



Waterfall vs. Agile Project Management

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Waterfall vs. Agile Project Management

Agenda

- What is a Project
- Overview
 - Traditional Project Management
 - Agile Project Management
- The Differences
 - Product Life Cycle
 - The Teams
 - Requirements
 - WBS/Product Backlog
 - Schedule
 - Risk
 - Quality
- Q & A



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Waterfall vs. Agile Project Management

What is a Project?

- Temporary
- Goal
- Constrained



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What makes projects special?

- Projects are characterized by uncertainty



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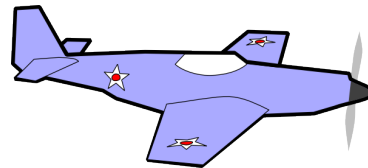
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Waterfall vs. Agile Project Management

Traditional Waterfall Projects

- Traditional Waterfall Projects

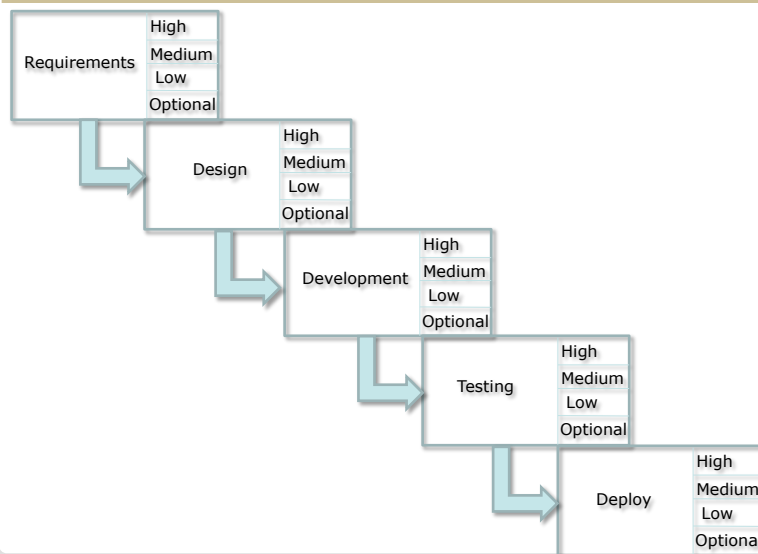
- Dates from the end of WWII
- Grew out of Defense industry
- Based on Deming Cycle of *Plan-Do-Check-Act*
- Emphasizes heavy up-front analysis
- Lots of documentation
- PMBOK versions 1-4



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Traditional Waterfall Project



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Waterfall - Advantages



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Waterfall - Advantages

- Established Processes- Project Management Body of Knowledge
- Management Controls
- (Apparent) Predictability
- Great for low uncertainty/high dependency projects
 - Construction
 - Update of established product
 - Maintenance projects

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Waterfall - Disadvantages



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Waterfall - Disadvantages

- Sometimes is more about the **Process** than the **Product**
- Keeps the customer at bay – by the time they see the end results it may be too late
- Project teams often become rigid and resistant to change: “Those darn users keep changing their minds.”
- Long product development time

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Agile Project Management

- The Agile Way
 - Experiments in the 1990s
 - Values self-organizing teams
 - No formal “project management”
 - Iterative approach
 - Flexible



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Manifesto

- **The Agile Manifesto** for Software Development
 - *"We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:*
 - **Individuals and interactions** over *processes and tools*
 - **Working software** over *comprehensive documentation*
 - **Customer collaboration** over *contract negotiation*
 - **Responding to change** over *following a plan*
 - *That is, while there is value in the items on the right, we value the items **on the left** more."*

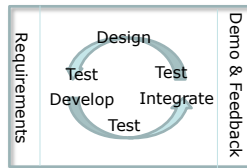
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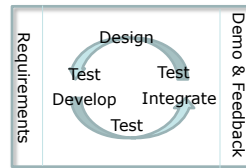
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The Agile Way

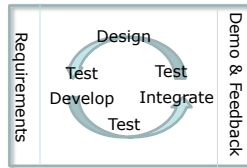
Sprints – High Priority Features



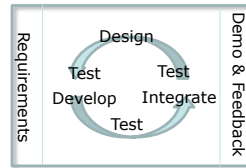
Sprints – Medium Priority Features



Sprints – Low Priority Features



Sprints – Optional Priority Features



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Agile - Advantages



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Agile - Advantages

- Shorter development cycles
- Customer participates, providing direct feedback
- Team-ownership – developers, testers, analysts and customers work together
- Process encourages and easily adapts to change
- Improved quality because testing is continuous

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Agile - Disadvantages



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Agile - Disadvantages

- Lack of established processes
- Management resistance to change
- Reduced (apparent) predictability
- Requires culture change
- It's new – there isn't a lot to draw upon

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Project Life Cycle

- | | |
|-----------------------------|--------------------------------|
| ● Traditional:
waterfall | ● Agile Projects:
iterative |
| — Initiate | — Envision |
| — Plan | — Speculate |
| — Define | — Explore |
| — Design | — Adapt |
| — Build | — Close |
| — Test | — Repeat as
necessary |

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The Team

- Waterfall
 - Sponsor
 - Product Manager
 - Project Manager
 - The Team – defined roles
- Agile
 - Sponsor
 - Product Owner
 - Scrum Master
 - The Team – variable roles

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The Requirements

- Waterfall
 - Large Document
 - Formal, based on analysis
 - Performed by Business Analyst
 - Completed before any development begins
- Agile
 - Small Index Cards
 - User Stories, based on conversation
 - Performed by the Product Owner
 - Completed "just in time"

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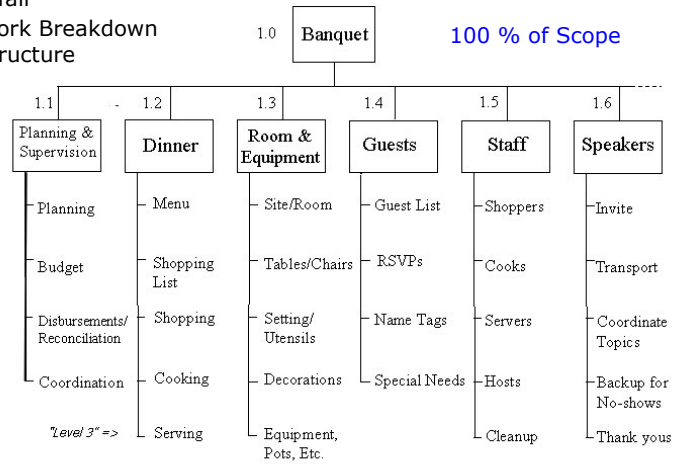
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The Foundation Documents

- Waterfall

- Work Breakdown Structure



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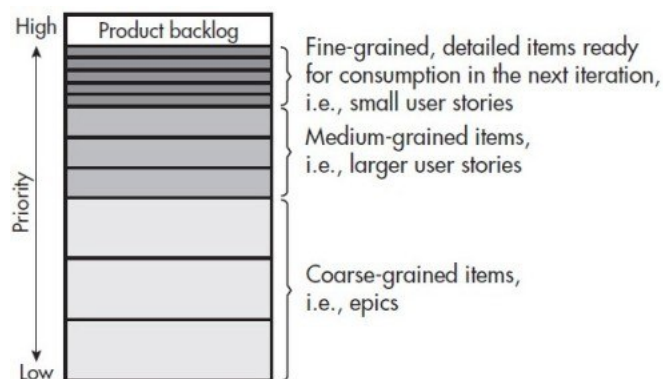
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The Foundation Documents

- Agile

- The Product Backlog



Roman Pichler, Agile Product Management

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The Schedule

- Waterfall
 - Built before work begins
 - End date is often predetermined
 - Strives to predict the future
 - Emphasizes delivery of the entire product
- Agile
 - Rebuilt every sprint
 - End date evolves based on team velocity
 - Focused on near-term accuracy
 - Emphasizes regular delivery of working features

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Risk

- Waterfall
 - Inherently high-risk based on long product cycles
 - Emphasizes the ability to predict the future
 - Risk Register
- Agile
 - Inherently low-risk based on customer feedback
 - Emphasizes adaptation to changing environment
 - Risk Register

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Quality

- Waterfall
 - Testing is at the end of the project
 - Testers work separately from developers
 - User Acceptance occurs at the end of the project
- Agile
 - Testing begins before development
 - Testers and developers work together simultaneously
 - User Acceptance occurs at end of every sprint

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What's Different?

- Waterfall
 - Plan all in advance
 - Work Breakdown Structure
 - Functional specs
 - Gantt chart
 - Status reports
 - Deliver at the end
 - Learn at the end
 - Follow the plan
 - Manage tasks
- Agile
 - Plan as you go
 - Product Backlog
 - User stories
 - Release plan
 - Story boards
 - Deliver as you go
 - Learn every sprint
 - Adapt everything
 - Team ownership

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Summary

- Both Waterfall and Agile have the same goals:
 - Delivering a well-tested product that satisfies the customer within an efficient time frame that doesn't leave the team worn out**



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Questions



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Thank You



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