

Introduction to Project Management

Modeling after NYS ITS

What is Project Management?

- **Project management** is “the application of knowledge, skills, tools and techniques to project activities to meet project requirements.”

What is a “Project” and what are its attributes?

A project is a unique effort with a defined beginning, a defined end, specific deliverables, and defined resources.

- A project:
 - Has a unique purpose.
 - Is temporary.
 - Requires resources, often from various areas.
 - Has stakeholders

Advantages of Using Project Management

- To define & organize the project
- To plan the project
- To track & manage the project
- Better control of financial, physical, and human resources.
- Improved customer relations.
- Lower costs.
- Higher quality and increased reliability.
- Improved productivity.
- Better internal coordination.

Project Success Factors

- 1. Executive support
- 2. User involvement
- 3. Experienced project manager
- 4. Clear business objectives
- 5. Minimized scope
- 6. Standard software infrastructure
- 7. Firm basic requirements
- 8. Formal methodology
- 9. Reliable estimates
- 10. Other criteria, such as small milestones, proper planning, competent staff, and ownership

Terminology

<http://getpmpcertified.blogspot.com/2011/07/glossary-of-terms-used-by-pmbok-for-pmp.html>

- Baseline
- Change Request
- Charter
- Critical Path
- Cost/Budget
- Deliverable
- Kick Off
- Mitigation
- Milestones
- Quality
- Risk
- Scope
- Scope Creep
- Schedule
- Status Report
- Stakeholders
- Work Breakdown Structure (WBS)

Project Stakeholders

- Stakeholders include:
 - Project sponsor
 - Project manager
 - Technical lead
 - Project team
 - Support staff
 - Customers
 - Users
 - Suppliers
 - Opponents to the project
 - Project Management Office (PMO)

Project Management Office (PMO)

- A PMO is an organizational group responsible for coordinating the project management function throughout an organization.
- Possible goals include:
 - Collect, organize, and integrate project data for the entire organization.
 - Develop and maintain templates for project documents.
 - Develop or coordinate training in various project management topics.
 - Develop and provide a formal career path for project managers.
 - Provide project management consulting services.
 - Provide a structure to house project managers while they are acting in those roles or are between projects.

The Role of the Project Manager

- Job descriptions vary, but most include responsibilities such as planning, scheduling, coordinating, and working with people to achieve project goals.

Good Project Management Skills

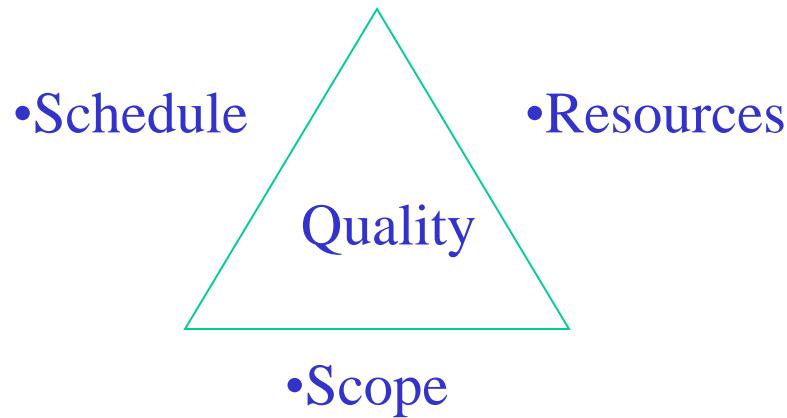
- Leadership and professionalism are crucial.
- Know what your sponsor expects from the project, and learn from your mistakes.
- Be decisive
- Trust your team and delegate decisions.
- Know the business.
- Be organized
- Stand up for yourself.
- Be a team player.
- Stay organized and don't be overly emotional.
- Work on projects and for people you believe in.
- Think outside the box and encourage new ideas
- Communicate & motivate
- Be flexible
- Listen!!!!

Fifteen Project Management Job Functions

- Define scope of project.
- Identify stakeholders, decision-makers, and escalation procedures.
- Develop detailed task list (work breakdown structures).
- Estimate time requirements.
- Develop initial project management flow chart.
- Identify required resources and budget.
- Evaluate project requirements.
- Identify and evaluate risks.
- Prepare contingency plan.
- Identify interdependencies.
- Identify and track critical milestones.
- Participate in project phase review.
- Secure needed resources.
- Manage the change control process.
- Report project status.

The Triple Constraint

It is the project manager's duty to balance these three often-competing goals.



5 Phases to a Project Lifecycle

- Origination
- Initiation
- Planning
- Execution
- Closeout

Phase 1

Project Origination

Document the vision and request approval for the project

- Proposal created and evaluated
 - Organizational Impact
 - Cost Benefit Analysis
 - Objectives
 - Resources
 - Funding
 - Budget

Decision Point: --- > Approved or Denied?

Phase 2

Project Initiation

Define project parameters

- Project plan created
 - Project Charter
 - Defines scope & deliverables
 - Define resources (vendors, equipment, etc.)
 - Define team members
 - Identifies risks and mitigation strategies
 - Defines budget & schedule
 - Defines communication plan
- Kick off meeting held

Phase 3

Project Planning

Create a detailed blueprint of how the project will be executed.

- Risk management
- Change control process
- Training plans
- Acquisition plan
- Issue escalation process
- Refine charter
- Refine risk

Phase 4

Project Execution

Develop the product or service that the project was commissioned to deliver.

- Complete deliverables
- Manage scope creep
- Project status reports
- Obtain acceptance

Phase 5

Project Closeout

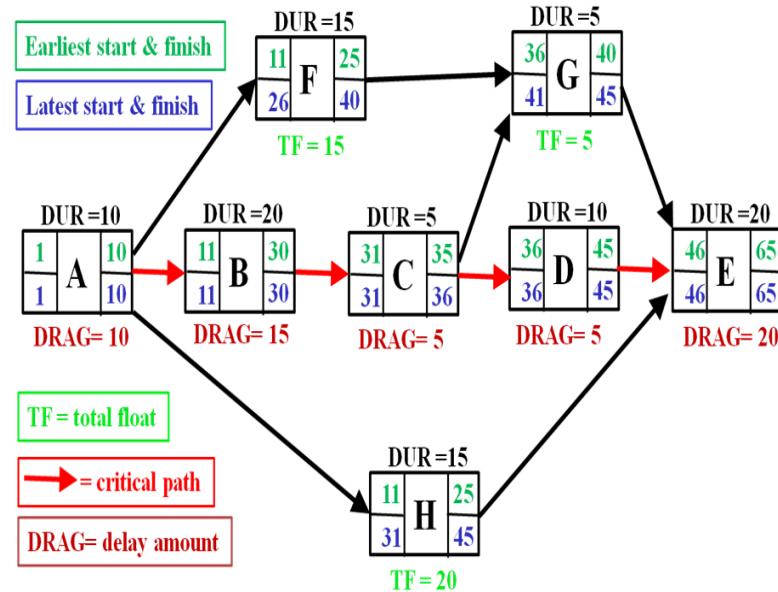
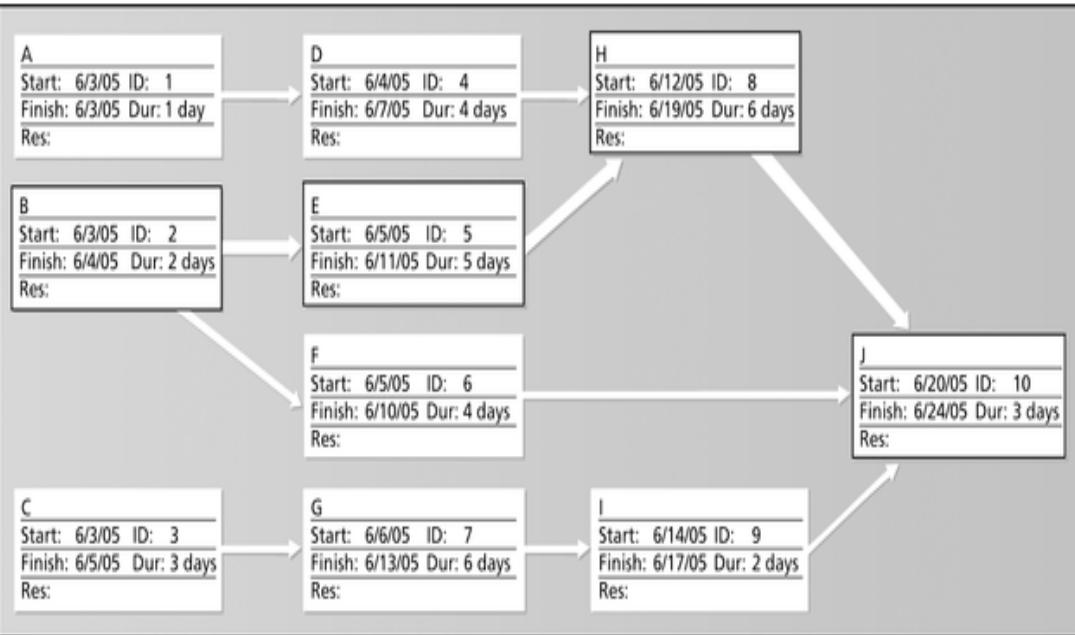
Capture lessons learned and formally end the project

- Ensure that all closing activities have been completed
- Assess actual project cost
- Conduct project close out/review meeting (PIR)
- Identify persons responsible for post project tasks
- Reward and recognize team members
- Party!

Project Management Tools and Techniques

- Project management tools and techniques assist project managers and their teams in various aspects of project management.
- Specific tools and techniques include:
 - Project charters, scope statements, and WBS (scope).
 - Gantt charts, network diagrams, critical path analyses, critical chain scheduling (time/schedule).
 - Cost estimates and earned value management (cost).

Sample Network Diagram



Each box is a project task from the WBS. Arrows show dependencies between tasks. The bolded tasks are on the critical path. If any task on the critical path takes longer to complete than planned, the whole project will slip unless something is done.

Miscellaneous acronyms & formulas to calculate variance

Acronyms

- AC Actual Cost
- BAC Budget at Completion
- BCR Benefit Cost Ratio
- CBR Cost Benefit Ratio
- CPI Cost Performance Index
- CV Cost Variance
- DUR Duration
- EAC Estimate at Completion
- EF Early Finish
- EMV Expected Monetary Value
- ES Early Start
- ETC Estimate to Complete
- EV Earned Value
- FV Future Value
- IRR Internal Rate of Return
- LF Late Finish
- LS Late Start
- NPV Net Present Value
- PERT Program Evaluation and Review Technique
- PTA Point of Total Assumption
- PV Planned Value
- PV Present Value
- ROI Return on Investment
- SPI Schedule Performance Index
- SV Schedule Variance
- VAC Variance at Completion
- Sigma / Standard Deviation
- [^] “To the power of” ($2^3 = 2 \times 2 \times 2 = 8$)

Network Diagram

- Activity Duration = EF - ES + 1 or Activity Duration = LF - LS + 1
- Total Float = LS - ES or Total Float = LF - EF
- Free Float = ES of Following - ES of Present - DUR of Present
- EF = ES + duration - 1
- ES = EF of predecessor + 1
- LF = LS of successor - 1
- LS = LF - duration + 1

Earned Value

- CV = EV - AC
- CPI = EV / AC
- SV = EV - PV
- SPI = EV / PV
- EAC ‘no variances’ = BAC / CPI
- EAC ‘fundamentally flawed’ = AC + ETC
- EAC ‘atypical’ = AC + BAC - EV
- EAC ‘typical’ = AC + ((BAC - EV) / CPI)
- ETC = EAC - AC
- ETC ‘atypical’ = BAC - EV
- ETC ‘typical’ = (BAC - EV) / CPI
- ETC ‘flawed’ = new estimate
- Percent Complete = EV / BAC * 100
- VAC = BAC - EAC
- EV = % complete * BAC

Work Breakdown Structure

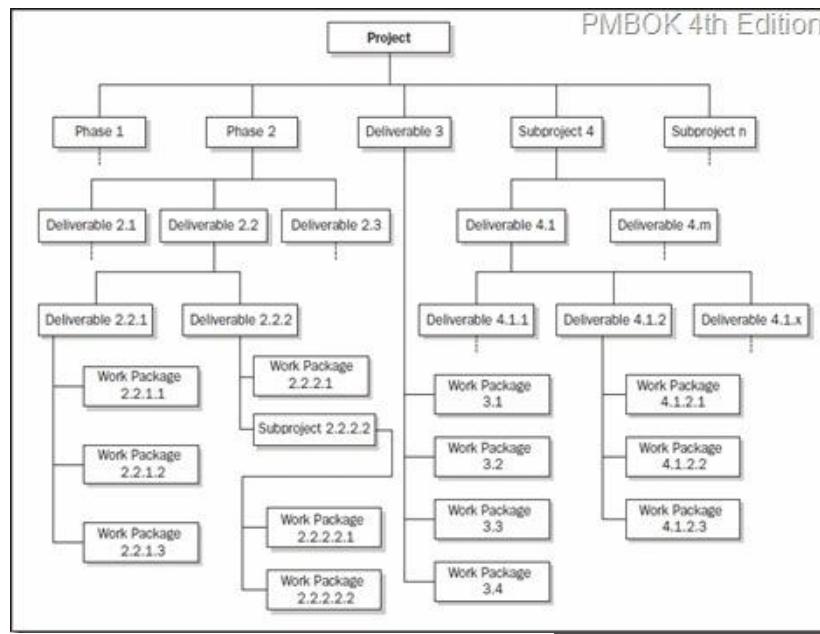
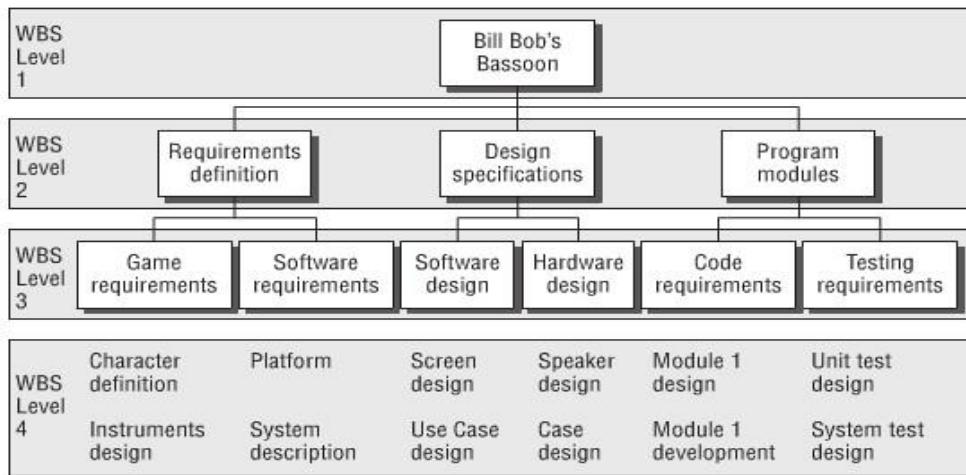


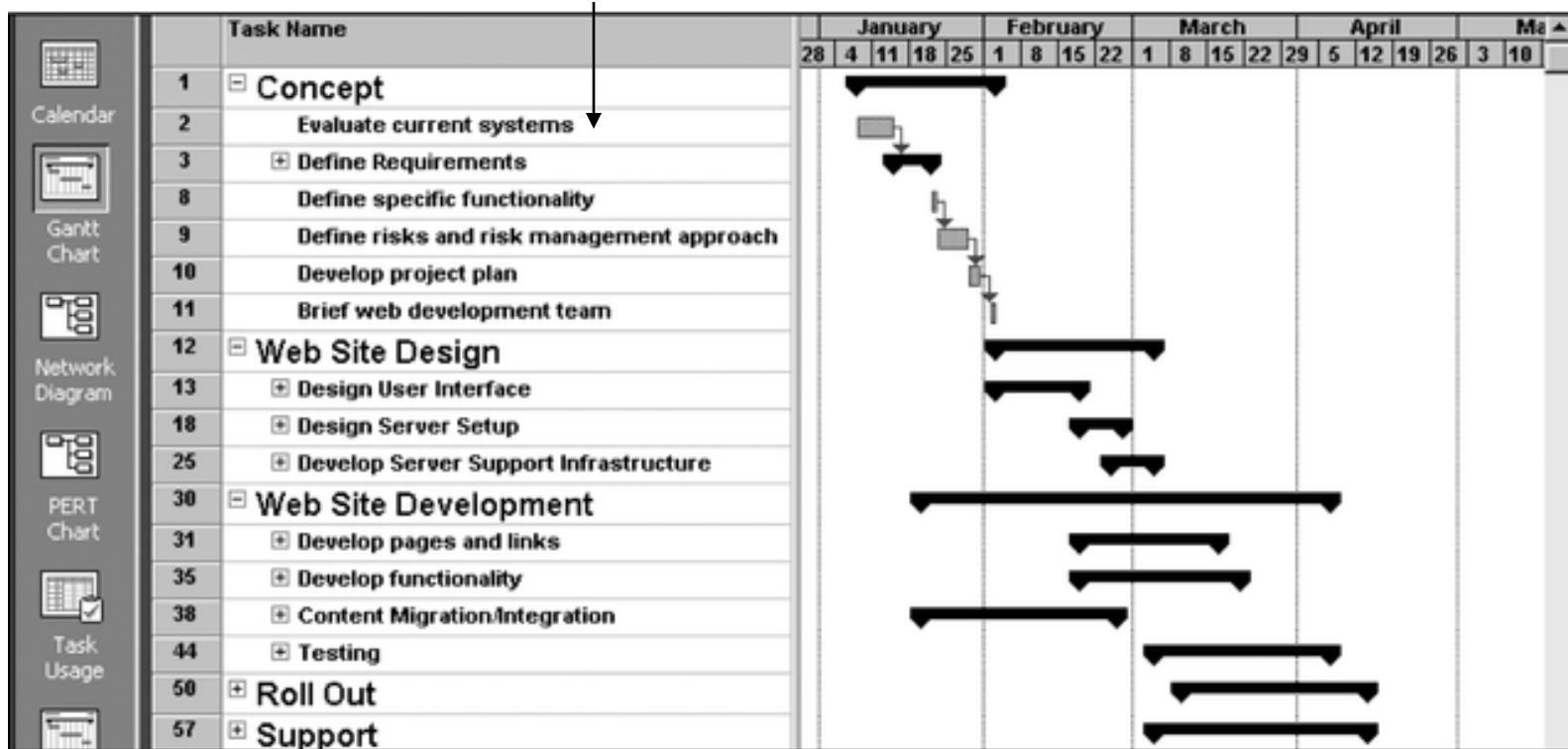
FIGURE 3.6 WBS Levels 1 through 4



Task Name	WBS	Duration	% Complete	WBS Predecessors	WBS Successors
Phase 1 - Project Planning					
- Customer Meeting	1.1	10.25 days	100%		1.1.5
Scope Definition	1.1.1	5 days	100%	1.2,1.1.3[SS]	
Review Consultant Requirements	1.1.2	2 hrs	100%	1.1.1.1	
Review MSU Requirements	1.1.3	14 hrs	100%	1.1.1.1[SS]	1.1.2[FF]
Team Selection	1.1.4	16 hrs	100%	1.1.1.3[FF]	1.1.3
Team Briefing - Concept Overview	1.1.5	2 hrs	100%	1.1.2	
Tools Creation	1.1.6	4 hrs	100%	1.1.1	1.1.6
Plan Draft	1.1.7	8 hrs	100%	1.1.1.1	1.1.6
Team Briefing - Project Overview	1.1.8	2 hrs	100%	1.1.5	1.2
Phase 2 - Execution					
- Data Collection	1.2.1	24.25 days	7%	1.1.6	1.2.2
New Campus Housing Survey	1.2.1.1	4 hrs	100%	1.2.1.2	
Collate Survey Information	1.2.1.2	12 hrs	100%	1.2.1.1	1.2.1.3
Send Survey Information to Team	1.2.1.3	1 hr	100%	1.2.1.2	1.2.1.4
Data Collection - Near Campus Properties	1.2.1.4	30 hrs	0%	1.2.1.3	1.2.2.1,1.2.1.5
Deliver Near Campus Info to Maxfield Group	1.2.1.5	2 hrs	0%	1.2.1.4	
Data Collection - On Campus Housing	1.2.1.6	24 hrs	0%	1.2.1.9	1.2.2.2
Region 9 Database Survey- Property Info	1.2.1.7	30 hrs	0%	1.2.1.4[SS]	

Sample Gantt Chart

Work Breakdown Structure (WBS)



The WBS is shown on the left, and each task's start and finish dates are shown on the right..

In Summary

- A project has several attributes, such as being unique, temporary
- Govern quality & expectations with the “Triple Constraint”
- Project stakeholders can significantly impact a project
- Successful project managers must possess and development many skills and lead their teams by example.
- There are 5 phases to a projects lifecycle
- Become familiar with the tools of the trade and the terminology

Questions or Comments?

Thank You For Coming