
SOFTWARE PROJECT MANAGEMENT

WEEK 3 – 09/09/19

GROUP PROJECT INFORMATION



Objective:

- To give students the opportunity to practice using software development methods and tools.

Specifics:

I. Team formation.

- 5 or 6 students per team
- From the same lab section
- Team composition -- determined by the TAs based on survey responses.
- You will find out about your teams during recitations this week

GROUP PROJECT INFORMATION



2. Requirements

- A working software application
 - Includes a “front-end” user interface, a backend database, and a “middle layer” that connects them.
 - Includes user/password login management
- Documentation of your development processes
- Use of a git repository for ALL deliverables
- Milestones – evidence of progress along the way
- Each milestone has specific required deliverables
- Work as a team
- Follow a “methodology”

GROUP PROJECT INFORMATION

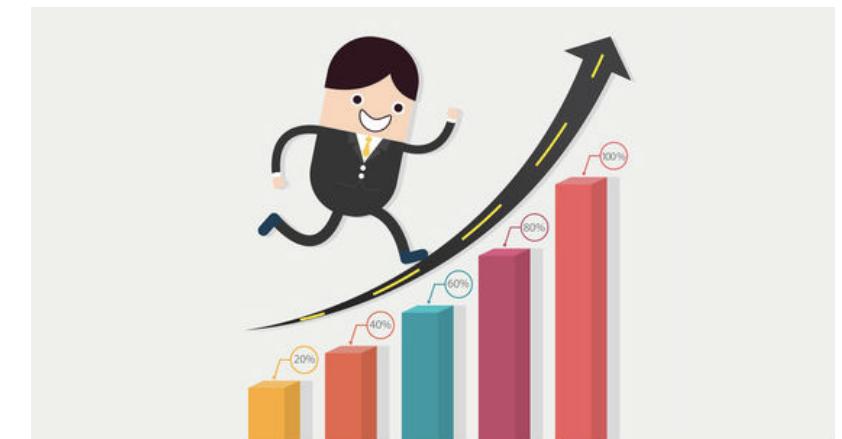


3. Grading Components

- A working software application
 - includes a “front-end”, middle layer, and a backend database
 - User login account/password management
- Documentation of the development processes
- Milestones – evidence of progress along the way:
 - Milestones 1-2 and 4-7 are submitted and graded as a team
 - Adjustments based on Participation
 - Milestone # 3 (Individual Interviews)
 - Milestone # 8 (Peer Evaluations)
 - Github “commits”

PROJECT MILESTONES

Milestones	Points	Expectation
Milestone 1	40	Project Proposal
Milestone 2	35	Project Tools and Management Methodology
Milestone 3	50	1 on 1 student meetings
Milestone 4	45	Database design
Milestone 5	25	Application testing plan
Milestone 6	40	Project Presentations
Milestone 7	50	Final Project Report and Product Functionality
Milestone 8	15	Final Reflection



WHAT IS A PROJECT?

A series of tasks

Has a distinct beginning and a distinct end

Goal oriented

Bound by time, cost and quality

Requires resources (human and material)

Solves problems; satisfies needs

Stems from a larger strategy/vision

Has a customer and/or sponsor (\$\$)

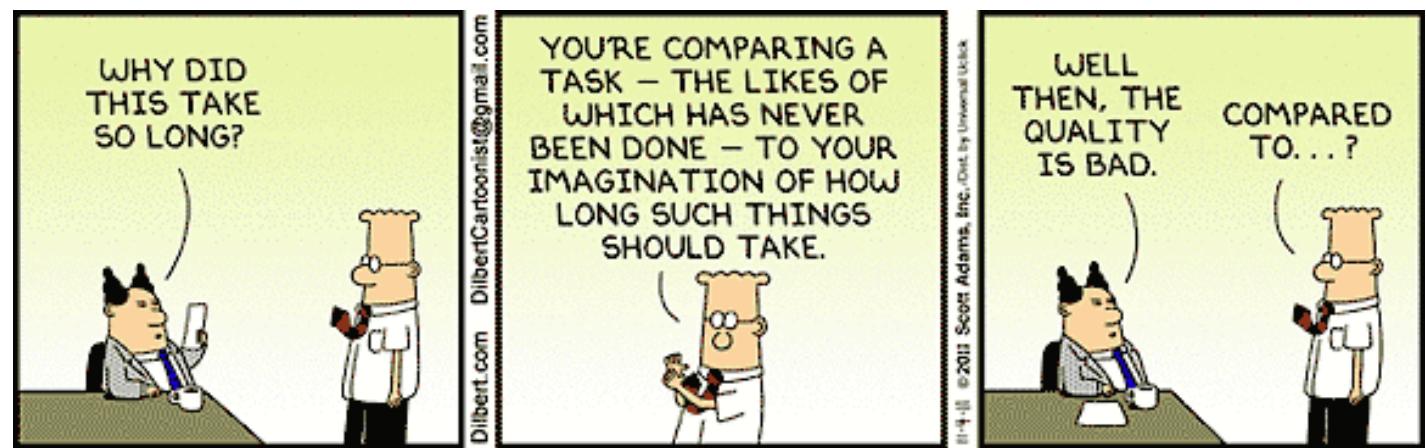
Distinct from a PROCESS

PROJECT LIFECYCLE





Problems that we will definitely face. How about we work on mitigating these?



HOW DO WE DEFINE SUCCESS?

Factors

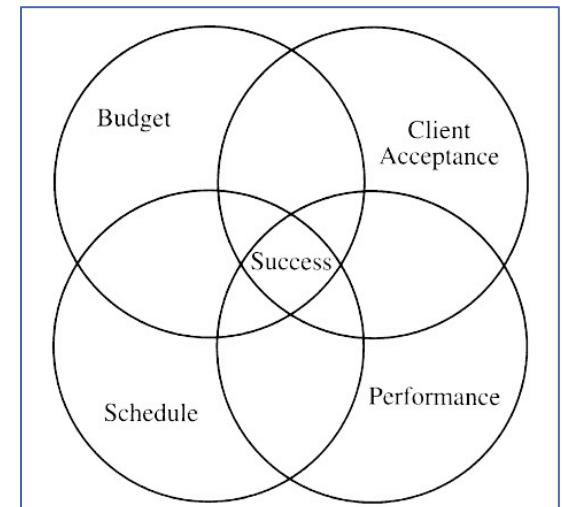
- On time?
- On budget?
- Meets objectives?

Triple Constraint Model

- Time, Cost, Scope

Quadruple Constraint Model

- Add Client Acceptance

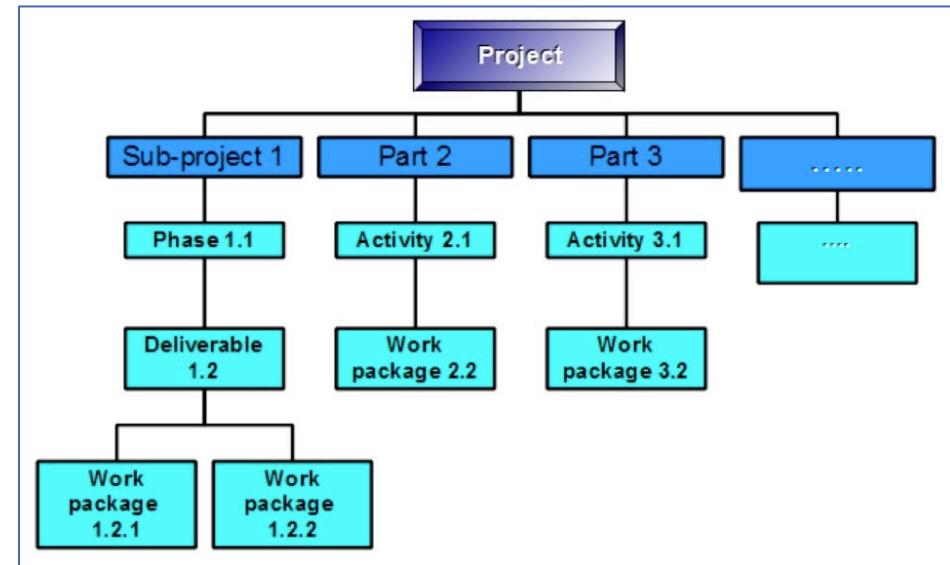


WHAT IS SCOPE?

- Everything about a project
- The work that must be done
- The results that will be delivered
- The solution that will be provided
- Scope must be managed
 - Scope → Requirements
 - Projects fail mostly due to unmanaged scope
 - Undefined requirements
 - Poorly defined requirements
 - Shifting requirements (“Scope Creep”)

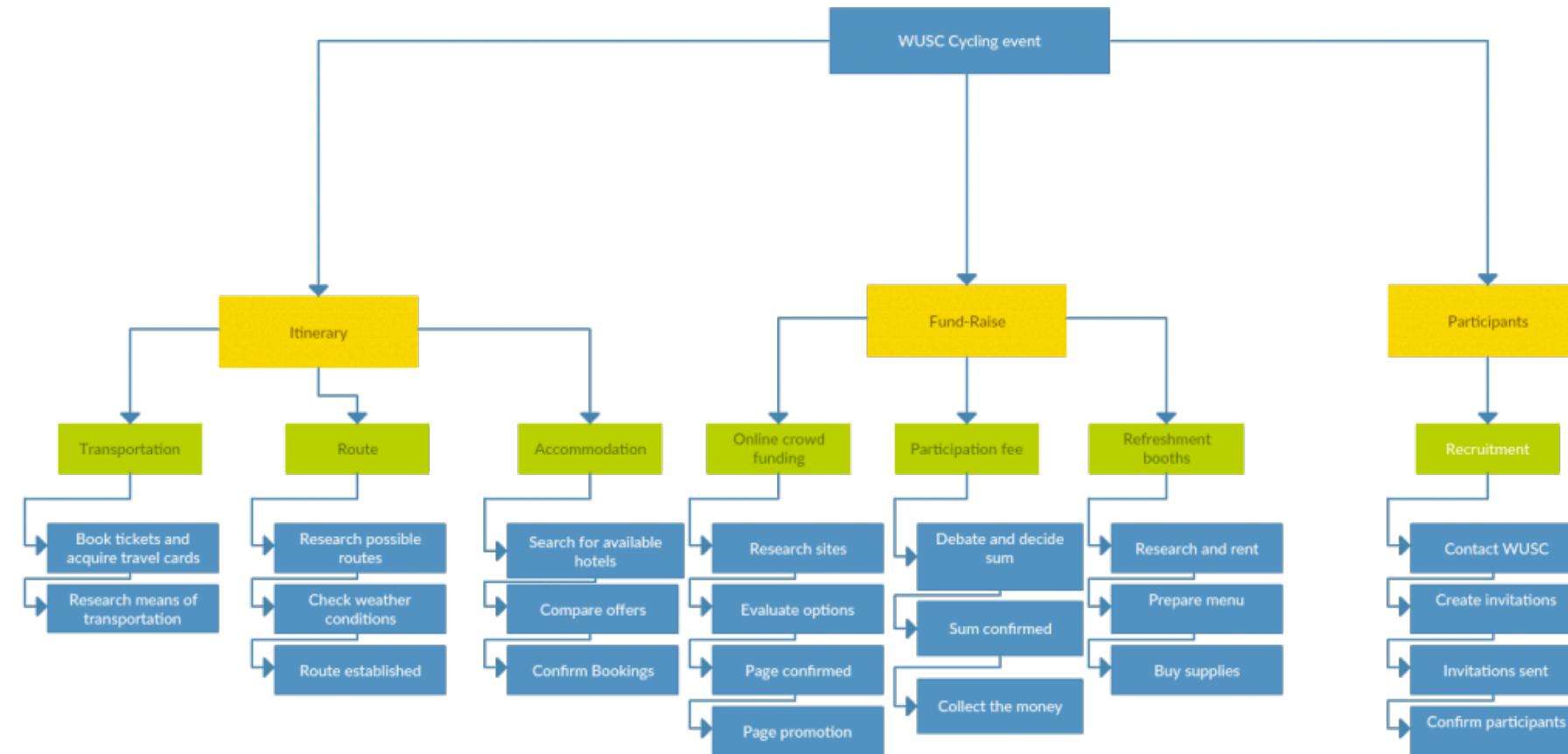
WORK BREAKDOWN STRUCTURE (“WBS”)

- A deliverable-oriented grouping of project elements which organizes and defines the total scope of the project
- “Drill-Down” to tasks
- Each descending level represents an increasingly detailed definition of a project component
- A component may be a product or service



<https://blog.ganttpro.com/wp-content/uploads/2016/10/WBS-example.jpg>

EXAMPLE OF WBS



KEY FACTORS FOR SUCCESSFUL PROJECT MANAGEMENT



Assign a Project Manager



Create a Thorough WBS



Carefully Manage Scope/Requirements Changes



Good communication among team

PROJECT MANAGEMENT METHODS



Waterfall



PMBOK (Project
Management Body of
Knowledge)



Agile



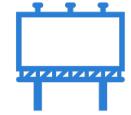
Iterative



Spiral



Xtreme



Kanban

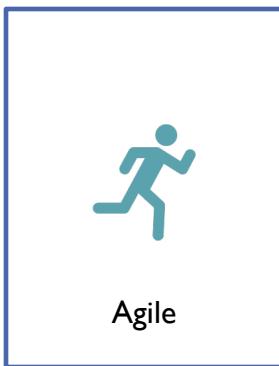
WE'RE GOING TO STUDY IN DETAIL ABOUT



Waterfall



PMBOK (Project Management Body of Knowledge)



Agile



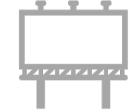
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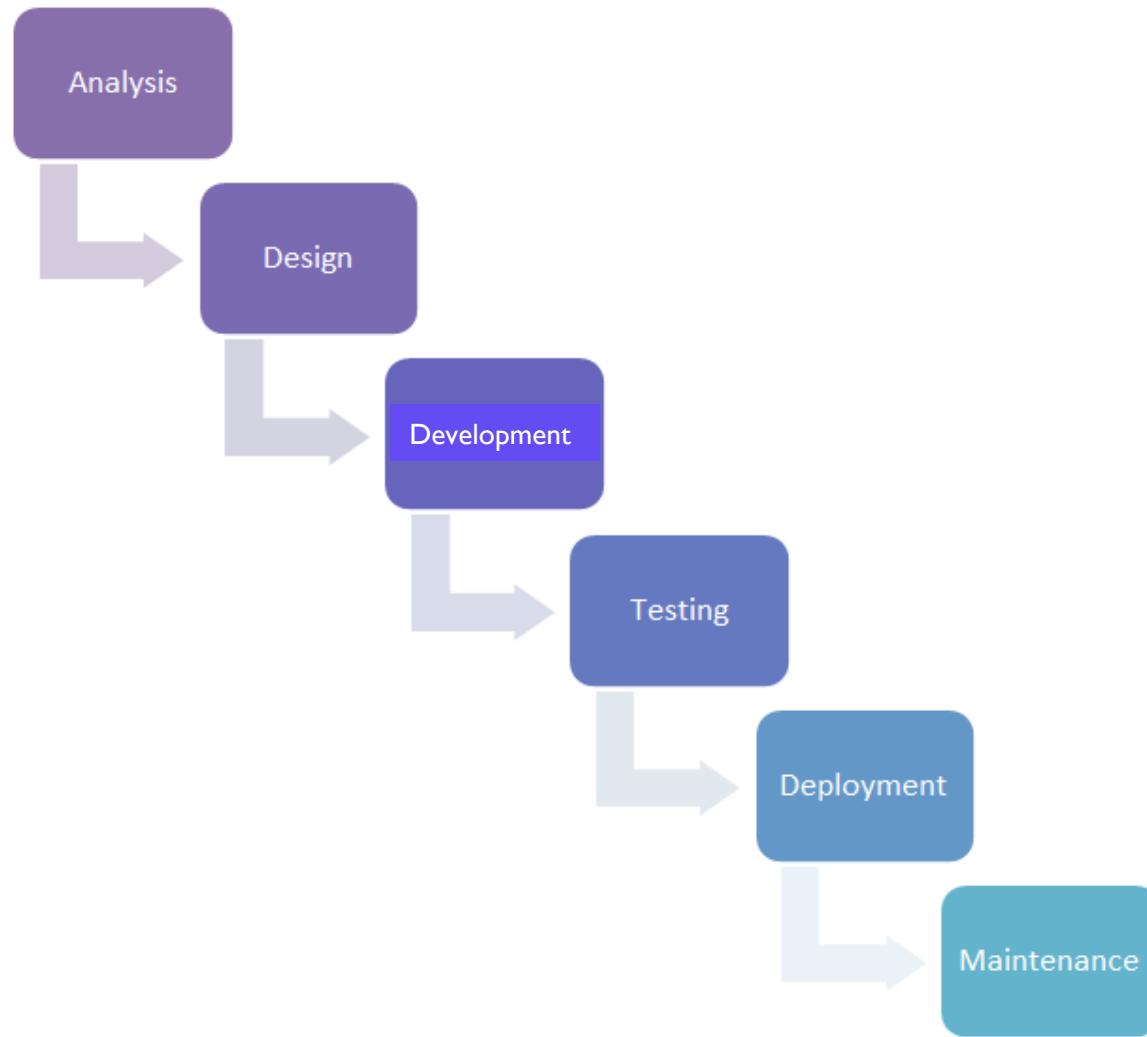


Xtreme



Kanban

WHAT IS “WATERFALL” ?



BENEFITS OF WATERFALL

-  Project sponsors get a clear picture of the complete final product
-  Project sponsors get an accurate, detailed estimate of the cost of the project
-  A “GO/NO GO” decision is made at the end of each phase
-  Requires a detailed and accurate Work Breakdown Structure early-on in the project
-  The scope of the project is locked down at that time, and should remain unchanged until solution delivery
-  Any changes to scope must be strictly managed
-  A decision to change scope demands renegotiating the project timeline and costs

- A guppy in a shark tank
- Red roses with thorny stems
- Many maids mop motels.

CHALLENGES WITH WATERFALL



A successful project demands a detailed and accurate Work Breakdown Structure early-on



The scope of the project is locked down at that time, and should remain unchanged until solution delivery



Changes to scope, even when well-managed, will extend project timeline and costs



Once requirements are defined, customers are much less engaged during the design and construction phases



Customers must wait until the project is over to enjoy any tangible benefit from the project

WHAT IF?



What if we don't know?



What if they changed their minds?



What if their demand changes, but won't let me change the budget or timeline?

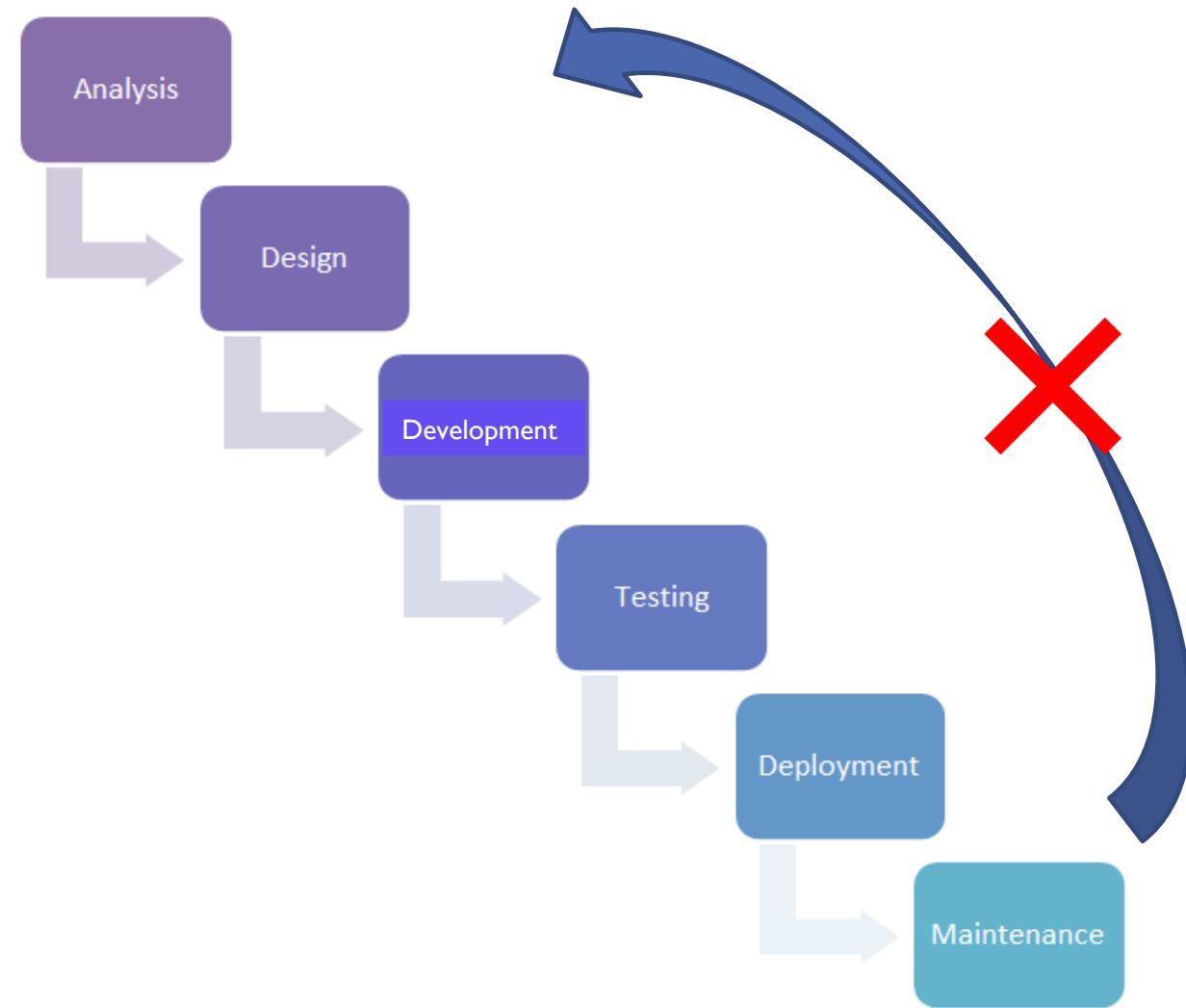


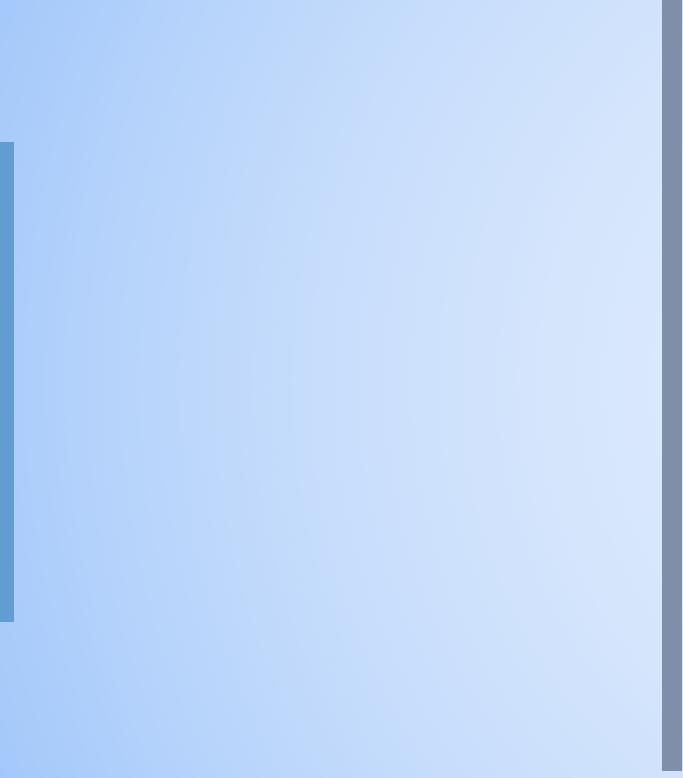
What if the customers are agitated about being out of the loop?



What if they want to see results before we are ready?

WHAT IS LACKING IN “WATERFALL” ?





HOW DO WE
FIX THAT ?