Introduction to Project Management Discipline

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<a new window of opportunities>

Agenda

- Project Management Basics
- The Project Management Institute (PMI ®) and the Project Management Body of Knowledge (PMBoK)
- Best Practices
- What are the processes management groups?
- A project workbook and a project plan
- Where do I start?

Project Management Basics

- What is a project?
- What is the Project Manager role?
- Whose are stakeholders?
- What is the project life cycle?

What is a Project?

- A project is a **transitory undertaking to create a unique product**, service or deliverable (PMI, 2004).
- A unique set of coordinated activities, with definite starting and finishing points, **undertaken by an individual or organization** to meet specific objectives within **defined time, cost and performance parameters** (APM, 2000).
- A finite and **discipline effort** which aim to reach a unique specific goal (our own definition).

What is a Project

Project Samples

- The latest trip of the space shuttle
- An updated version of the Human Resources manual
- A wedding
- A tattoo

Non- Project Samples

- Manufacturing repetitive processes to produce the same deliverable (a drug)
- A routinely task (driving your car, breakfast, sleep, doing your aerobics)

The Project Manager (PM)

- This is the accountable resource by the sanction organization, to **manage project resources, budget, and accomplish project goals**.
- This is typically the sole point of contact for the project.
- This is the integrator resource of the project plan and their subsidiaries.

Typical Project Manager skills

|	
❖ Proactive	❖ Organizing
❖ Communicating	❖ Integrator
❖ Presenting	❖ Supporting
❖ Discipline	❖ Motivating
❖ Influencing	❖ Delegating
❖ Directing	❖ Coaching
❖ Planning	❖ Managing conflict

Project Stakeholders

- "These are the persons or organizations that are actively involved in the project, or whose interests may be positively or negatively affected by execution or completion of the project... (PMI, 2004)".
- It is basically anyone (a person, organization or entity) who has any interest with the project.

The Project Life Cycle

| Starting Phase | TRANSITIONAL PHASES | Ending Phase |
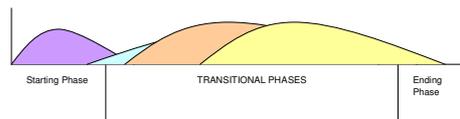
- There is an initial, starting, or opening phase on every project as well as a closing, finishing or concluding phase.
- Transitional phases, from the initial to the ending stage, could differ from business to business or project to project.

Project Management Institute (PMI)

- Established in Pennsylvania, USA in 1960
- Not-for-profit organization
- World leading professional association, serving the project management community with nearly 150,000 members worldwide
- One of the many milestone of this organizations if the Project Management Body of Knowledge (PMBoK)

The Project Management Body of Knowledge (PMBoK)

- This is a document, published by the PMI, which contains the generally acknowledged best practices to most projects, most of the time (PMI, 2004).
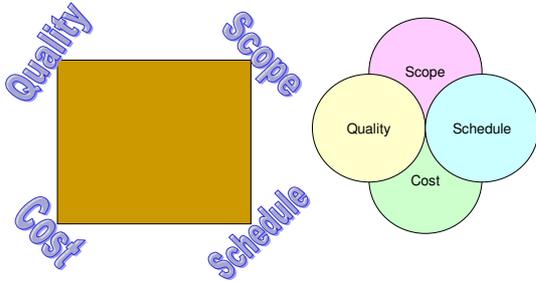
Common

BEST PRACTICES

The Perfect Square or Perfect Balance

Quality Scope
Cost Schedule

Scope
Quality Schedule
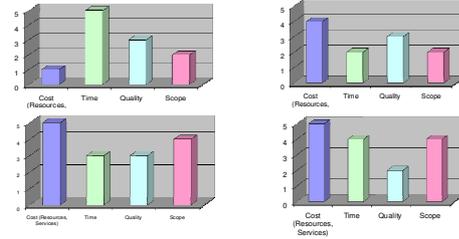Cost

If you change one of these variables…

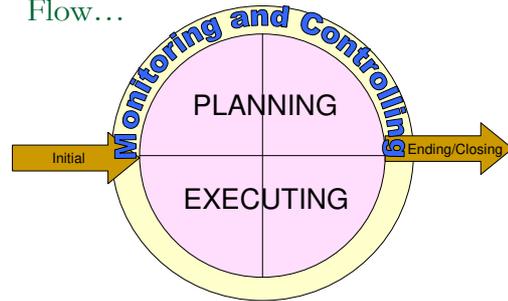The change of one of these variables, has a direct effect on the others

Deming Cycle

PLAN | DO
ACT | CHECK
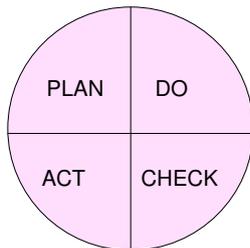
The Process Management Groups Flow…

Monitoring and Controlling
PLANNING
EXECUTING
Initial
Ending/Closing

Initiating Process Group/Domain…

Defines, **launch and authorizes** a project or a project phase (PMI, 2004).

START

Planning Process Group/Domain…

Defines and mature the project scope, develop the project management plan, and **identify and schedule the project activities** that occur within the project (PMI, 2004).

Executing Process Group/Domain…

Processes performed to **complete the work defined** in the project management plan to accomplish the project's objectives defined in the project scope statement (PMI, 2004).

Monitoring and Control Process Group/Domain…

Performed to **measure and monitor** project execution so that corrective action can be taken when necessary to control the execution of the phase or project (PMI, 2004).

Closing Process Group/Domain…

Formalize acceptance of the product, service, or result and brings the project or a project to an orderly end (PMI, 2004).

The Project Workbook

- **Documentation and communication tool** for the project manager, project team and other stakeholders
- Contains :
  - The project plan and their subsidiaries
  - Supporting documentation
  - Preliminary and important interim documents
  - Plus any other valuable records
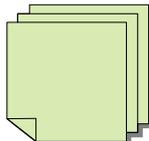
The Project Plan

The Project Plan is a **formal, approved** document/documents which define, and assist with the execution, control and monitoring of the project.

The Project Plan Subsidiaries

- Scope Management
- Plan Schedule
- Quality Plan
- Resource Management Plan
- Risk Management Plan
- Configuration Management
- Communication Plan
- Cost Management Plan

The WBS

- The Work Breakdown Structure (WBS) is where the project management planning begins.

- This process allows the project management team and other stakeholders to decompose the project into deliverables.

Your final WBS

Try to sort and classify your effort and deliverables at one of the four levels:
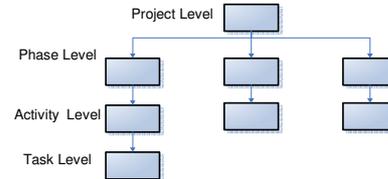
Note: Use the 8/80 heuristic rule!

Where do I start ?

- Outline your project workbook
  - Define your project plan components
  - Perform your estimates
- Prepare a WBS

The Starting Phase

- The communication plan
- A kick off meeting
  - First meeting with the project team and the client of the project.
- A CLEAR!!! Scope
  - Clear, measurable, verifiable deliverables
  - Unambiguous requirements
  - Explicit project success criteria
  - Well defined project activities
  - Agreed by ALL parts

The Kick Off Meeting (points to cover)

- Always prepare an agenda!
- Background
  - customer relationship description
  - events that led to an agreement that starts this initiative
  - briefly explain the agreement.
- Scope
  - Define the boundaries of the project.
  - Review the Statement of Work.
- Strategy
  - Explain the importance or significance of the project and the project management practices that will lead the project to success

The Kick Off Meeting (points to cover)

- Schedule
  - Provide the scheduled starting and ending dates, and major milestones with their deliverables.
- Project Description
  - Provide the Project Plan,
  - a list of deliverables with due dates and
  - a description of each deliverable.
- Roles and Responsibilities
  - Introduce the members of the team, their roles and responsibilities, and any area of expertise they may have.
  - Explain approval procedures and decision-making procedures.

The Kick Off Meeting (points to cover)

- **Customer**
  - Provide information about the customer, crucial contacts and current relationships.
- **Contacts**
  - Provide a complete listing of names, phone numbers, addresses, fax numbers, and voice mail numbers for all project stakeholders
  - Also include names and numbers of individuals that could assist because of their expertise in a specific area.
- **Organizational Charts**
  - Include organizational charts for both the organization and the project.

The Kick Off Meeting (points to cover)

- **Communications**
  - Describe the method for status reporting--including frequency, format, transmission (electronic mail, fax)--and other types of communications required (based in Communications Plan).
- **Maps**
  - Include maps of the area, restaurants, places of interest, and so forth.
- **Resources Used**
  - Describe the resources that will be used or available for the project.

The Kick Off Meeting (points to cover)

- **Supportive Documentation**
  - Include any supporting documentation such as feasibility studies or technical documents
- **Project Workbook**
  - Explain the process for keeping the Project Workbook up-to-date and determine its physical location. Discuss the importance of the Project Workbook

The Planning Phase – complete your project plan

- Creating your final WBS
- Crafting your final metrics, estimating duration and effort
- Allocate your performing resources (contracting, materials, services)
- Allocate your costs
- Construct your network
- Refining your final schedule
- Optimizing your plans
- Baseline your plan!

Documenting your project activities

ALL your activities should stick to the following suggestions:

- Verb/Noun format "Develop initial project communication plan"
- Has specific duration
- Has a specific start and end dates
- Specific progress measuring metrics (0/100, 0/50/100)
- Assigned to an specific person
- A clear deliverable (so the task can be closed)
- A WBS code

Group Exercise – Documenting your project activities

What do I need to do to accomplish my goal?
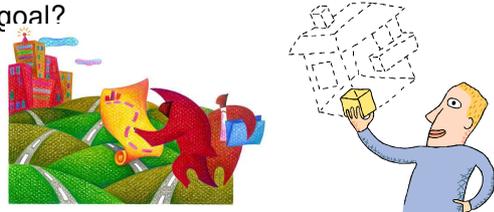
Estimating resources, cost and duration

- Effort base or fixed duration - tasks that are sensitive to the amount of resources
- Fixed duration - duration DOES NOT change as a function of resources applied
- An estimating formula (PERT=(P+4M+O)/6)
- Define the Project calendar
- Define Resource calendar
- Assign costs based on calculated duration, fixed costs and/or individual resources costs

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Estimating Costs

Exercise: Building and painting a fence

Specifications:
3 sides
    1 day per side
2 workers
8 effort hours per day
$ 1,200 worth of paint (fixed cost)

3 sides x 1 day per side = 3 days (DURATION)

3 days x 2 workers (8/hrs per day)= 48 hours (EFFORT)

Estimating Costs

Exercise: Building and painting a fence
Specifications:
$ 1,200 worth of paint (fixed cost)
48 total effort hours

Resource	Type	Cost/Rate
Carpenter	Resource	$ 60/hr
Painter	Resource	$ 50/hr
Paint	Fixed cost	$ 1,200

Assumption: there is equal effort between the carpenter and the painter

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Estimating Costs

Exercise: Building and painting a fence
Specifications:
Resource cost ;   1 painter (50 * 24) = $ 1,200
Resource cost ;   1 worker (60 * 24) = $ 1,440
Fixed cost ; $ 1,200

Total cost of the activity $ 3,840

Group Exercise - Estimating Costs

Specifications:
Task - Write a Payroll program
        Effort - 70 persons-day

Allocated resources
5 programmers
2 analysts
Computer time (data center)

Role/Description	Type	Cost/Rate
Programmer	Resources	$ 40/hr
Analyst	Resource	$ 70/hr
Computer time	Fixed cost	$ 2,000

What is the duration of the task?_____ days

Group Exercise - Estimating Costs

Specifications:
Task - Write a Payroll program
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Role/Description	Type	Cost/Rate
Programmer	Resources	$ 40/hr
Analyst	Resource	$ 70/hr
Computer time	Fixed cost	$ 2,000

What is the duration of the task?
        Duration of the task = 70 persons-day / 7 persons
                = 10 days

Group Exercise - Estimating Costs

Specifications:
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What is the **programmer** cost?_____ dollars

Group Exercise - Estimating Costs

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Task - Write a Payroll program
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5 programmers
2 analysts
Computer time (data center)

Role/Description	Type	Cost/Rate
Programmer	Resources	$ 40/hr
Analyst	Resource	$ 70/hr
Computer time	Fixed cost	$ 2,000

What is the **programmer** cost? 10 days * $40/hr * 8 hrs
    Duration of the task = 70 persons-day / 7 persons
                     = 10 days
    Programmer cost = 10 days * 8 hrs/day * $40/hr
                     = $ 3,200

Group Exercise - Estimating Costs

Specifications:
Task - Write a Payroll program
      Effort - 70 persons-day

Allocated resources
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2 analysts
Computer time (data center)

Role/Description	Type	Cost/Rate
Programmer	Resources	$ 40/hr
Analyst	Resource	$ 70/hr
Computer time	Fixed cost	$ 2,000

What is the **task total cost**?_____ dollars

Group Exercise - Estimating Costs

Specifications:
Task - Write a Payroll program
      Effort - 70 persons-day

Allocated resources
5 programmers
**2 analysts**
Computer time (data center)

Role/Description	Type	Cost/Rate
Programmer	Resources	$ 40/hr
Analyst	Resource	$ 70/hr
Computer time	Fixed cost	$ 2,000

What is the **task total cost**?
task total cost = ((10 days * 8 hrs/day * $70/hr) / analyst * 2 analysts) +
              ($3200/programmer * 5 programmers) + $2000
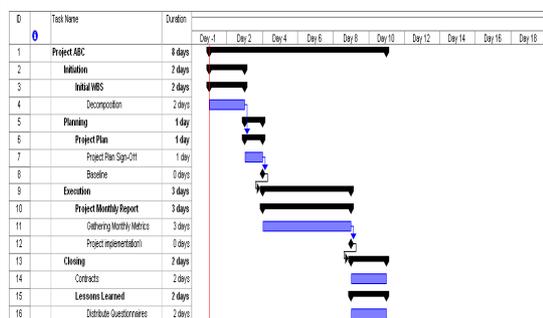   = $ 29,200

A network diagram

From the WBS, we can develope a network diagram

From the network diagram we can develop a critical path, so we have a clear image of what is our most important track.
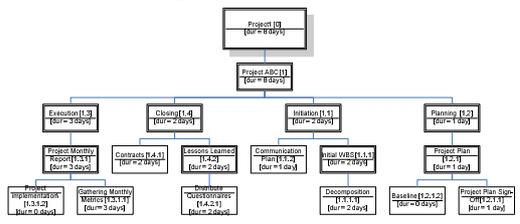
A GANTT chart

The Execution Phase

- The tracking, execution, control and oversight of a project involves reviewing all significant variances, prioritized list of all project variances.
- Each project team needs to determine how often they will review the progress and status of the project as well as the specific reports that will be used for an overall analysis of their project.

The Execution Phase

In this phase questions like these must be answered:

- Is the project running to planned effort?
- Is project staffing adhering to plan?
- Is project work completion progressing as planned?
- Is the project effectively managing issues?
- Why did the project take longer/take more effort than planned?

Is the project running to planned effort? (Project Effort –Actual versus Plan)

- Tracks actual effort against planned effort, by month, at project level.
- Effort reporting shows how closely monthly effort expended adheres to the plan.
- The report can give early warning of:
    - Possible effort overrun
    - Possible schedule slippage (insufficient effort being applied to meet schedule)
    - Possible cost overrun (effort is the main cost element of application projects)

Is project staffing adhering to plan? (Project Staffing – Actual versus Plan)

- Tracks actual project staff against planned staff, by month. The analysis should be performed on both peak staff and Full Time Equivalents (FTE).
- The relationship of estimated to actual staffing level is important to project success because:
    - Staffing levels are an important factor in project complexity and risk.
    - Staff require management, and the larger the number, the greater the management complexity.
    - Too many people working on a project at one time may lead to inefficiencies.

Is project work completion progressing as planned?(Milestones – Actual versus Plan)

- Tracks actual milestones completed each month against planned milestone completion.
- Shows how effectively the project is adhering to planned work completion – an indicator of progress.
- While the effort metrics described earlier (Effort – Actual versus Plan) are sometimes used as an indication of a project's progress against plan, they do not show the whole picture :
    - a project may be completing the planned effort each month, but may not be completing the planned work.

Is the project effectively managing issues? (Project Issues – Raised versus Closed)

- Tracks cumulative issues raised versus issues closed, by month.(Issues are defined as project-related questions that have been raised but cannot immediately be answered by members of the team).
- Issues are important to project managers and teams for the following reasons:
    - Issues require effort and resources to resolve.
    - Issues often require a team to revisit a signed-off deliverable.
    - Issues may cause members of the team to be less productive while waiting for resolution.
    - Reporting on issue resolution gives a good indication of how effectively the project team is managing issues.

Why did the project take longer/take more effort than planned? (Duration/Effort Variance Analysis)

- Shows project variance from original plan broken down by variance cause (client change request or misestimating).

- Without understanding why the "project actuals" differ from the original estimates, it is difficult to make any conclusions about estimation accuracy

References

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