

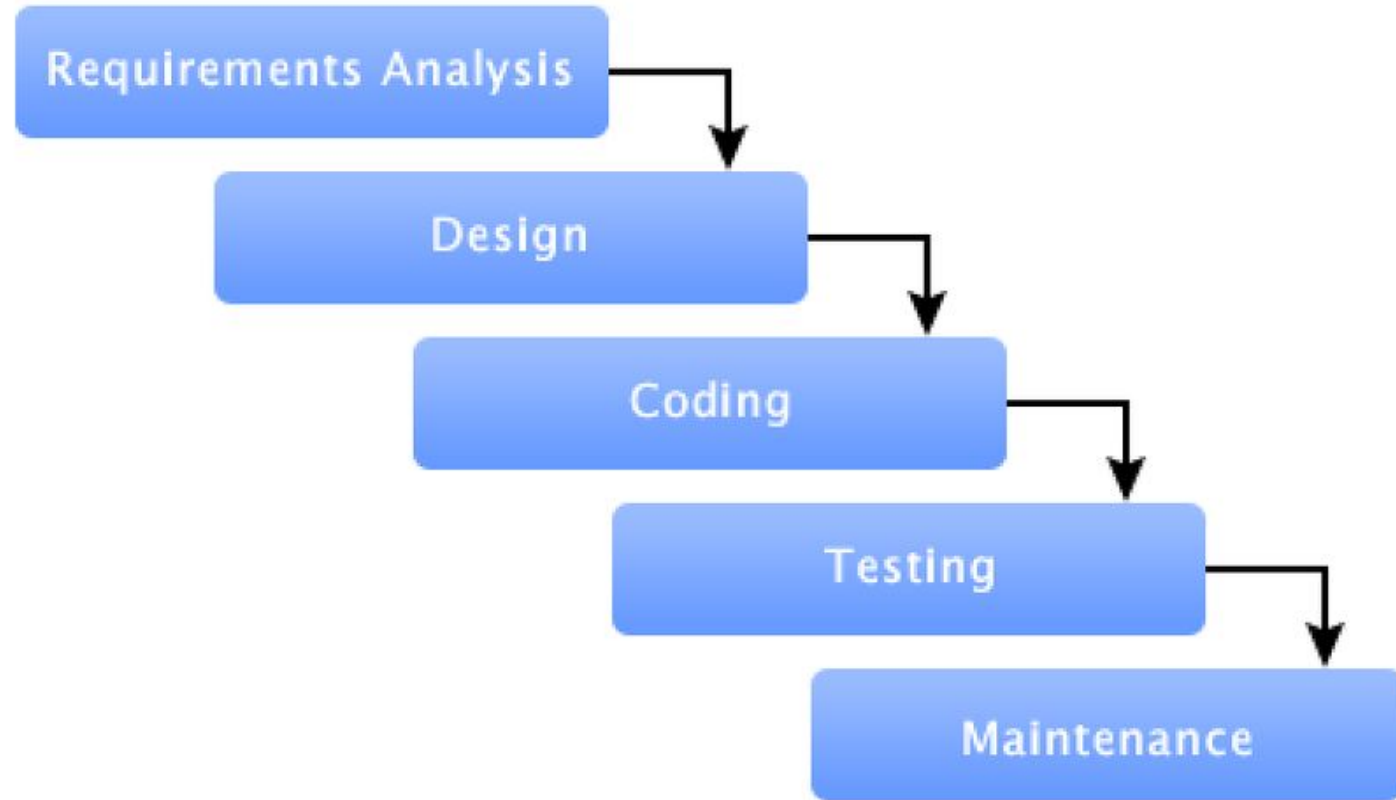
Software Analysis and Design (CS3004)

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Lecture 4, 5 & 6

Software Process:

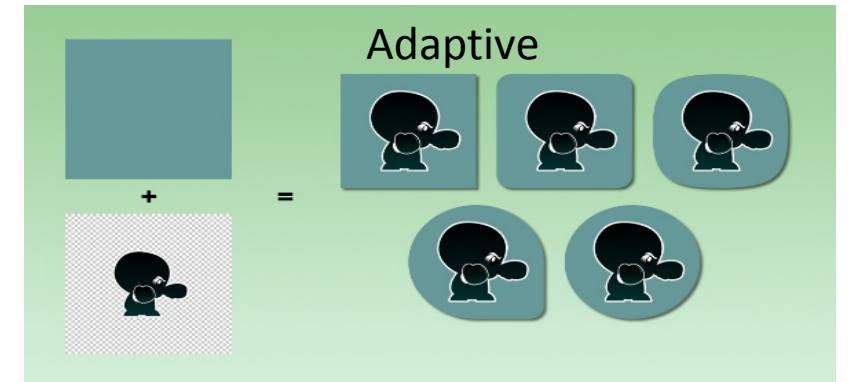


Software Development Models

Predictive



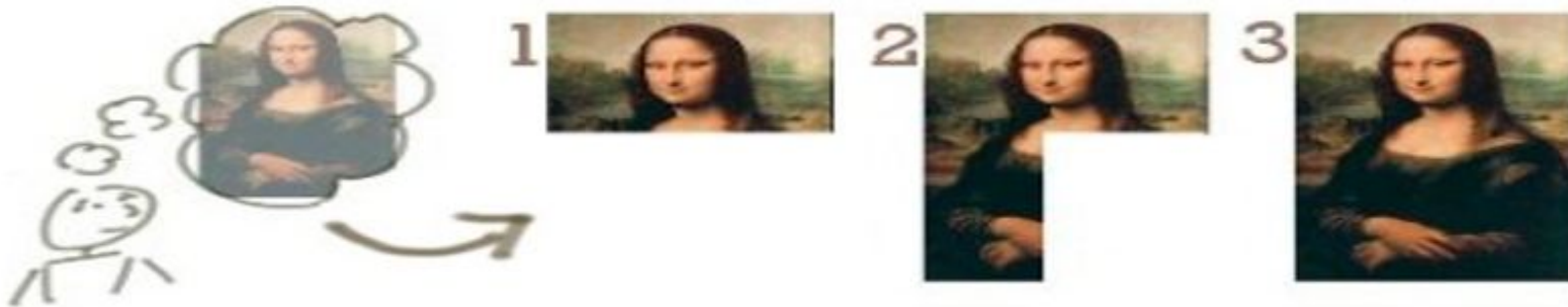
Predictive VS Adaptive



Software Development Models:

Incremental vs. Iterative

Incremental



Iterative



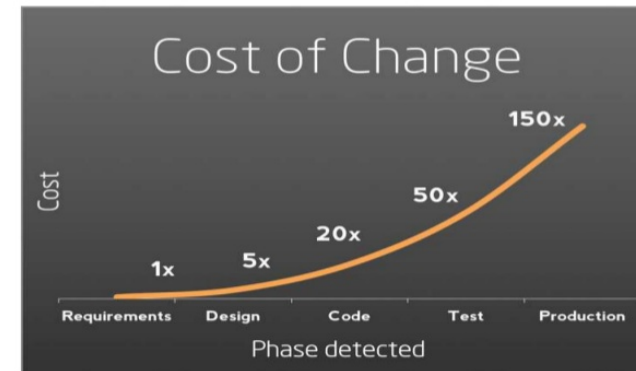
Traditional method

Assumptions:

1. Requirements are very well understood.
2. Team has experience building similar projects (like ATM Machine).

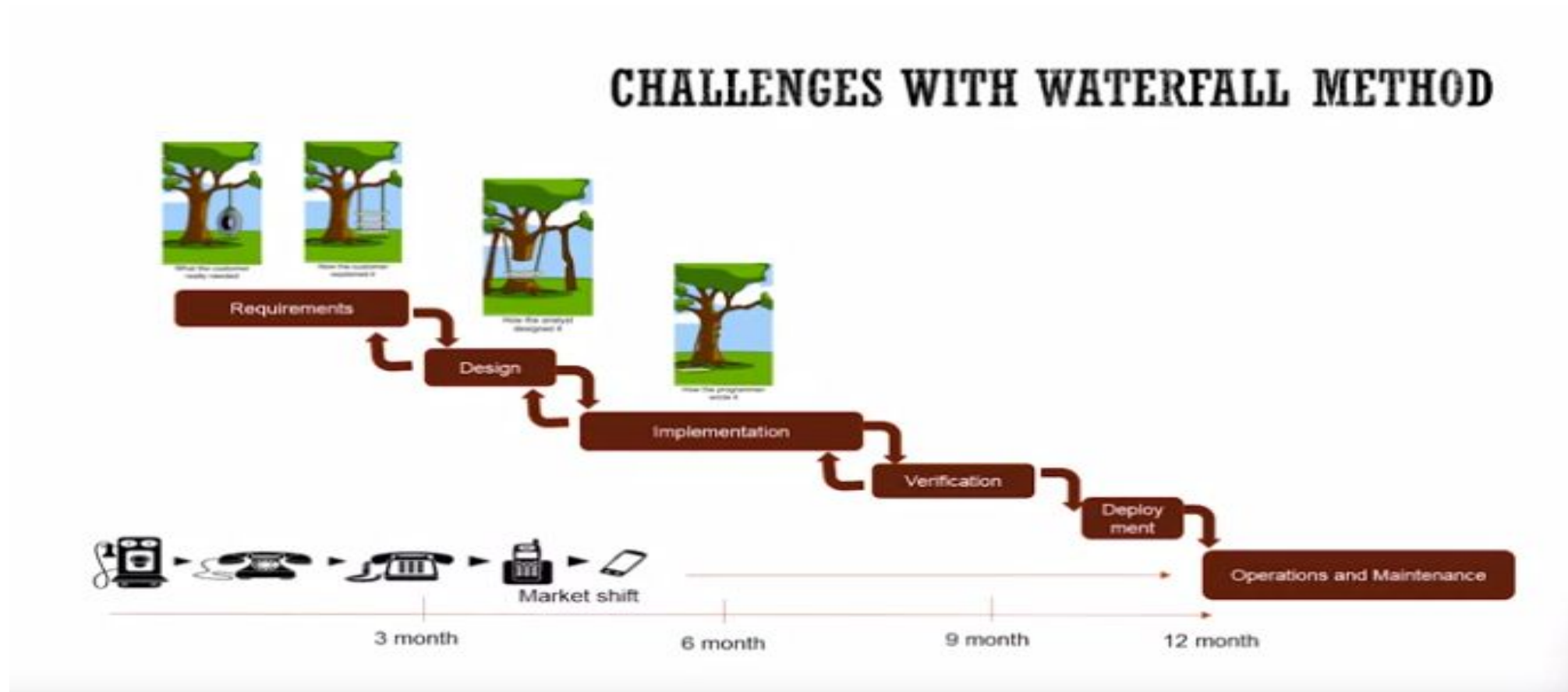


Traditional development



Boehm's Cost of Change Curve: Change gets more expensive over time

Challenges



Waterfall Model



Pros:

- Easy to understand and simple
- Predictable
- Efficient

Cons:

- Not flexible for change
- First release take a long time

Use:

- Repeated Project
- For Predictable project
- Good for small scale projects

Is it predictive or adaptive?



Predictive

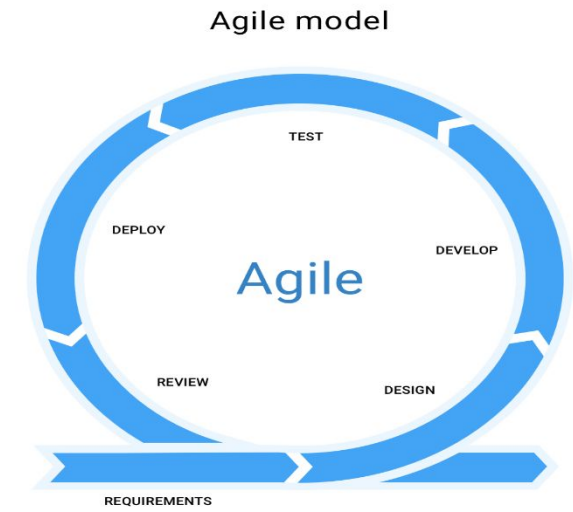
Agile Manifesto:

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

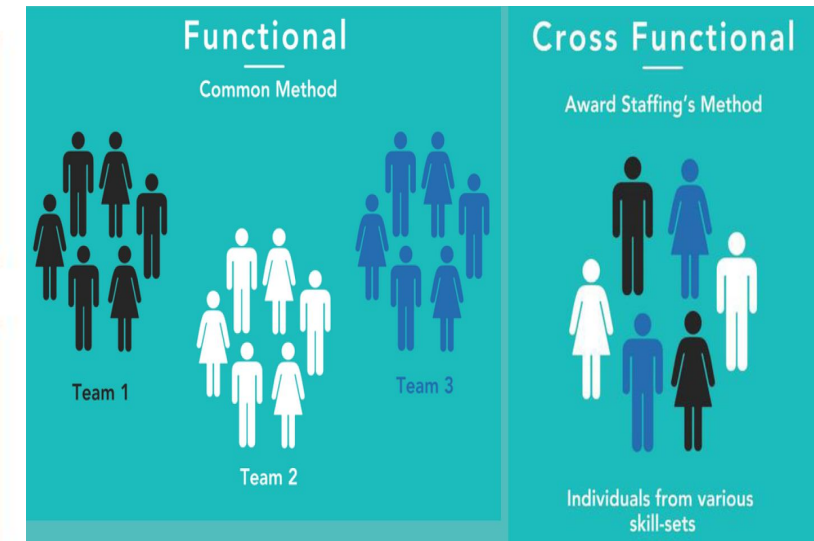
That is, while there is value in the items on the right, we value the items on the left more.”

What is Agile?

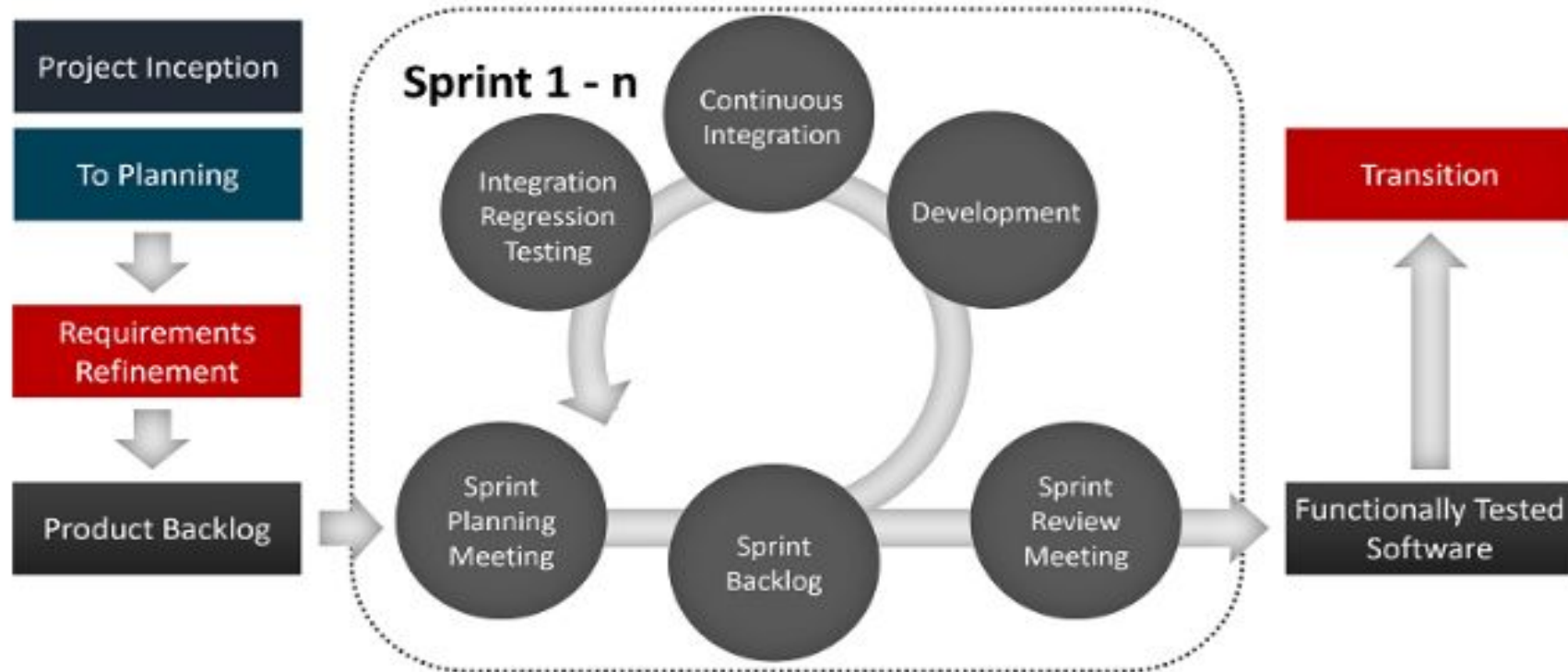


Agile software development is a group of software development methods based on iterative and incremental development, where requirements and solutions evolve through collaboration between self-organizing, cross functional teams.

It promotes adaptive planning, evolutionary development and delivery, a time-boxed iterative approach, and encourages rapid and flexible response to change.



Adaptive: Agile Software Development Methodology



Adaptive: Agile Software Development Methodology

HOW DOES IT SOLVE PROBLEMS OF WATERFALL MODEL?

- Adaptive
 - Deliver working software frequently
 - Welcome change
 - Technical excellence and good design
 - Continuous improvement

- People and Interaction
 - Business and Developer work together
 - Face-to-Face conversations
 - Self organizing teams
 - Promote sustainable development
 - Motivated individuals

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- Detect translation issues early
 - Validate user needs earlier
 - Detect Integration issues early

- Detect translation issues early

Adaptive: Agile Software Development Methodology

WHAT NEW PROBLEMS DOES IT BRING?

- Adaptive
 - Deliver working software frequently
 - Welcome change
 - Technical excellence and good design
 - Continuous improvement
- People and Interaction
 - Business and Developer work together
 - Face-to-Face conversations
 - Self organizing teams
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- Architecture/Design/Database modeling is challenging
- Lack of control / Unpredictable Journey - Very uncomfortable for Leaders/Organizations



- Requires participation from customers through out the development process



Task 1

EXAMPLE 1

- Company X need to install a well known HR Management System at a big retailer's HQ.
- Company X has done many such installs on other big retailers before.

Solution

