



June 12-16 • Westfields Marriott Conference Center • Chantilly, VA

# 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



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Understand project management and its phases

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# 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.



Boards



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Dave Jordan



## Project Management



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# 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 Years ' Eve party)*

## Operations

Ongoing and open-ended

Never “finished”

Repetitive production of “same” result

*(Preparing daily family meals)*



# 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



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# Project Management Models

Formal (from software engineering):

- Waterfall

- Iterative

- Agile Manifesto

Informal

- Getting Things Done / Natural Planning Model

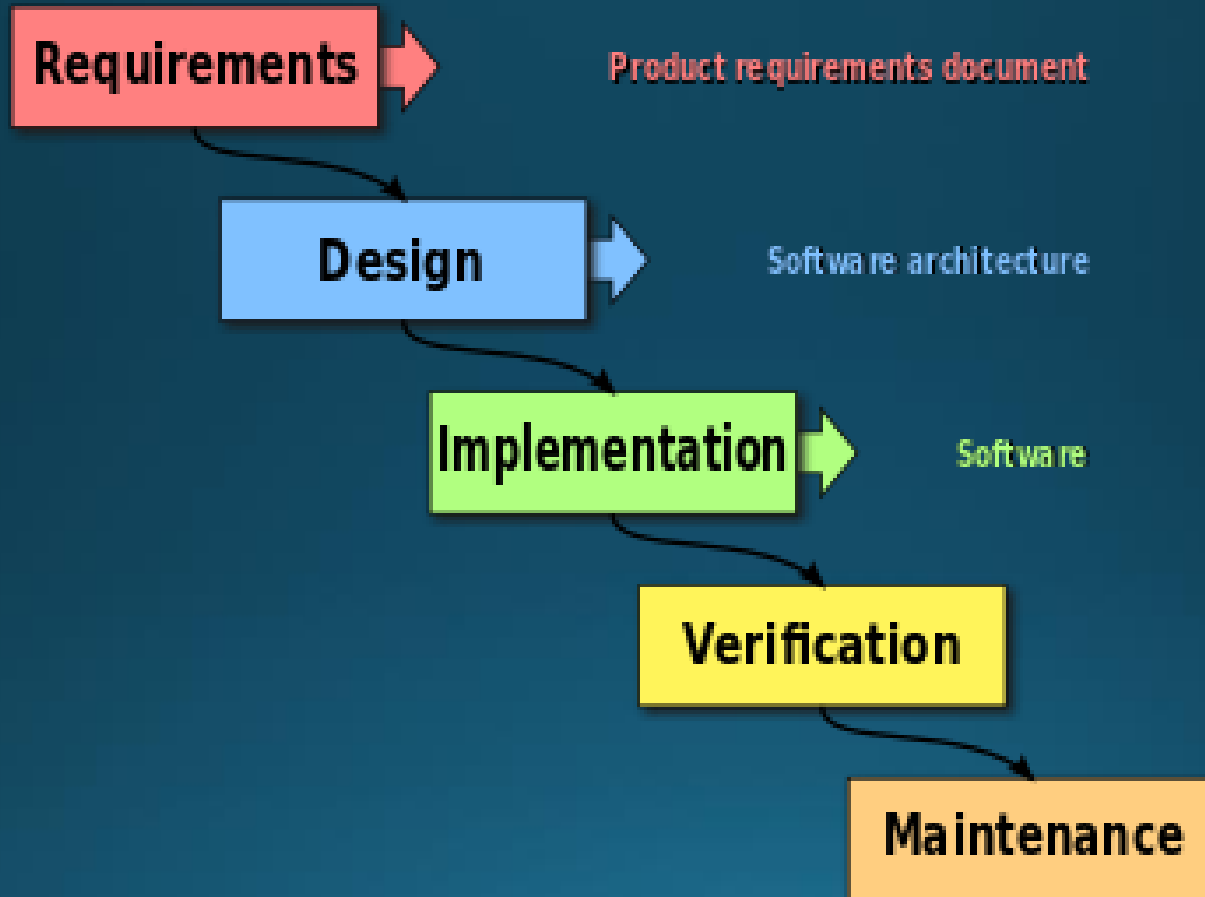
# Waterfall Model

Winston Royce, TRW (1970)

Strict sequence of requirements analysis, design, and development phases

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

# Waterfall Model



[https://commons.wikimedia.org/wiki/File:Waterfall\\_model.svg](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)

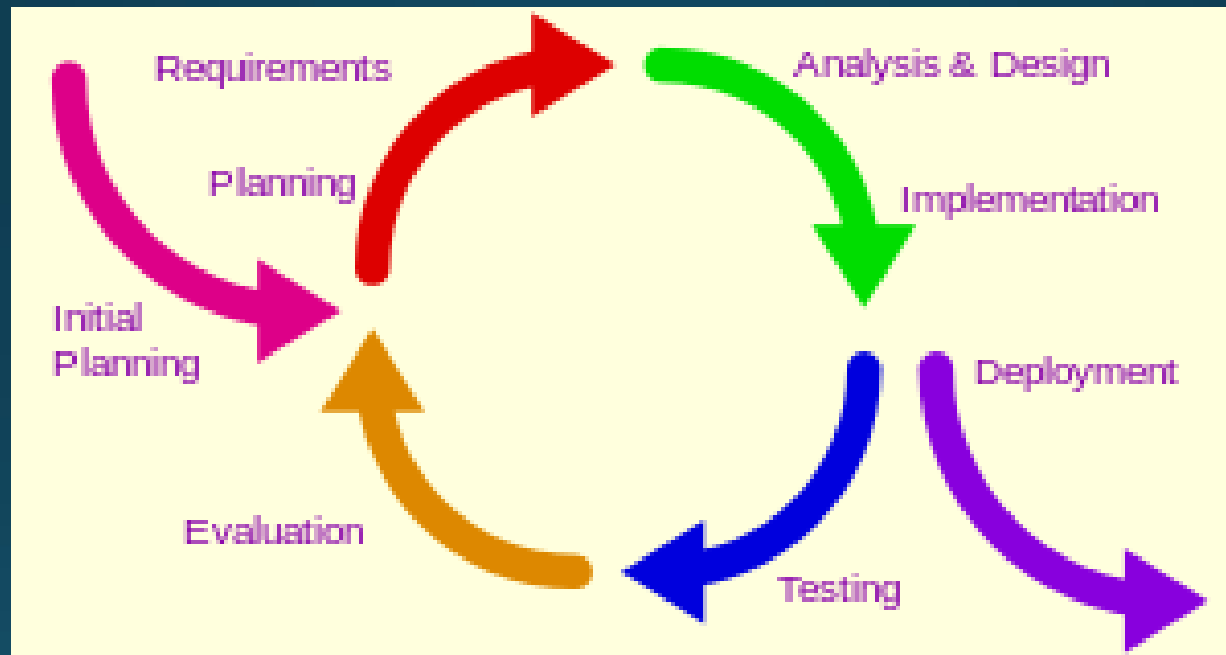
Barry Boehm (1986) – spiral model

- Prioritize development cycles by risk

(Larman and Basili 2003)



# Iterative Model



[https://commons.wikimedia.org/wiki/File:Iterative\\_development\\_model.svg](https://commons.wikimedia.org/wiki/File:Iterative_development_model.svg)

# Agile Manifesto

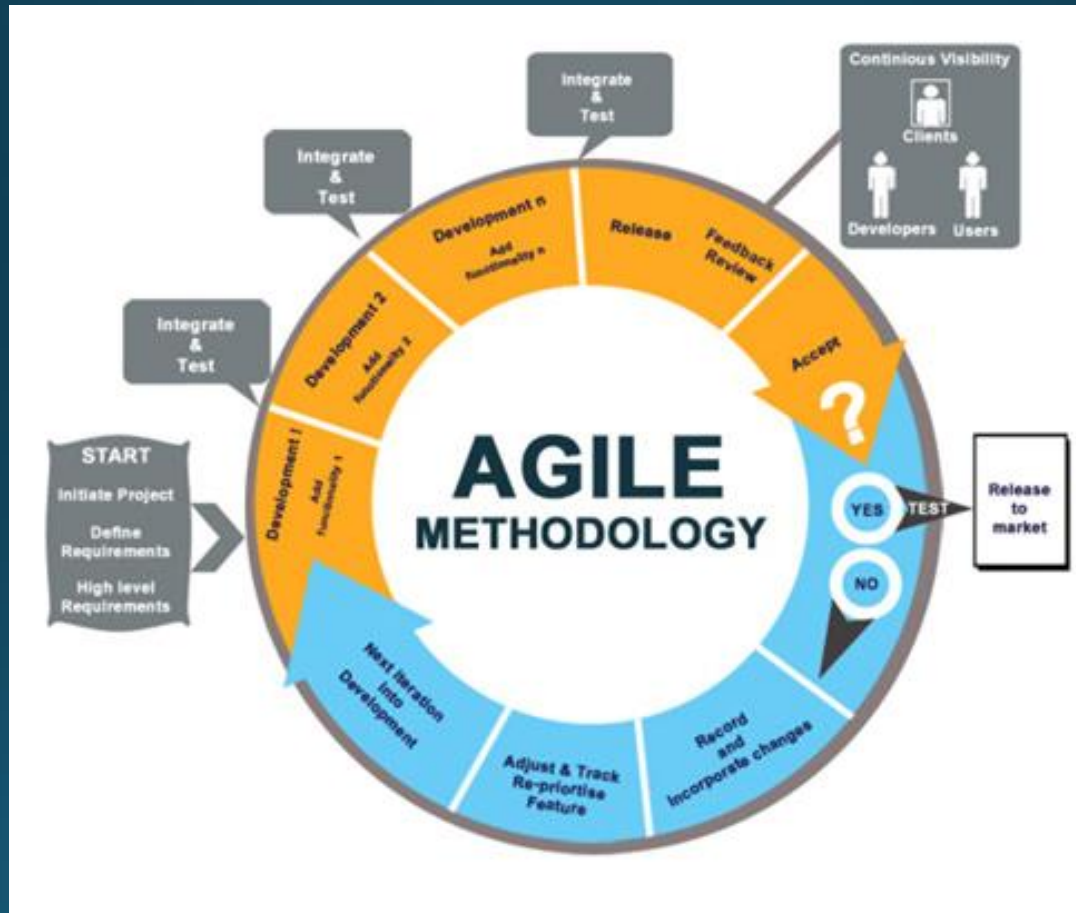
Agile Alliance (Feb 2001)

- 17 process experts meet in Utah

Alistair Cockburn (2002)

Promote modern, simple iterative and incremental development

# Agile Manifesto

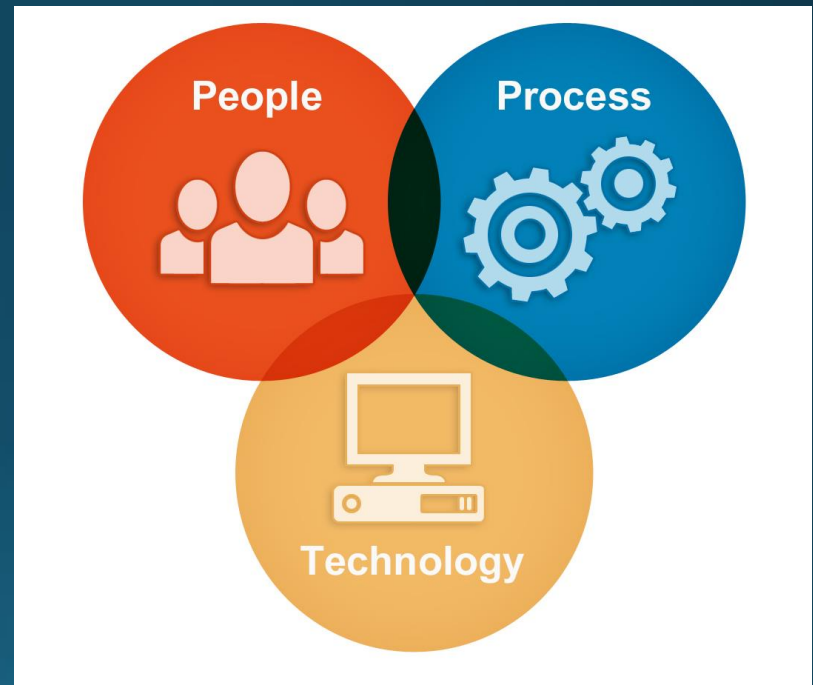


# Typical MP Project Examples

Start a residency program

Create or update QC process/procedure/tool

Deploy a new clinical software/IT system





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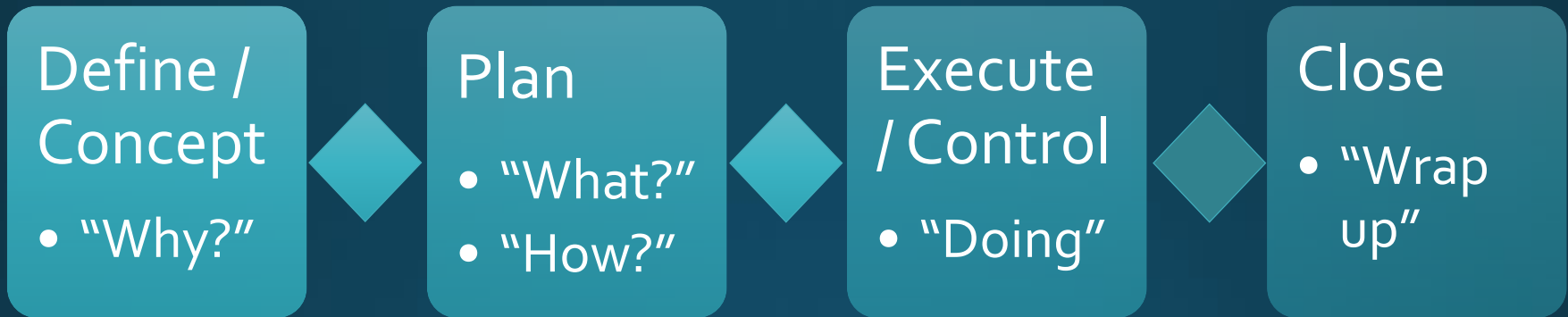
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# Project Management Phases



Each phase is defined by gates/checkpoints

Phase benefits

# 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?”)

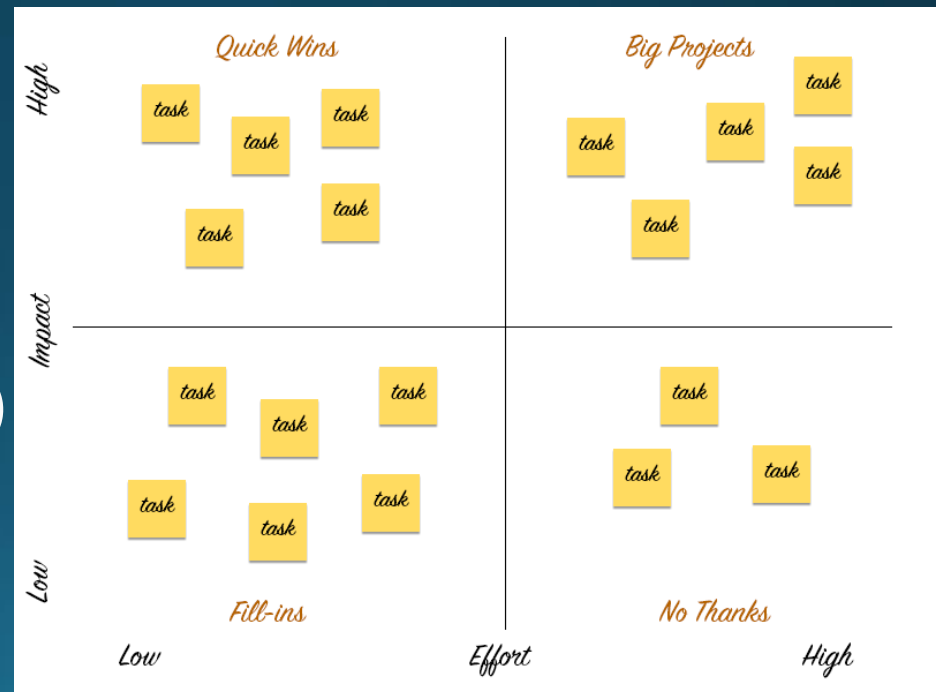
Who are the stakeholders?



# 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.



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

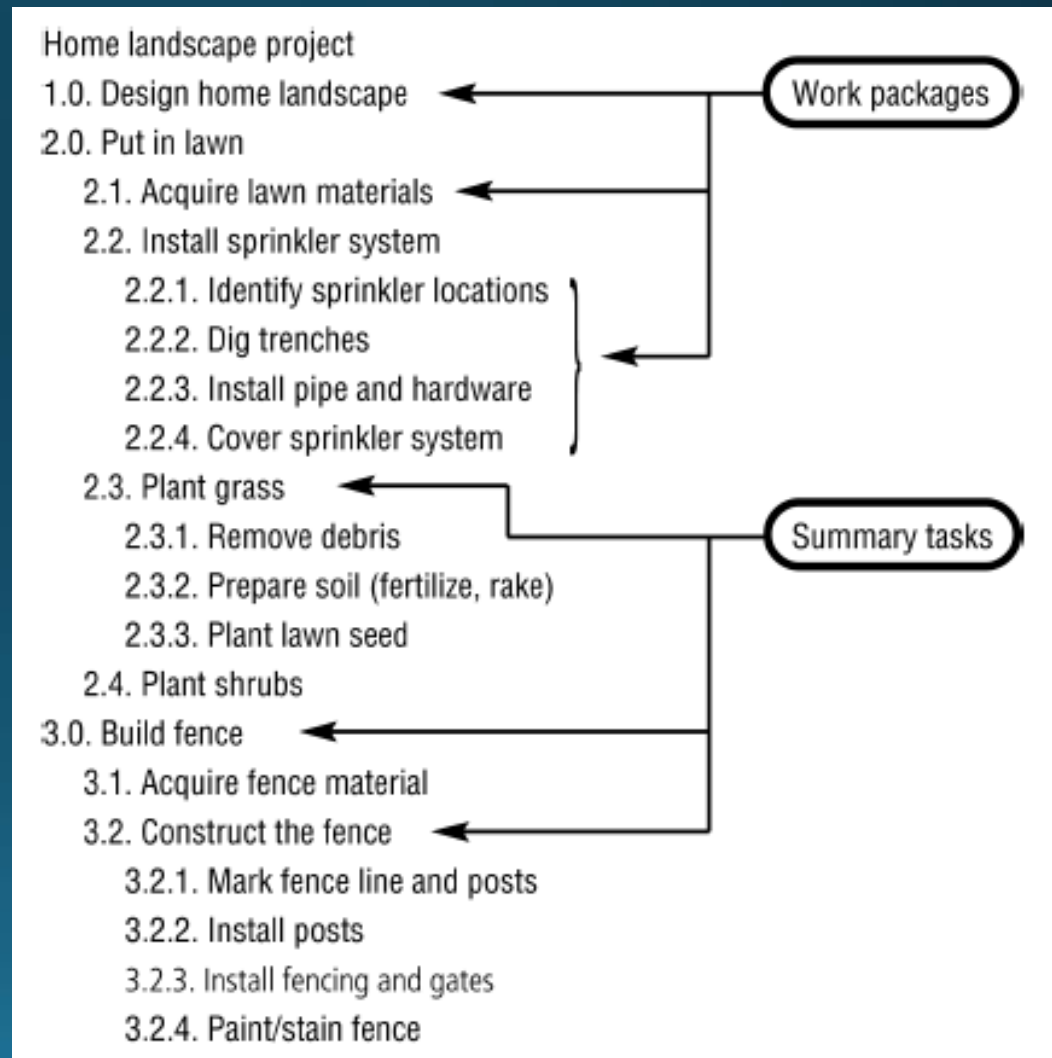
Plan for people, time, and resources needed

# 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?”

# 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?



# (Interactive) Gantt Chart

## The Project Management Game

"Test your skill as a project manager!"

Game

Instructions

Discuss

A project management game... its free. To play just assign your staff to the various tasks in the schedule and hit the Start button. Its easy, its fast, and there is nothing to download.

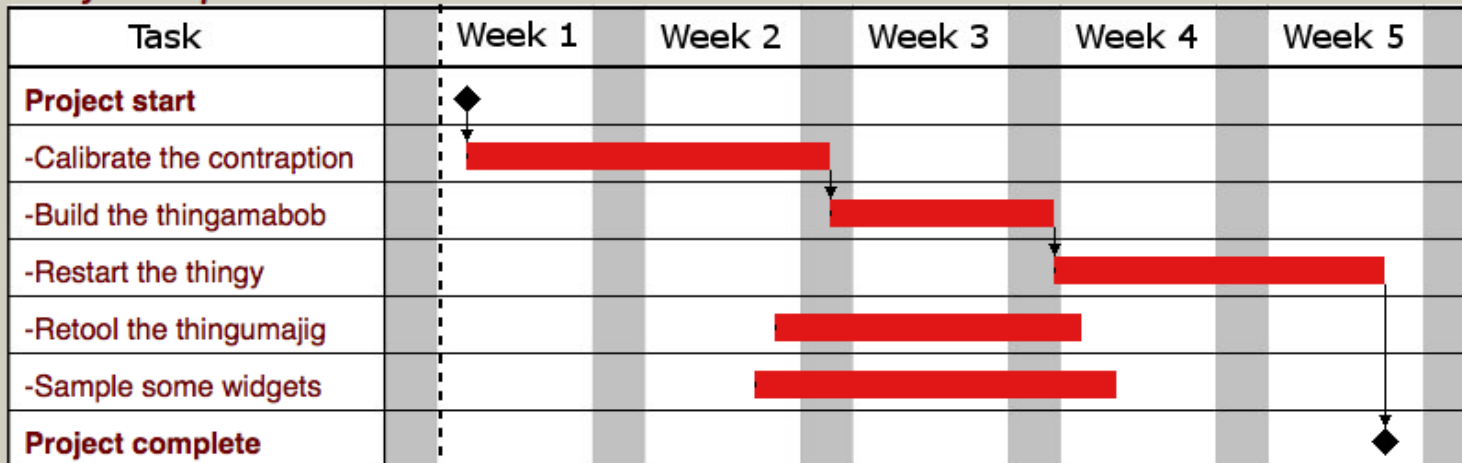
### Your resources

Your budget: \$864,000

Your staff:

- Jim Jim is average
- Mark Mark is expensive
- Bob Bob is fast and expensive
- Kathy Kathy is fast

### *Project alpha*



Start!

Spent

assign? \$0k

assign? \$0k

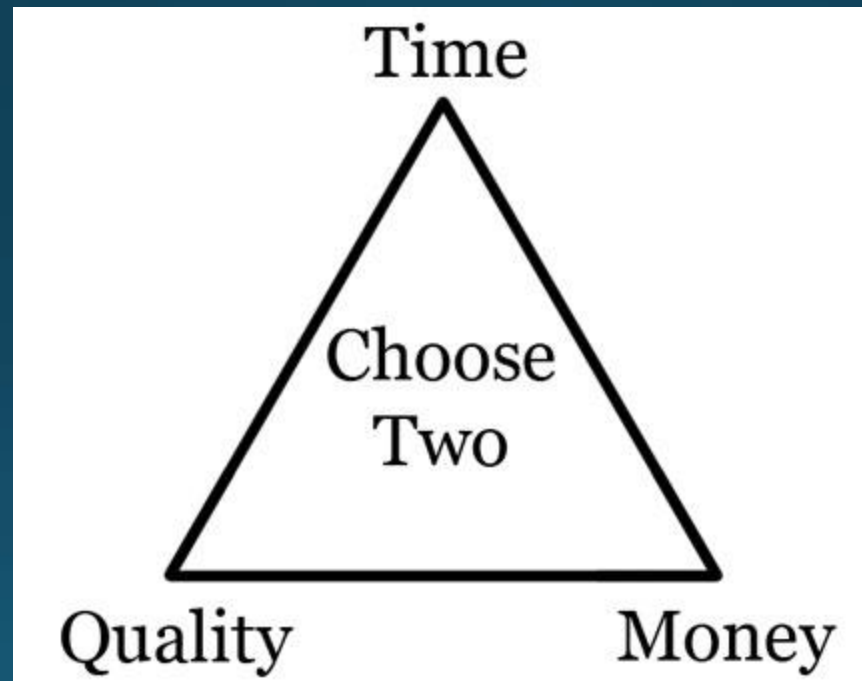
assign? \$0k

assign? \$0k

assign? \$0k

# Project Manager's Triangle

Must negotiate trade-offs since resources are finite



# 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

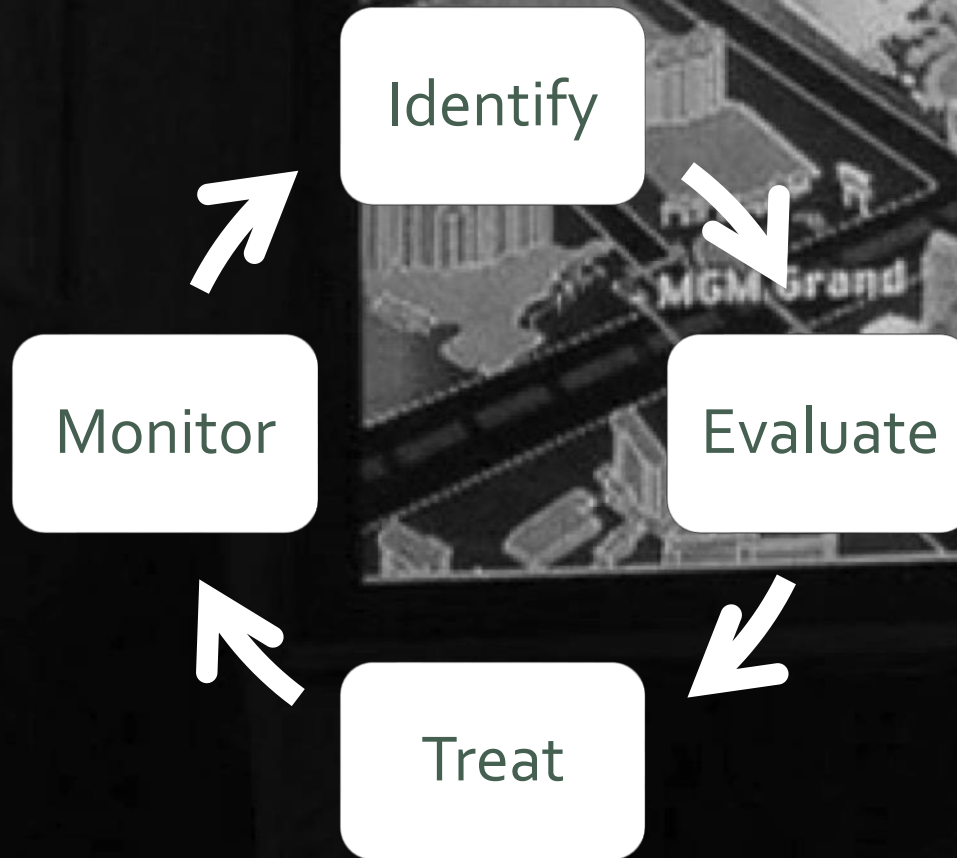
over-analyzing (or over-thinking) a situation so that a decision or action is never taken.

Avoid “analysis paralysis”



# Planning

Plan for risks / perform risk analysis



# Communication Plan

Should be explicitly defined

What?

Who?

How often?

What channels/format?



# Communication Plan

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

## 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



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# 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*

# 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



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