Project Management

David Jordan & Jennifer Johnson
Objectives

Understand project management (PM) and its phases

Learn formal, informal PM approaches and tools

Recognize risk areas that can derail projects
Project Management

Not Started

- Understand project management and its phases
- Learn formal and informal project management approaches and tools
- Recognize risk areas that can derail projects

In Progress

- Add a card...

Completed

- Add a card...
Overview

What is a project?

Why do we need project management?

How do we do project management?
Hollywood Project Management: Ocean’s Eleven

Danny (George Clooney) and Rusty (Brad Pitt) recruit an expert team to rob 3 Las Vegas casinos in one night.

Film depicts planning, procuring resources, engaging stakeholders, budgeting, executing, and closing.
Project Management

Not Started
- Learn formal and informal project management approaches and tools
- Recognize risk areas that can derail projects

In Progress
- Understand project management and its phases

Completed
- Add a card...
Project vs. Operations

Resources (labor, capital)
Tasks
Budget
Meet business objective
Assigned to responsible personnel
Has an impact on profit
Projects vs. Operations

**Project**
- Temporary / time-limited
- Defined start and end in time
- Unique/one-off result

*(Preparing refreshments for New Year’s Eve party)*

**Operations**
- Ongoing and open-ended
- Never “finished”
- Repetitive production of “same” result

*(Preparing daily family meals)*

(Kuster 2015)
Why Manage Projects?

- Shared understanding of outcomes/results among stakeholders and project team
- Agreement on resources to devote to the project
- Ensure appropriate communications
- Anticipate and address risks
Sound familiar?

SiTech Root Problems

1. Ad-hoc project planning
2. Infrequent, subjective project monitoring and roadblock removal
3. Management didn’t prioritize work and say no to some projects
4. Difficulty managing urgent interrupts from ongoing factory operations
5. Unclear roles, responsibility, and accountability regarding projects
6. Culture of firefighting
Project Management

Not Started
- Recognize risk areas that can derail projects
- Add a card...

In Progress
- Understand project management and its phases
- Learn formal and informal project management approaches and tools
- Add a card...

Completed
- Add a card...
Project Management Models

Formal (from software engineering):
  Waterfall
  Iterative
  Agile Manifesto

Informal
  Getting Things Done / Natural Planning Model

(Verzuh 2011)
Waterfall Model

Winston Royce, TRW (1970)

Strict sequence of requirements analysis, design, and development phases

Incorrectly interpreted as single-pass waterfall;
Royce recommended complete steps twice

(Larman and Basili 2003)
Waterfall Model

Requirements → Design → Implementation → Verification → Maintenance

Product requirements document → Software architecture → Software → Maintenance

https://commons.wikimedia.org/wiki/File:Waterfall_model.svg
Iterative Model

IBM FSD (1972)
   US Trident submarine; 1 million lines of code
Tom Gilb (1978) promoted method UK’s Computer Weekly

Feedback-driven refinement
Customer involvement
Clearly delineated iterations (~ 1 – 6 weeks)

Barry Boehm (1986) – spiral model
   • Prioritize development cycles by risk

(Larman and Basili 2003)
Iterative Model

https://commons.wikimedia.org/wiki/File:Iterative_development_model.svg
Agile Manifesto

Agile Alliance (Feb 2001)
  • 17 process experts meet in Utah

Alistair Cockburn (2002)

Promote modern, simple iterative and incremental development
Agile Manifesto

http://www.aplicatech.com/agile-project-management-aplica
Typical MP Project Examples

Start a residency program

Create or update QC process/procedure/tool

Deploy a new clinical software/IT system
Project Management

Not Started
- Recognize risk areas that can derail projects

In Progress
- Understand project management and its phases

Completed
- Learn formal and informal project management approaches and tools

Add a card...
Project Management Phases

Define / Concept
• “Why?”

Plan
• “What?”
• “How?”

Execute / Control
• “Doing”

Close
• “Wrap up”

Each phase is defined by gates/checkpoints

Phase benefits

(Verzuh 2011)
Defining – Choosing the Right Project

YES? or NO?

Saying yes or no

Defining deliverables/expectations
Defining – Statement of Work (SoW)

What is the real problem trying to solve? ("Why?")

Who are the stakeholders?

- Do the Work
  - Provide Things
  - Pay for the Work
  - Support the Work
  - Use Results
Defining – Statement of Work

What is the priority of this project, relative to other demands on resources in the organization?

Whose priority is it? (Approval line)
Planning

Planning seems easy (trivial) assuming you will know what to do.

When you don't know what to do, walk fast and look worried.

Often the challenge is that you WON'T know what to do.
Work Breakdown Structure (WBS)

What is it?
Top-down starting from project outcome
Break down to individual tasks = “work packages”
Work packages can be grouped into “summary tasks”

Why make it?
Highlight gaps / information still needed
Identify dependencies
Plan for people, time, and resources needed

(Verzuh 2011)
Work Breakdown Structure (WBS)

Create high-level summary tasks and work packages

Get help from team of front-line workers, experts to determine details of work packages

(Verzuh 2016)
Natural Planning Model

“Begin with the end in mind” (Stephen Covey)

Describe the desired outcome

Describe the specific steps that must be taken (visible, physical actions)

Granular, non-ambiguous task definition

Establish quality benchmarks: “What does ‘DONE’ look like?”

(Allen 2002)
Development of resourced schedule

Using the WBS:
- Identify relationships between work packages
- Place in sequence

For each work package, determine:
- Who will do it?
- How long will it take?
- What resources are needed?

(Verzuh 2011)
A project management game... it's free. To play just assign your staff to the various tasks in the schedule and hit the Start button. It's easy, it's fast, and there is nothing to download.

### Project alpha

<table>
<thead>
<tr>
<th>Task</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project start</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Calibrate the contraption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Build the thingamabob</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Restart the thingy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Retool the thingumajig</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Sample some widgets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project complete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Your resources

- Your budget: $864,000
- Your staff:
  - Jim: Jim is average
  - Mark: Mark is expensive
  - Bob: Bob is fast and expensive
  - Kathy: Kathy is fast

http://thatpmgame.com
Project Manager’s Triangle

Must negotiate trade-offs since resources are finite

(Verzuhr 2011)
Budgeting

Estimating **TIME** requirements

Estimating **MONEY** requirements

Pad, but don’t over-do it

Be **TRANSPARENT** with stakeholders:
Assumptions used to create the budget
Reasoning behind any padding
“This is my best estimate, but this is only an estimate”
Planning

Analysis Paralysis

over-analyzing (or over-thinking)
a situation so that a decision or action is never taken.

Avoid “analysis paralysis”
Planning

Plan for risks / perform risk analysis

Identify

Monitor

Evaluate

Treat
Communication Plan

Should be explicitly defined

What?

Who?

How often?

What channels/format?
# Communication Plan

<table>
<thead>
<tr>
<th>To Whom?</th>
<th>What?</th>
<th>How often? / When (date)?</th>
<th>What channels/format?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected members</td>
<td>Project status update</td>
<td>Weekly</td>
<td>FW: email</td>
</tr>
<tr>
<td>Boss</td>
<td>Status and barriers</td>
<td>Monthly</td>
<td>FV: Face-to-face meeting</td>
</tr>
</tbody>
</table>

**Key to Types of Communication**

FW: Formal Written   IW: Informal Written
FV: Formal Verbal    IV: Informal Verbal
Doing

Milestones / measure progress

Quantity, quality, and timeliness of information/feedback

What is your “dashboard”? 

Milestones (defined during Planning if possible)
Doing

Manage risks

Replanning: adjusting for changing and unforeseen circumstances
Doing

Scope creep
Small changes in a plan or project that necessitates other changes which lead to still more changes...

Causes:
Unexpected issues
Perfectionism / gold plate
Placating stakeholders
Misunderstandings
YOUR great ideas (wrong time!)

Change Control -
Define process & expectations
Web design: “not just adding another button”

http://www.akaroleff.com/content/scope-creep-can-be-managed
http://www.businessdictionary.com/definition/scope-creep.html
Wrap up / close out

Deliver the deliverable

After-action review

Archive any reusable templates and content for future projects
After-action Reviews

Held *immediately* at end of project

Include leaders and front-line staff carrying out tasks

Compare actual with intended (planned) result

Examine reasons for any differences

Open-ended, active inquiry and learning

(US Army 1993)
Not Started
Add a card...

In Progress
- Recognize risk areas that can derail projects
Add a card...

Completed
- Understand project management and its phases
- Learn formal and informal project management approaches and tools
Add a card...
Risks and Pitfalls
Managing Project Teams

(Note: team effectiveness a different session but complementary)

Provide clear enough direction and sufficient resources (time, money, space, equipment, etc.) to accomplish the task as directed
Managing Project Teams

When Delegating: YOU are still accountable for the task

Critical:

Tracking progress

Regular follow-ups

Levels of initiative: preferred = act independently and report back at regular scheduled intervals

Define in Communication Plan
Human Dimensions

Procrastination

Getting unstuck: excuses are really just next step tasks or sub-projects that are standing in the critical path

Hesitant to ask questions / appear ignorant
Tools and Software

Seek simple: avoid too much complexity
What functionality does your project really need?
Who needs to see what, when?
Who is putting in information and updating, how, and how often?

*Remember that the US nuclear power plant fleet was built and the Manhattan Project carried out without using MS Project*

(Kuster 2015)
Tools and Software

Simplest: spreadsheets (blank or template)

Web Tools: e.g. Asana, AtTask, SmartView

Structured: built-in PM workflows

Web Platforms: e.g. Trello, Podio, Wrike

Flexible: more options, more setup

Desktop/server databases: e.g. Access, FileMaker

Professional PM: MS Project, Atlassian JIRA

(Kuster 2015)
References


