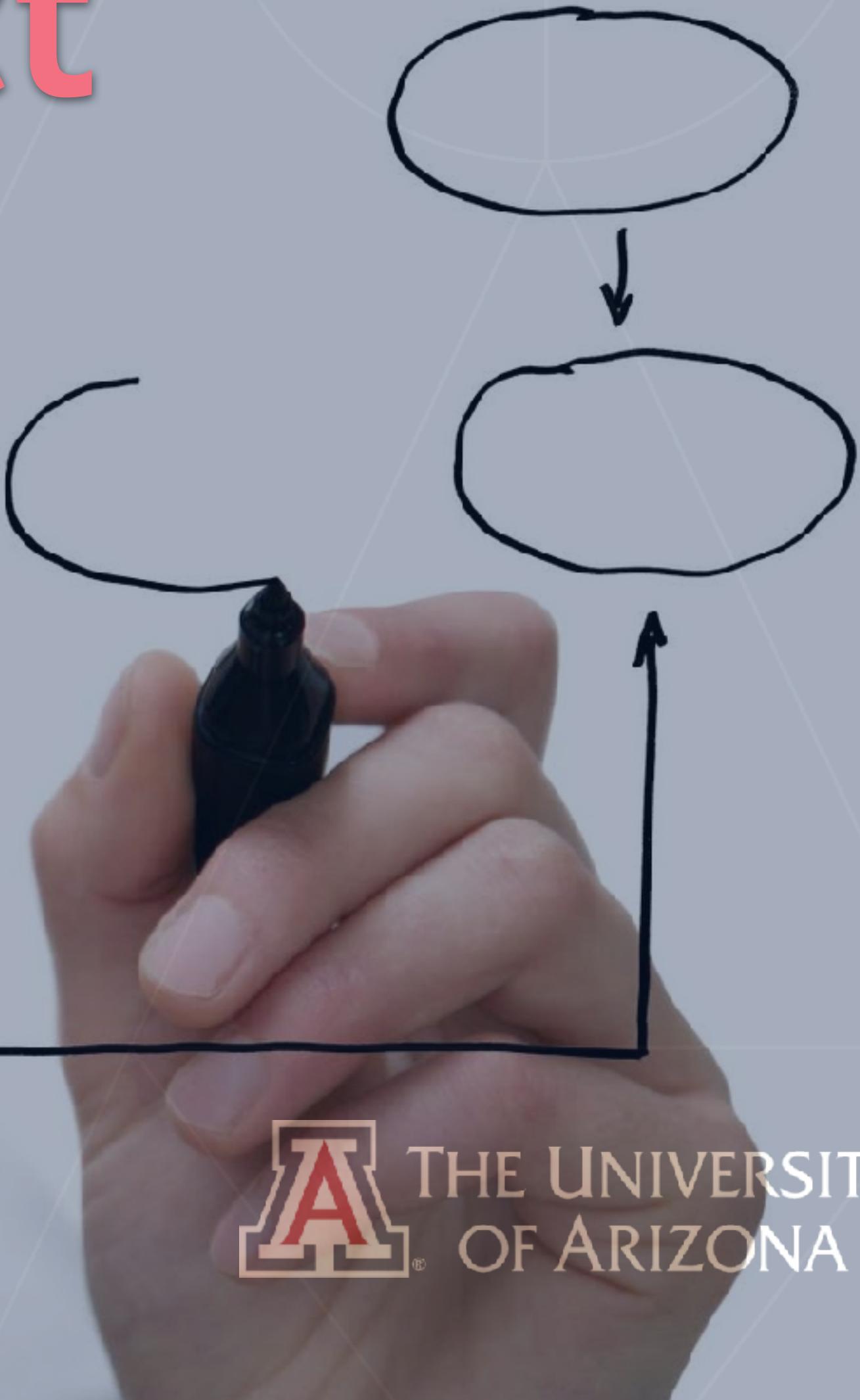
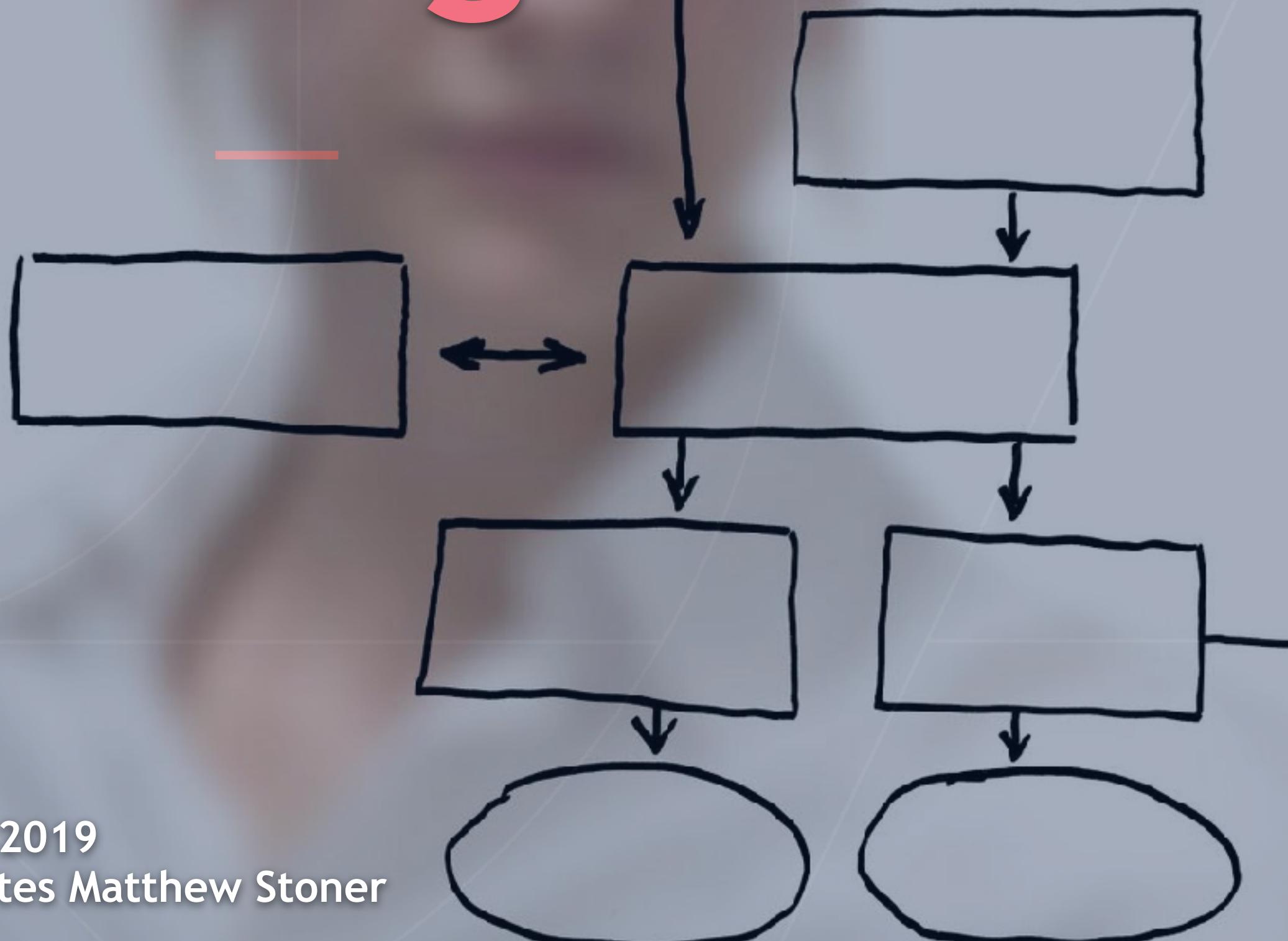


Keys to Project Management



Agenda

- What is project management?
- The planning process
- Group relations

“It must be considered that there is nothing more difficult to carry out nor more doubtful of success nor more dangerous to handle than to initiate a new order of things”

Machiavelli 1446-1507,
Italian statesman and philosopher



Definition

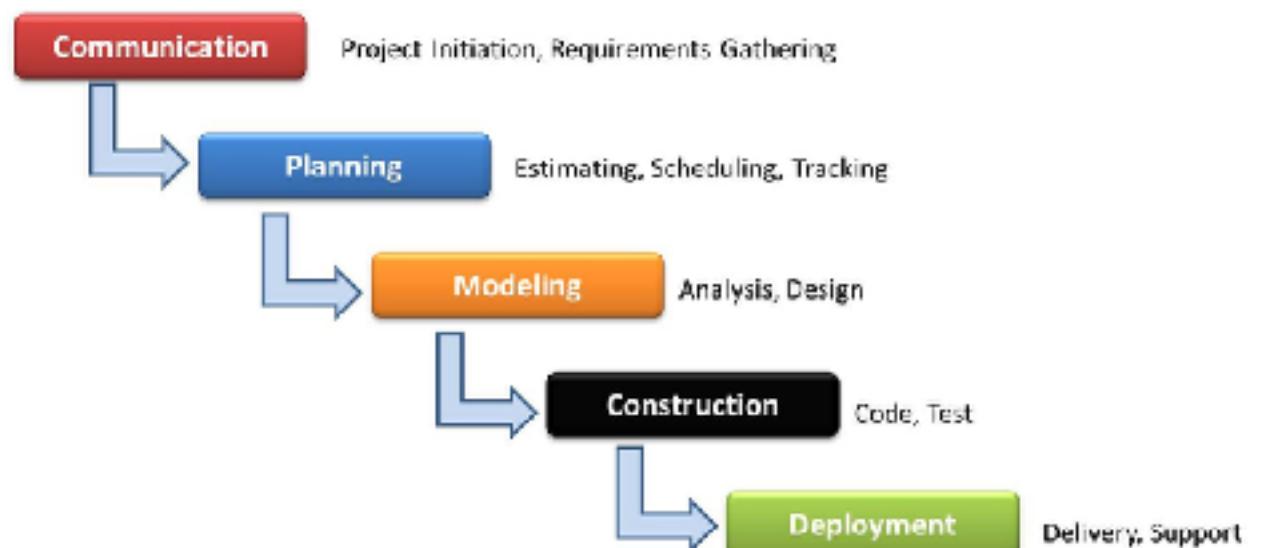
Project Management Institute
defines project management
as “the application of
knowledge, skills, tools, and
techniques to project activities
to meet the project
requirements.”



Approaches



Phase Model



Waterfall Model



Lean Mode

Approaches



Phase Model



Project Charter

Project Initiation

Scope & Budget

Work Breakdown Schedule (WBS)

Gantt chart

Communication Plan

Risk Management

Status & Tracking

KPIs

Quality

Forecasts

Objectives
Quality

Deliverables

Effort & Cost
Tracking

Performance

Post Mortem

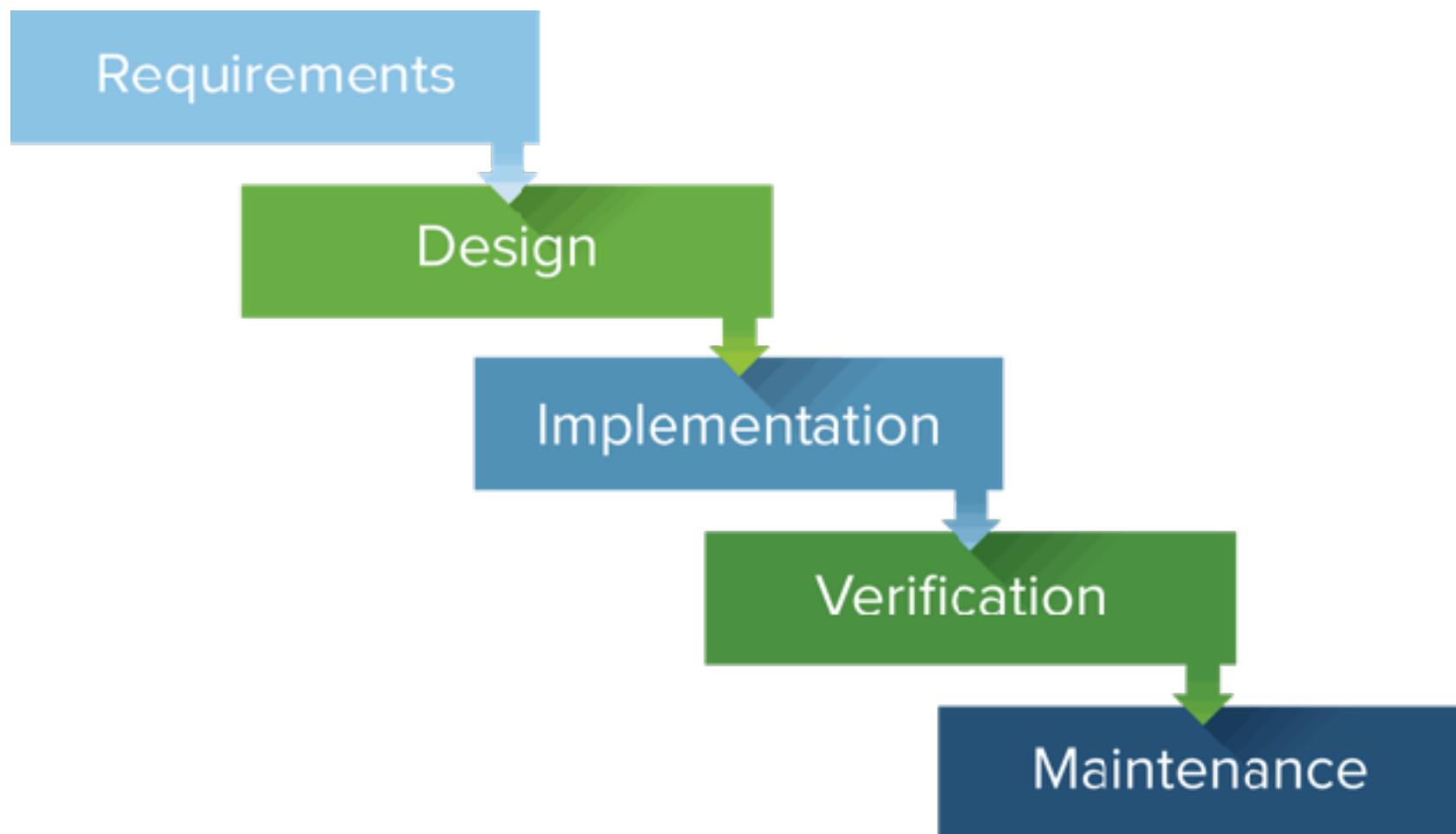
Project Punchlist

Reporting

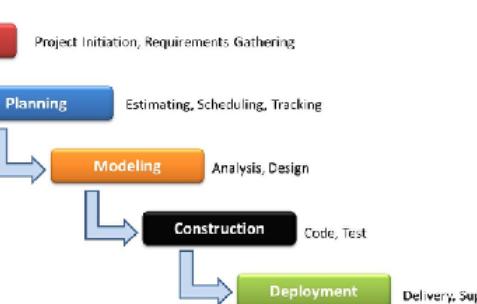


Approaches

Waterfall Model



- Linear sequential phases
- Common in Engineering & Construction projects
- Challenges if not all requirements are known at start



Approaches



Lean Model

- Six Sigma strategies seek to improve the quality of the output of a process by identifying and removing the causes of defects and minimizing impact variability in manufacturing and business processes
- Different project management approaches for new projects versus improving process

Approaches



Lean Model

Existing Process

- Define
- Measure
- Analyze
- Improve
- Control

New Process/Project

- Define
- Measure
- Analyze
- Design
- Verify

Approaches



Defects

Efforts caused by rework, scrap, and incorrect information.



Overproduction

Production that is more than needed or before it is needed.



Waiting

Wasted time waiting for the next step in a process.



Non-Utilized Talent

Underutilizing people's talents, skills, & knowledge.



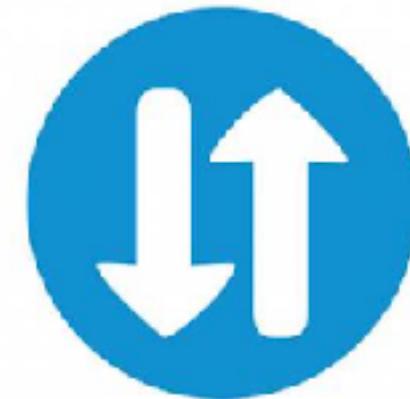
Transportation

Unnecessary movements of products & materials.



Inventory

Excess products and materials being processed.



Motion

Unnecessary movements by people (e.g. walking).



Extra-Processing

More work or higher quality than is required by the customer.



Lean Model

Lean in
construction
management



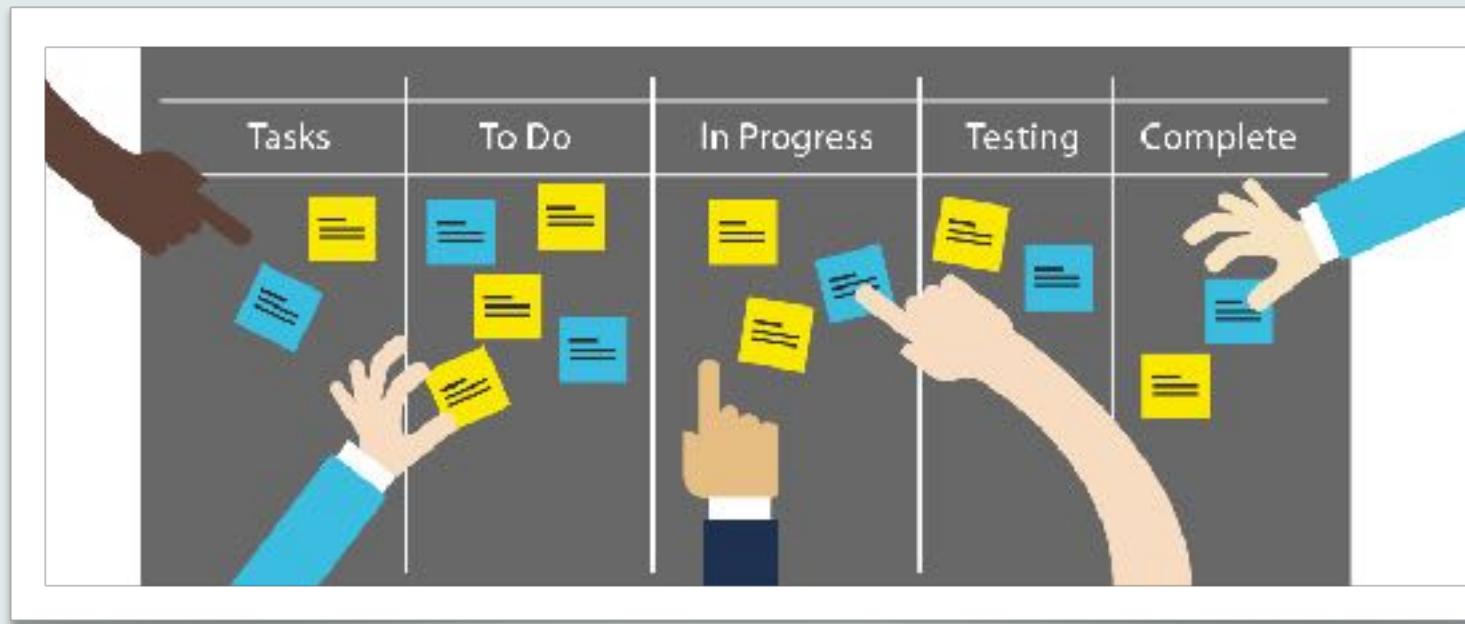
Approaches



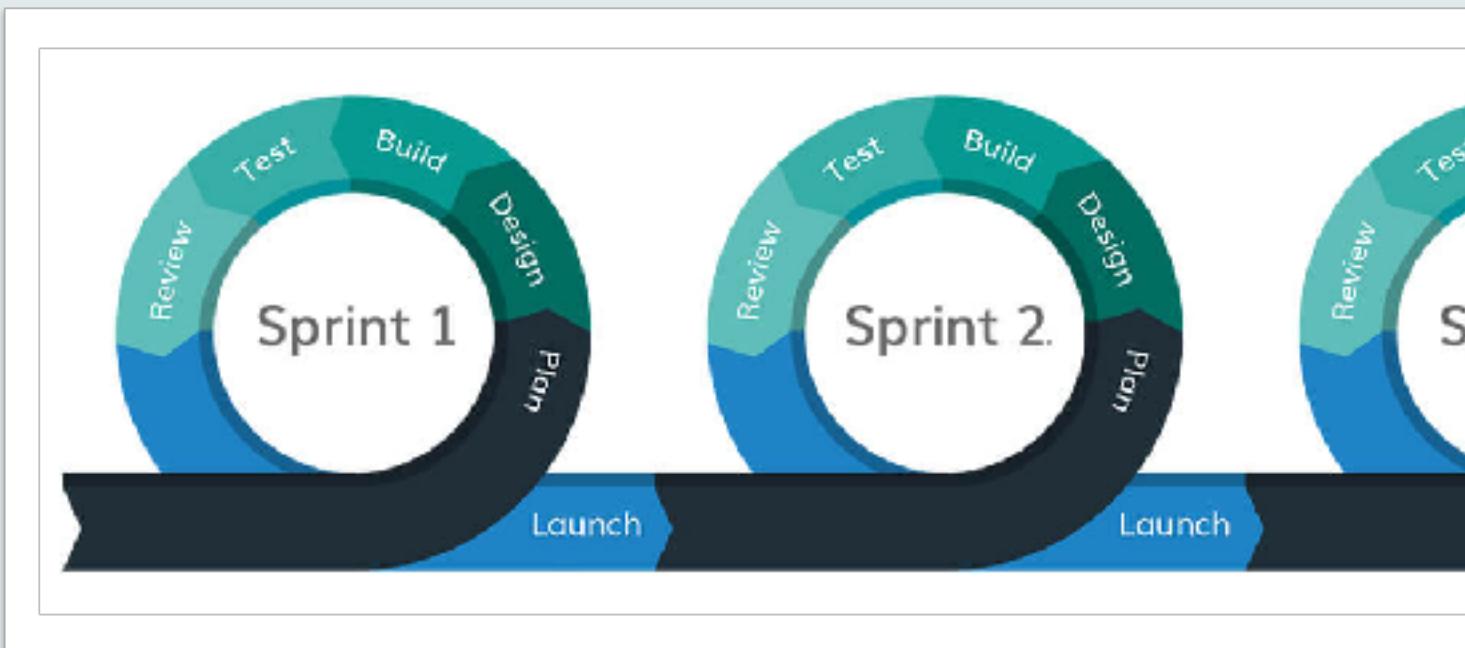
Lean Model

- Lean seeks to eliminate waste and iterate improvements
- Waterfall defines up front a schedule and progresses thru the phases
- Waterfall works best with well defined projects and repeated projects
- Lean works best with uncertainty

Tool



Kanban

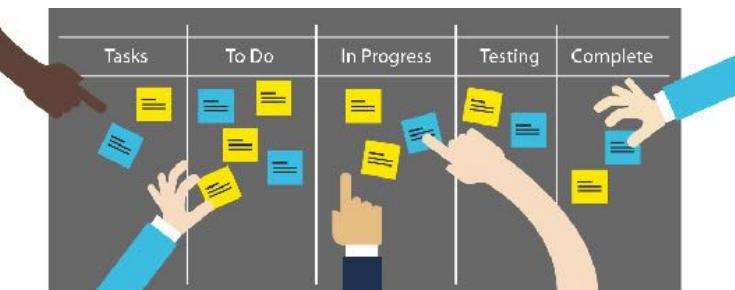


Agile



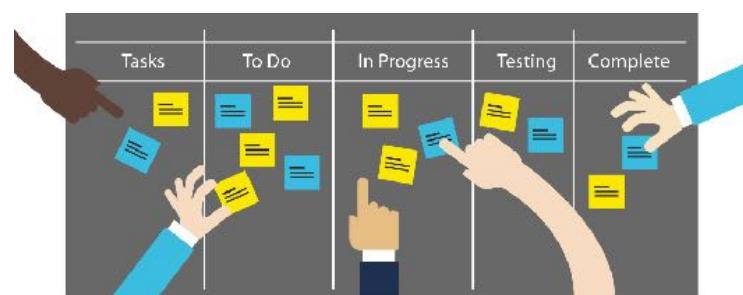
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Kanban



- Kanban is a scheduling system
- Limiting work in process (WIP) into certain streams of work
- Developed by Toyota

Kanban



Kanban

A screenshot of a Trello board titled "Kitchen Remodeling". The board is organized into four main columns: "Ideas", "To Do", "Doing", and "Done".

- Ideas:** A list of initial ideas:
 - install pot rack over island
 - remove old refrigerator and stove
 - Install new sink
 - install new refrigerator and stove
 - install new wall shelves
 - install new flooring
 - Buy paint for cabinets
- To Do:** A list of tasks to be started:
 - Adjust water pressure in sink
 - Pick faucet to match new sink
 - Pick countertop colors
 - Buy new kitchen cart
- Doing:** A list of tasks currently being worked on:
 - Design new kitchen space
 - call contractor
- Done:** A list of completed tasks:
 - 1 vote
 - 2

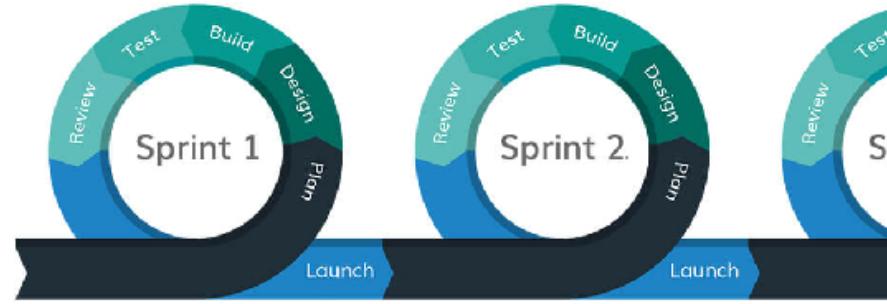
- Cards represent tasks
- Cards are sorted into Status Categories
- Goal is to move a card from left to right
- Limit work per phase (WIP)

Agile



- Agile is a method which is closely aligned with lean management
- Focuses on **iterative process** rather than a waterfall approach
- Teams work in small sprints of defined goals
- Agile teams may use Kanban boards to schedule work

Agile



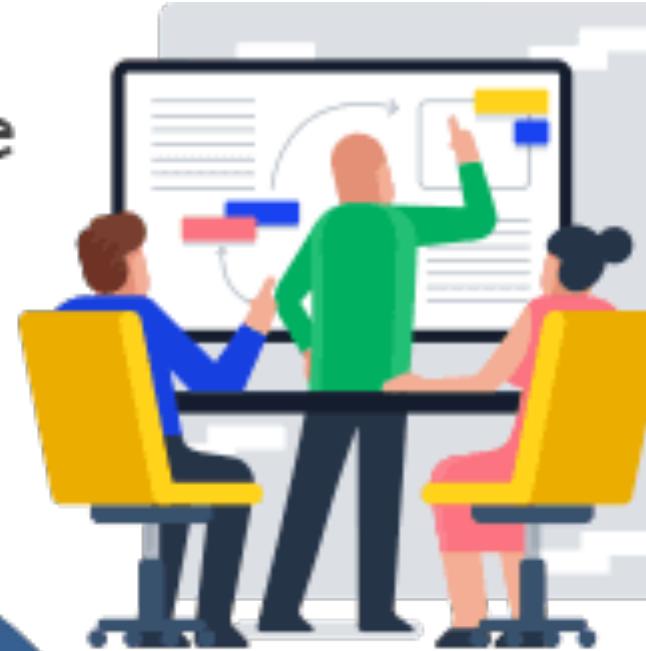
Daily scrum Update



Sprint Backlog



Iteration



Product



Key Point

- All these approaches/tools share the common goal of **fulfilling requirements and meeting objectives**
- Different organizations/teams may have preferences for a particular approach OR sadly no formal approach at all

Like a delicate flower,
project management
requires constant
attention and care to ensure
success



What is Project Mgmt?



Leadership



- Without a leader, teams flounder
- Leaders set **vision, goals, and accountability**
- Leaders delegate
- Leaders balance coordinating tasks and people

“ Leadership is a combination of strategy and character. If you must be without one, be without the strategy.

”

*Gen. H. Norman
Schwarzkopf*



Planning



- Anticipates potential problems
- Allocates resources
- Schedules tasks and milestones
- Good planning avoids crisis

*All good plans can
quickly be thrashed
by unanticipated
events ...*

Anticipating problems



- The best defense is a good **offense**
- What can go wrong, will go wrong
- Be prepared with contingency **plans**

Allocating Resources



- Time, People, and Services
- Sequencing

Scheduling



- Good scheduling buffers for the **unexpected**
- Backing up from key deadlines
- Importance of accurate time estimates and identifying key tasks
- Beware of **overtaxing** limited resources

Scheduling



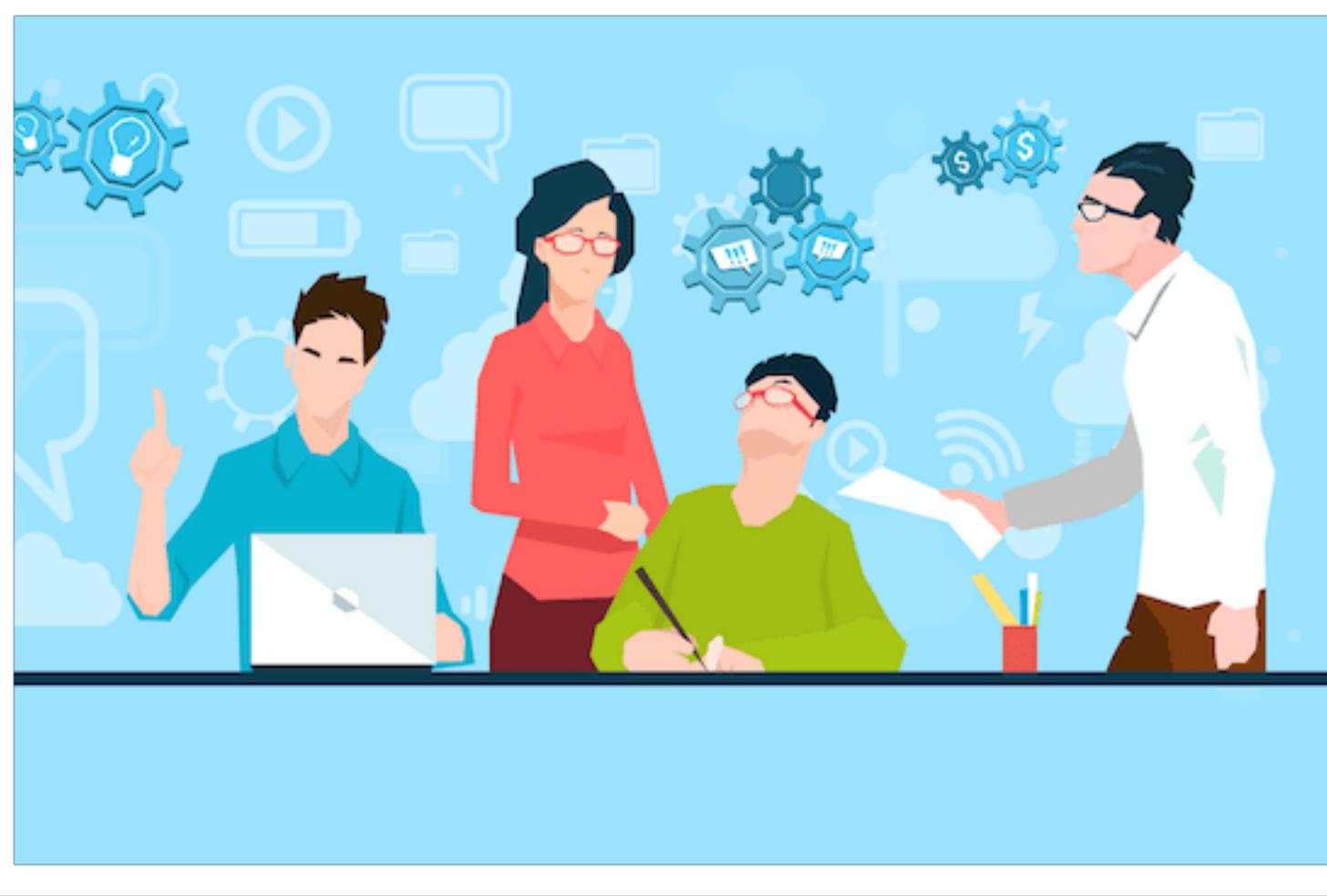
- **Estimate task time**

- Be conservative in your estimates
- Always allow for extra time
- Set goals to complete tasks early

- **Forecast Risks**

- What could go wrong?
- How will the team deal with unforeseen problems? (Who will take the lead?)
- Consider appointing a team leader or point person for problems

Coordinating - Resources

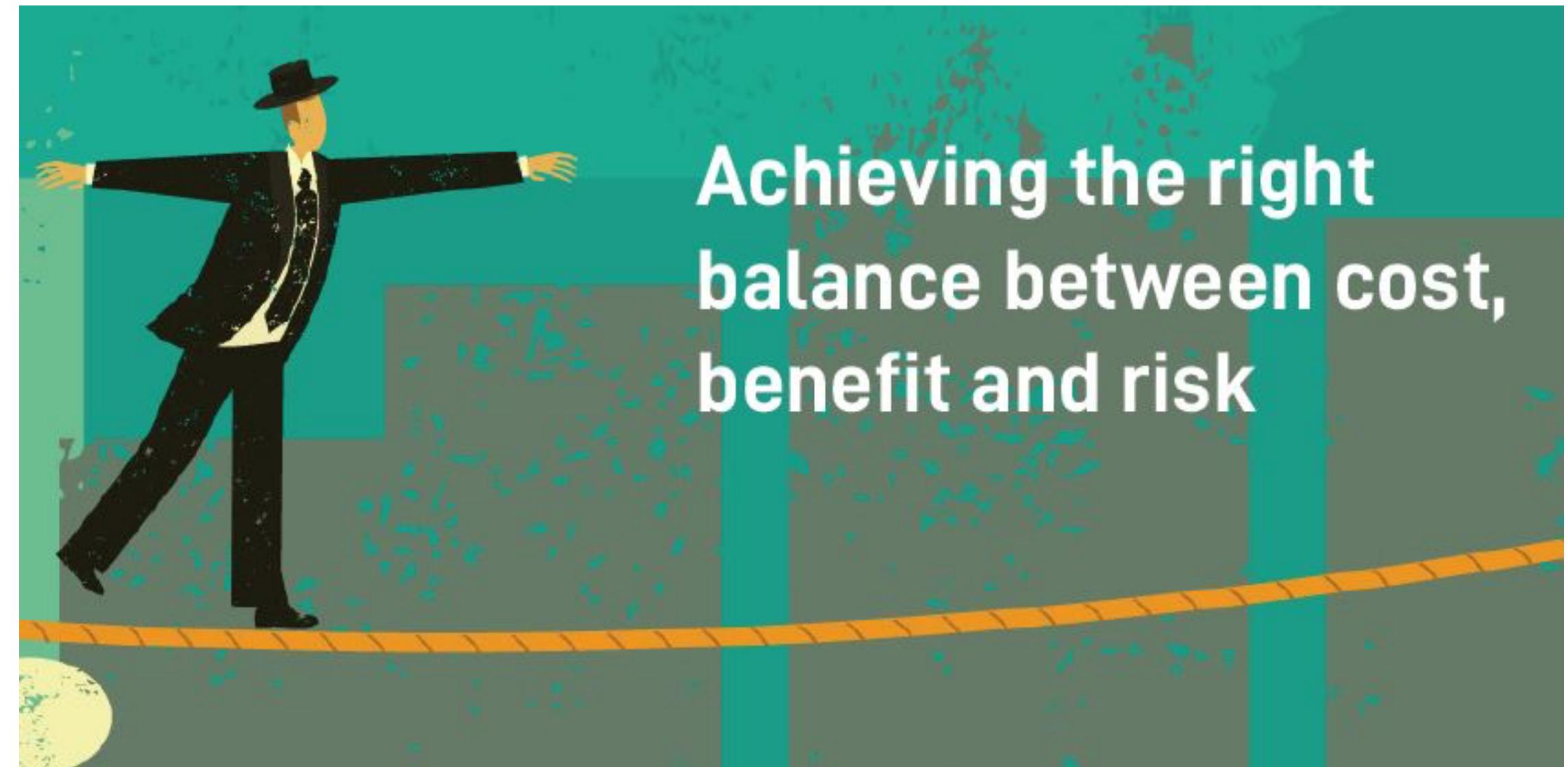


- Like a waltz, project management can require intricate choreography depending on the complexity of the project
- Some resources are
 - limited
 - dependent on other resources

Coordinating - Resources



- **JIT** (just in time) adds further complexity for businesses if materials aren't received on time or human resources are not available



Coordinating - Tasks



- Like resources, some tasks are dependent upon previous tasks or can be completed independently
- Eliminated tasks or rescheduling tasks on a condensed timeline is referred to as “crashing”
- Tasks required periodic status checks, otherwise entire timelines can breakdown

Coordinating - People



- Individuals are inherently more difficult to coordinate
- Creating the optimal work environment and work flow
- Providing the tools for success
- Reward/Benefits

Communication

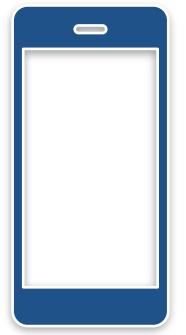


- The single biggest project killer is not money or resources but **difficulties** with communication processes (up, down, and lateral)

Communication



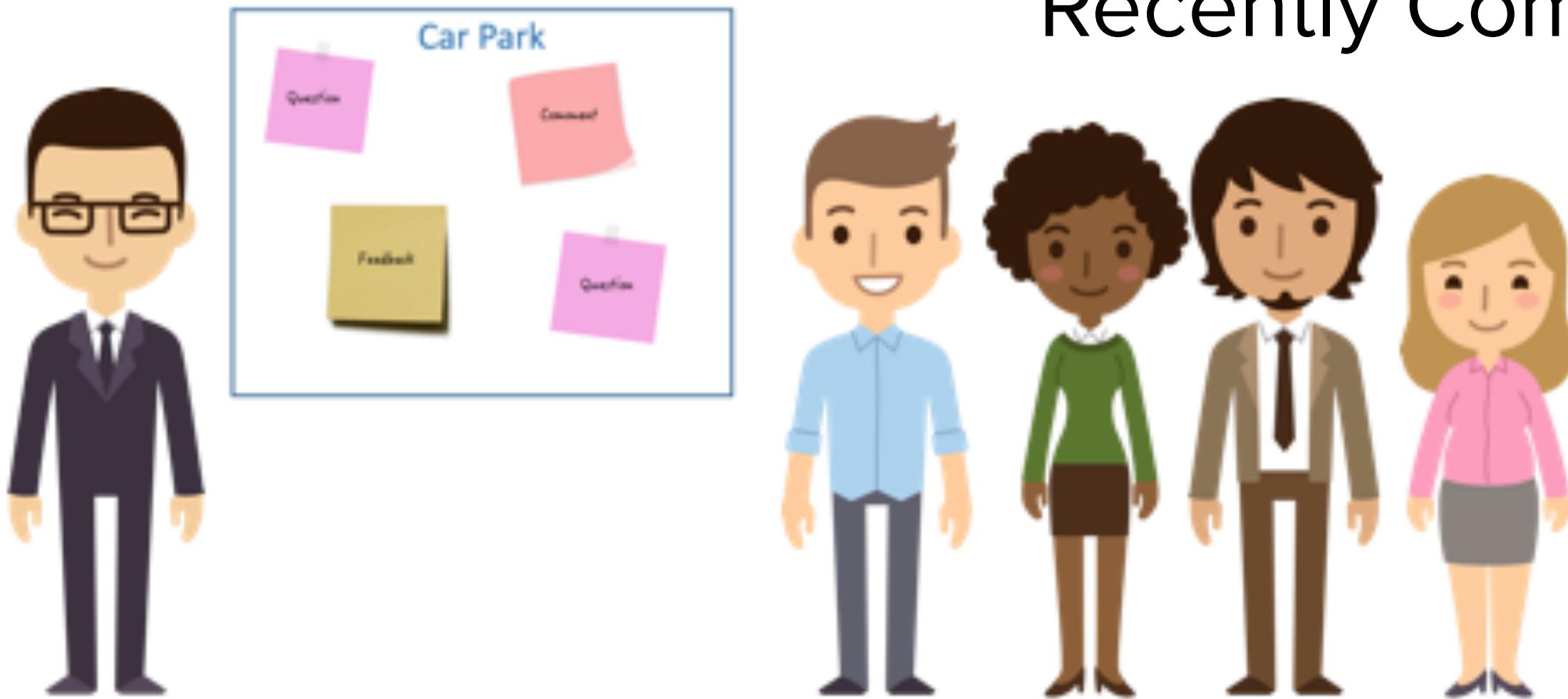
- Establishing effective processes (not overwhelming or underwhelming the channel)
- Consider channel selection pros & cons



Communication



- **Team Standups** – daily or weekly check-in meetings. **Short and Focused** on three topic – Upcoming tasks, Blockers, and Recently Completed tasks



Relationship Maintenance



- Completing goals can cause conflict within a team
- Project leaders should continually check-in with all those involved not just on task completion but how team members are getting along



Relationship Maintenance



- Relationship maintenance is especially crucial during periods of intense pressure/demands/stress



The planning process



**“Let our
advance
worrying
become
advance
thinking and
planning”**

**Winston
Churchill**



First steps

- Analyze the project requirements
- Brainstorm what could go wrong
- Determine milestones from the final delivery date

The Four W's



Who does what?

- Identify required tasks
- Evaluate dependencies and resources
- Assign/Determine the best personnel based on
 - ✓ expertise
 - ✓ availability
 - ✓ resource optimization



So now what?

- Choose a method
- Create a shared document of task assignments, milestones, and deadlines
- Communicate tasks and get feedback on the document
- Check for dependencies and potential problems

Tools

- Spreadsheet, project management program or web tool
- Simple or very complex
- Useful **only if** constantly updated and monitored

Tools

- GNATT Charts
- Kanban boards
- Shared documents
- Microsoft Project



For the Group Project
you will be using
Trello for project
management



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Team Cardboard: Base Piece

in list [Review](#)

Members Labels Due Date

DG + Cardboard + Oct 20 at 11:00 AM

Description [Edit](#)

Cut a 2'x2' square piece of cardboard to serve as the base for our mechanical arm project.

Checklist

100% [Hide completed items](#) [Delete...](#)

Acquire large piece of cardboard

Cut cardboard to 2'x2'

Present Cardboard

Add an item...

Comments/suggestions

Add Comment

BP Write a comment...

[Save](#)

Activity

[Show Details](#)

1. WHO?

Deadline

What?

Add

Members Labels Checklist Due Date Attachment

Actions

Move Copy Subscribe Archive

Share and more...

- Note the Four W's on this Trello card example

*The easiest deadline to
miss is the one that
isn't on the calendar*



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Deadlines

- The best project management plans for the unexpected
- Three different “deadline” dates
 - ✓ **Goal Date** (the optimal early deadline)
 - ✓ **Deadline Date** (normally 20% before the drop dead deadline (or DDD))
 - ✓ **Drop Deadline Date** (the latest a possible task can possibly be completed before impacting other tasks)

Project Tracking

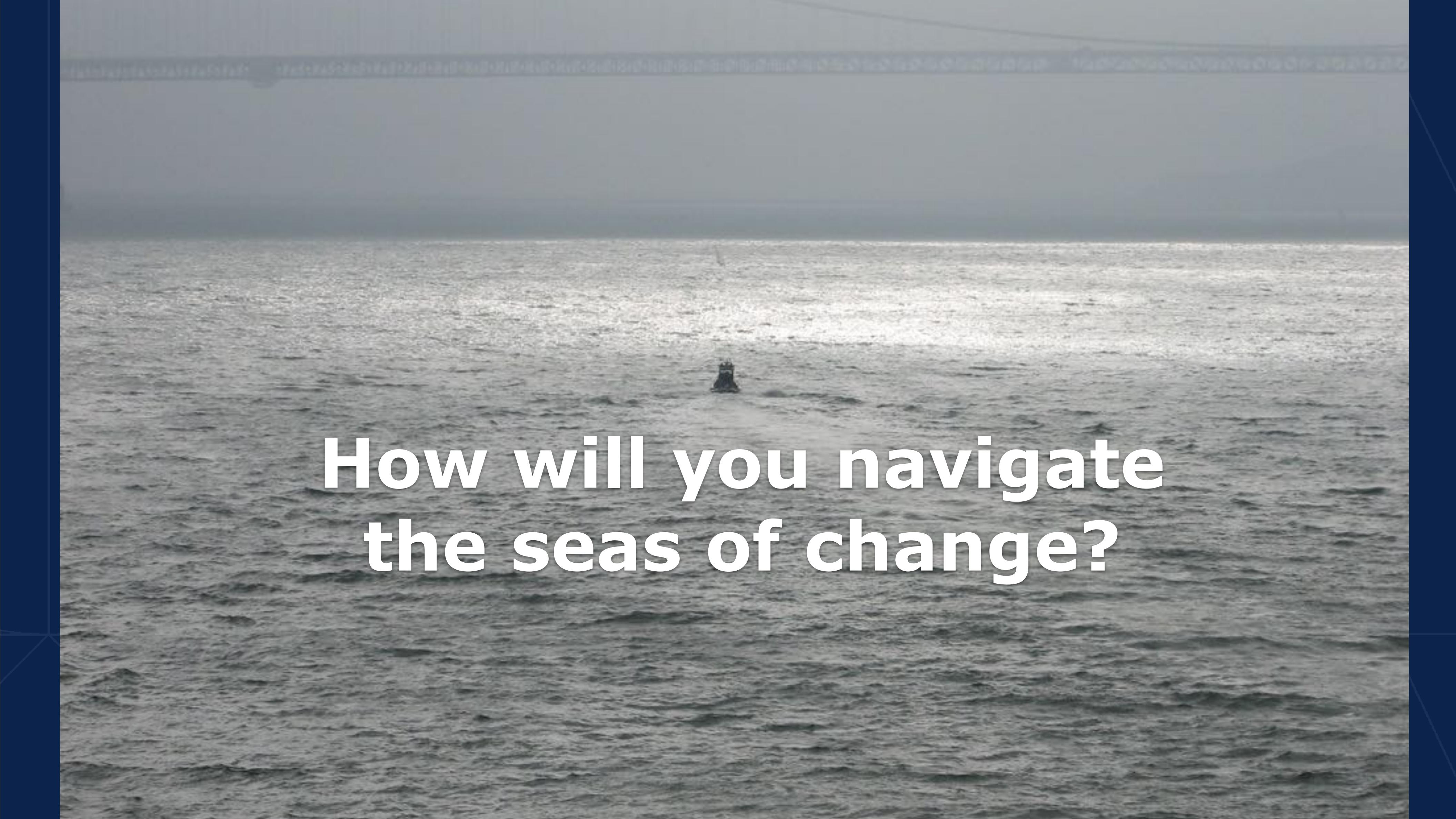
- The fine balance between micro-managing and not managing at all
- Checking in regularly about progress & obstacles
- Purpose should to be aid not punish
- ***Together for success instead of failure as individuals***



Group Relations

- Accountability & Sociability
- Group agendas versus hidden agendas
- Adequate timelines
- Opportunities for stress release



A wide-angle photograph of a vast, dark sea under a heavy, grey sky. In the middle distance, a small, dark boat is visible on the horizon. The water is textured with small waves.

How will you navigate
the seas of change?