.2.1	Establish sponsorship	3 days	2	PM
5	1.2.2	Identify target community	6 days	4	Qual
6	1.2.3	Define scope	10 days	4,5	PM
7	1.2.4	Obtain approvals	2 days	6	Sponsor
8	1.2.5	Initiation complete	0 days	7	PM
9	**1.3**	**Plan strategy**	**25 days**		
10	1.3.1	Define methods	4 days	5,6	Qual
11	1.3.2	Create workplan	7 days	10,8	Qual
12	1.3.3	Recruit team	20 days	7	Comm
13	1.3.4	Perform training	3 days	12	Comm
14	1.3.5	Planning complete	0 days	13	PM
15	**1.4**	**Manage fieldwork**	**37 days**		
16	1.4.1	Select locations	5 days	6	Ops
17	1.4.2	Build schedule	2 days	12,16	Ops
18	1.4.3	Identify participants	10 days	5,10,16	Qual
19	1.4.4	Establish procedures	3 days	11,12,18,17,14	PM
20	1.4.5	Conduct interviews	4 days	19	Qual
21	1.4.6	Peform observations	2 days	19	Qual
22	1.4.7	Administer surveys	1 day	19	Quant
23	1.4.8	Review findings	5 days	20,21,22	Qual
24	1.4.9	Fieldwork complete	0 days	23	PM
25	**1.5**	**Document results**	**41 days**		
26	1.5.1	Organize data	5 days	11	Quant
27	1.5.2	Perform analysis	10 days	26,24	Qual
28	1.5.3	Report conclusions	3 days	27	Comm
29	1.5.4	Record outcomes	2 days	28	Ops
30	1.5.5	Documentation complete	0 days	28,29	PM
31	1.6	Project complete	0 days	30	PM

WBS with Gantt Chart showing Schedule and Critical Path

	WBS	Task Name	Duration	Start	Total Slack	Predecessors	Resource Names
1	**1**	**Ethnography research project**	**71 days**	**Mon 1/7/13**	**0 days**		
2	1.1	Project start	0 days	Mon 1/7/13	0 days		PM
3	**1.2**	**Initiate engagement**	**21 days**	**Mon 1/7/13**	**0 days**		
4	1.2.1	Establish sponsorship	3 days	Mon 1/7/13	0 days	2	PM
5	1.2.2	Identify target community	6 days	Thu 1/10/13	0 days	4	Qual
6	1.2.3	Define scope	10 days	Fri 1/18/13	0 days	4,5	PM
7	1.2.4	Obtain approvals	2 days	Fri 2/1/13	0 days	6	Sponsor
8	1.2.5	Initiation complete	0 days	Mon 2/4/13	16 days	7	PM
9	**1.3**	**Plan strategy**	**25 days**	**Fri 2/1/13**	**0 days**		
10	1.3.1	Define methods	4 days	Fri 2/1/13	11 days	5,6	Qual
11	1.3.2	Create workplan	7 days	Thu 2/7/13	14 days	10,8	Qual
12	1.3.3	Recruit team	20 days	Tue 2/5/13	0 days	7	Comm
13	1.3.4	Perform training	3 days	Tue 3/5/13	0 days	12	Comm
14	1.3.5	Planning complete	0 days	Thu 3/7/13	0 days	13	PM
15	**1.4**	**Manage fieldwork**	**37 days**	**Fri 2/1/13**	**0 days**		
16	1.4.1	Select locations	5 days	Fri 2/1/13	10 days	6	Ops
17	1.4.2	Build schedule	2 days	Tue 3/5/13	1 day	12,16	Ops
18	1.4.3	Identify participants	10 days	Fri 2/8/13	10 days	5,10,16	Qual
19	1.4.4	Establish procedures	3 days	Fri 3/8/13	0 days	11,12,18,17,14	PM
20	1.4.5	Conduct interviews	4 days	Wed 3/13/13	0 days	19	Qual
21	1.4.6	Peform observations	2 days	Wed 3/13/13	2 days	19	Qual
22	1.4.7	Administer surveys	1 day	Wed 3/13/13	3 days	19	Quant
23	1.4.8	Review findings	5 days	Tue 3/19/13	0 days	20,21,22	Qual
24	1.4.9	Fieldwork complete	0 days	Mon 3/25/13	0 days	23	PM
25	**1.5**	**Document results**	**41 days**	**Mon 2/18/13**	**0 days**		
26	1.5.1	Organize data	5 days	Mon 2/18/13	21 days	11	Quant
27	1.5.2	Perform analysis	10 days	Tue 3/26/13	0 days	26,24	Qual
28	1.5.3	Report conclusions	3 days	Tue 4/9/13	0 days	27	Comm
29	1.5.4	Record outcomes	2 days	Fri 4/12/13	0 days	28	Ops
30	1.5.5	Documentation complete	0 days	Mon 4/15/13	0 days	28,29	PM
31	1.6	Project complete	0 days	Mon 4/15/13	0 days	30	PM



Cost Management process

1. Establish the WBS Critical Path with task Duration based upon availability of the resource responsible for completion
2. For each WBS task with multiple participants add subtasks showing involvement of other human resources
3. Add subtasks to the WBS showing usage of material resources
4. Add a Work column to the WBS and show labor effort for human and material resources
5. Calculate total hours/days of usage for each resource and total cost based upon hourly/daily rates

Definition of risk

Project Management Body of Knowledge:

"An uncertain event or condition that, if it occurs, has an effect on at least one project objective (scope, schedule, cost)."

Negative = threat

Positive = opportunity

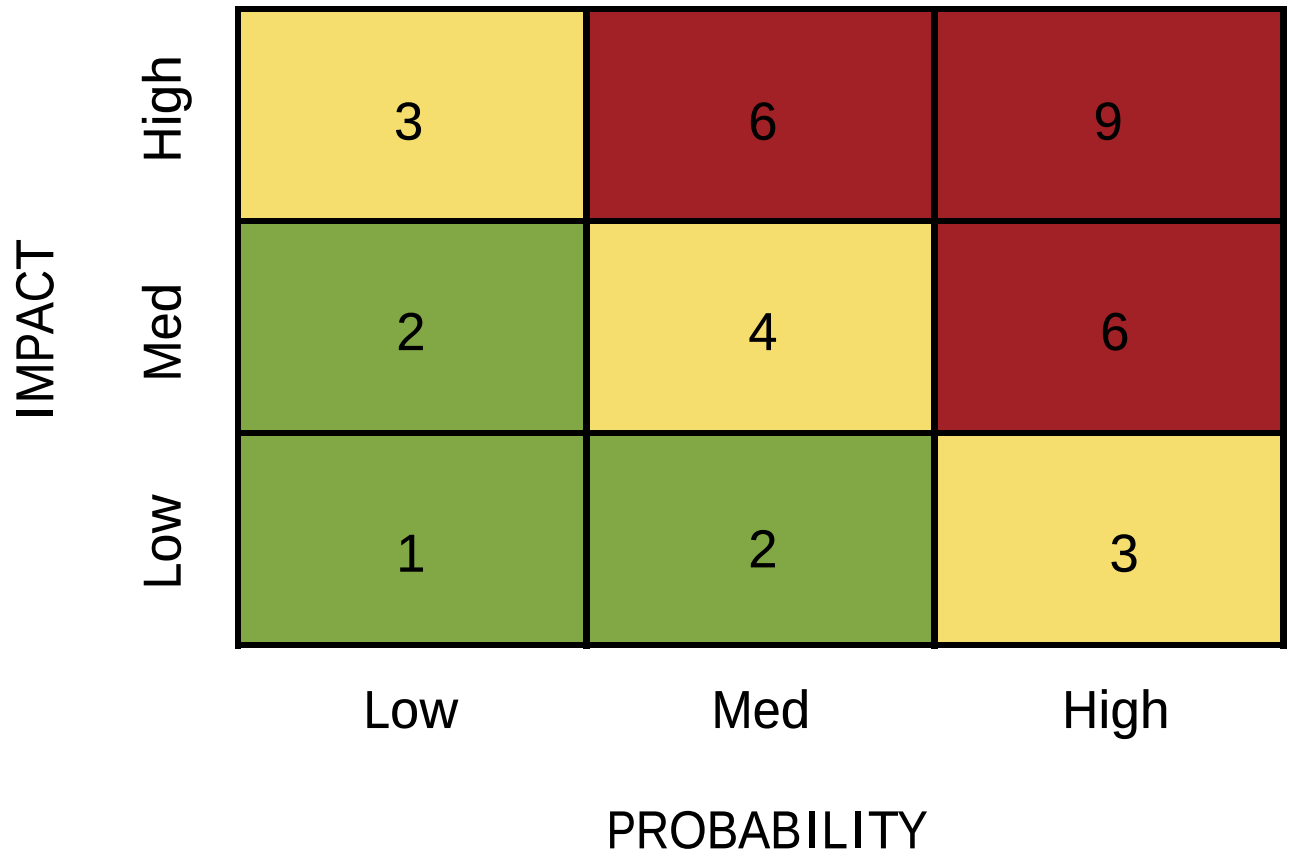
Risk Management

- Identification of risks
- Analysis and prioritization
- Strategies for response
- Contingency plans and reserve funds
- Continuous monitoring and controlling

Risk identification methods

- Brainstorming
- Interviews
- Documentation review
- Delphi technique
- Root cause analysis
- SWOT
- Expert judgment
- Interviews
- Assumptions
- Quality plan
- Risk profile
- Elephant hunt

Risk analysis - qualitative

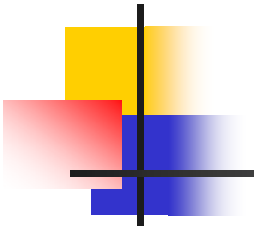


Responses for threats

- Avoid
  - Eliminate the task or deliverable
- Transfer
  - Make it someone else's problem and liability
- Mitigate
  - Add tasks or deliverables to reduce the probability/impact
- Accept
  - Rely upon the contingency plan and reserve fund

Risk Register

ID	1
WBS	3.2.2
Priority	6
Probability	2
Impact	3
Description	The dog eats my homework.
Response	Mitigate
Strategy	Make a photocopy of the finished work. Take the dog for a walk to tire him out.
Trigger	Dog is hiding. Wet clumps of paper on the floor.
Contingency	Skip class to avoid turning in homework. Download similar homework purchased on the internet.
Owner	P. Pan
Estimated cost	$50
Date reported	10/25/2012
Date closed	
Current Status	Open
Comments	Cost estimate based on lost allowance revenue.



Quality Management

- Quality Assurance
  - How good does it have to be? According to whom?
- Quality Control
  - How do we figure out whether we met the QA standards?
- Testing
  - Did we build the right thing? Did we build it right?

Communication Management

- Audience
- Content
- Frequency
- Escalation procedures
- Reports and meetings
- Repetition
- Multiple channels
- Informal MBWA

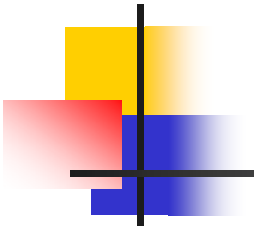
Human Resources Management

- Staffing plans
- Onboarding processes
- Recruitment procedures
- Organizational development
- Performance appraisal
- Teamwork

Procurement Management

- Needs analysis
- Organizational procedures
- Make-or-buy decisions
- Outsourcing decisions
- Vendor selection
- Contract administration

Project Execution

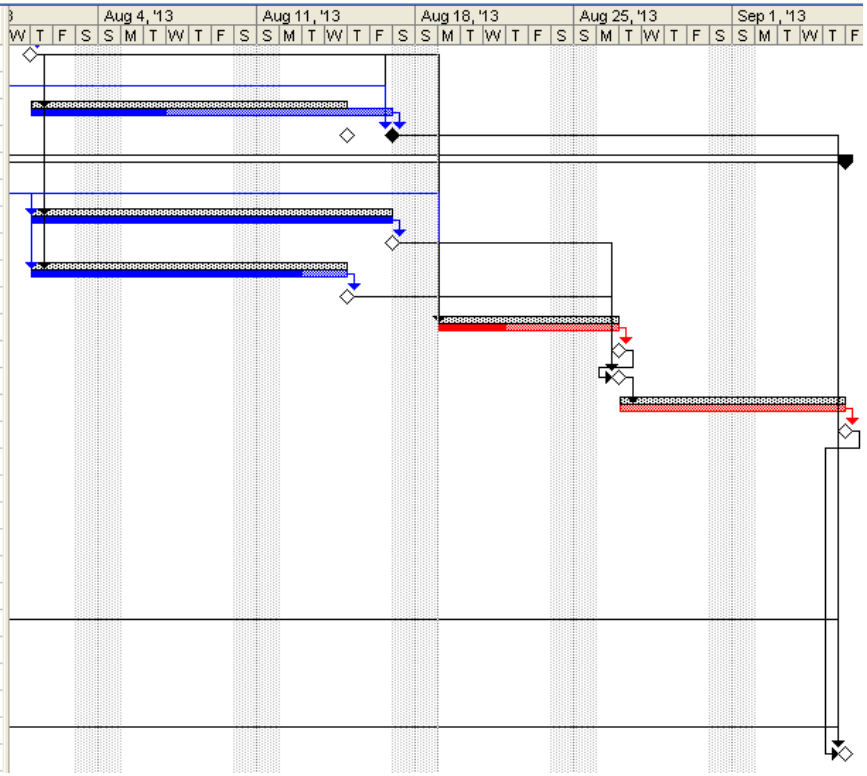


Monitoring and controlling

- Measurements for schedule and cost
- Status reports for other elements of the plan
- Change management procedures

Performance measurement - Schedule

	WBS	Task Name	Duration	Work	% Complete
24	1.6	Cleanup complete	0 days	0 hrs	0%
25	1.7	Arrange for disposal	6 days	48 hrs	0%
26	1.8	Conduct DEP review	12 days	96 hrs	33%
27	1.9	DEP approval obtained	0 days	0 hrs	0%
28	**2.0**	**Build park**	**90 days**	**448 hrs**	**41%**
29	2.1	Create site plan	20 days	160 hrs	0%
30	2.2	Manage landscaping	12 days	96 hrs	100%
31	2.3	Landscaping complete	0 days	0 hrs	0%
32	2.4	Install infrastructure	10 days	80 hrs	80%
33	2.5	Infrastructure installed	0 days	0 hrs	0%
34	2.6	Install furniture	6 days	48 hrs	50%
35	2.7	Furniture installed	0 days	0 hrs	0%
36	2.8	Park construction complete	0 days	0 hrs	0%
37	2.9	Conduct Parks Department review	8 days	64 hrs	0%
38	2.10	Parks Commisioner approval obtained	0 days	0 hrs	0%
39	**3.0**	**Organize logistics**		**640 hrs**	**0%**
40	3.1	Arrange transportation	10 days	80 hrs	0%
41	3.2	Provide refreshments	8 days	64 hrs	0%
42	**3.3**	**Manage volunteers**	**62 days**	**256 hrs**	**0%**
43	3.3.1	Recruit volunteers	30 days	240 hrs	0%
44	3.3.2	Train volunteers	2 days	16 hrs	0%
45	3.3.3	Volunteer preparations complete	0 days	0 hrs	0%
46	**3.4**	**Manage communications**	**30 days**	**240 hrs**	**0%**
47	3.4.1	Publish press release	10 days	80 hrs	0%
48	3.4.2	Publish volunteer instructions	20 days	160 hrs	0%
49	3.5	Logistics complete	0 days	0 hrs	0%
50	99	Project completion	0 days	0 hrs	0%



Tracking Gantt Chart – as of August 19

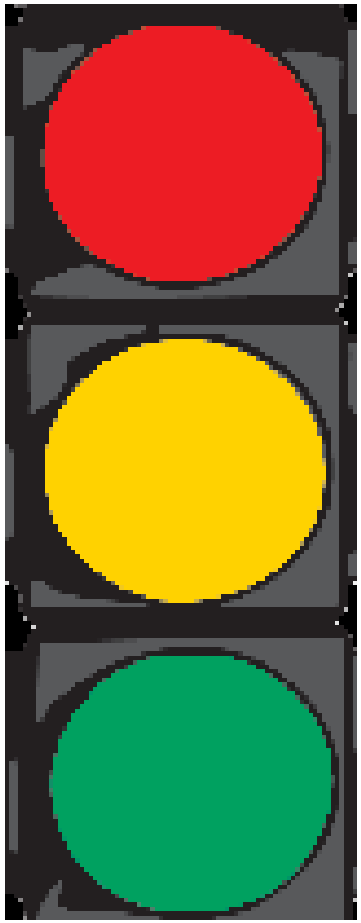
Performance measurement - Cost

ID	Task	Planned			Actual		
		Labor	Equipment	Materials	Labor	Equipment	Materials
2.1	Create site plan	160 hrs	0.00	1,000.00	190 hrs	0.00	800.00
2.2	Manage landscaping	96 hrs	8,000.00	500.00	84 hrs	8,000.00	760.00
2.4	Install infrastructure	80 hrs	10,000.00	750.00	250 hrs	12,000.00	900.00
2.6	Install furniture	48 hrs	7,200.00	250.00	66 hrs	6,000.00	200.00

Progress tracking - status reports

- Accomplishments
- Tasks completed
- Closed action items
- Closed risks
- Closed issues
- Decisions made
- Next steps
- New/open tasks
- New/open action items
- New/open risks
- New/open issues
- Decisions needed

Project health indicators



RAG Indicator

- % Variance
- OK – Warning – Intervention

Change Management process

- Baseline plans are created and published.
- Work is performed according to the plan.
- Information is gathered to determine current status and variations.
- Variances are identified and causes determined.
- Corrective actions are determined.
- Corrective actions are reviewed, approved, and executed.
- Project plans are updated and re-published.

Change Management – log data

ID	
Description	
Category	[Custom list based upon project deliverables]
Priority	[High, Medium, Low]
Status	[Open, Closed]
Resolution	[Accepted, Rejected, Deferred]
Schedule impact	
Budget impact	
Requirements impact	
Risk impact	
Date identified	
Date resolved	
Assigned to	
Action plan	
Dependencies	
Approved by	
Date approved	
Notes	

Project Closure

Closing checklist

- Scope verification
- Acceptance of deliverables
- Operational instructions
- Stakeholder feedback
- Lessons Learned
- Performance evaluations
- Documentation updates and filing
- Financial closeout
- Contractual closeout
- Release of staff
- Closing Report