



WHITESTEIN
Technologies

Object-Oriented Software Engineering

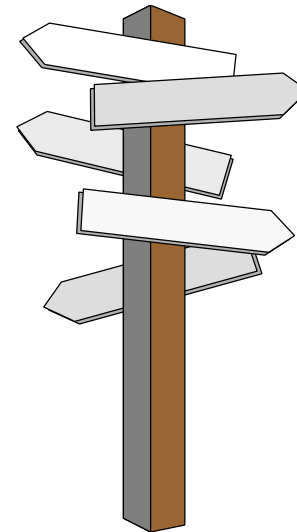
Introduction

February 16, 2001

Content



- Introduction
- Requirements Management
- Business Modeling
- Analysis & Design
- Implementation
- Testing
- Deployment
- Project Management
- Problem/Change Management
- Document Management



Sources

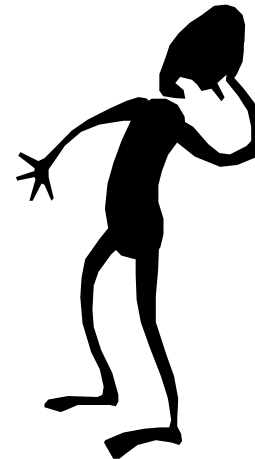


- ❑ Rational Unified Process
- ❑ Extreme Programming
- ❑ ICONIX Unified Object Modeling approach
- ❑ Whitestein Technologies Project Process Model
- ❑ “Old-fashioned” O-O development methodologies (OMT, OOSE, Booch, etc.)
- ❑ The best SW engineering practices

Risk: The Basic Problem



- Schedule slips
- Project canceled
- System goes sour
- High defect rate
- Business misunderstood
- Business changed
- False feature rich
- Staff turnover



Software Engineering Process



- ❑ a set of partially ordered steps intended to build a software product, or to enhance an existing one
- ❑ the process of developing a system from requirements, either new (initial development cycle) or changed (evolution cycle)



Process Characteristics



- Project-oriented
- Iterative-incremental
- Use case driven
- Visual modeling techniques
- Architecture centric
- Object-oriented
- Managed and controlled
- Component based
- Automated
- Generic and configurable



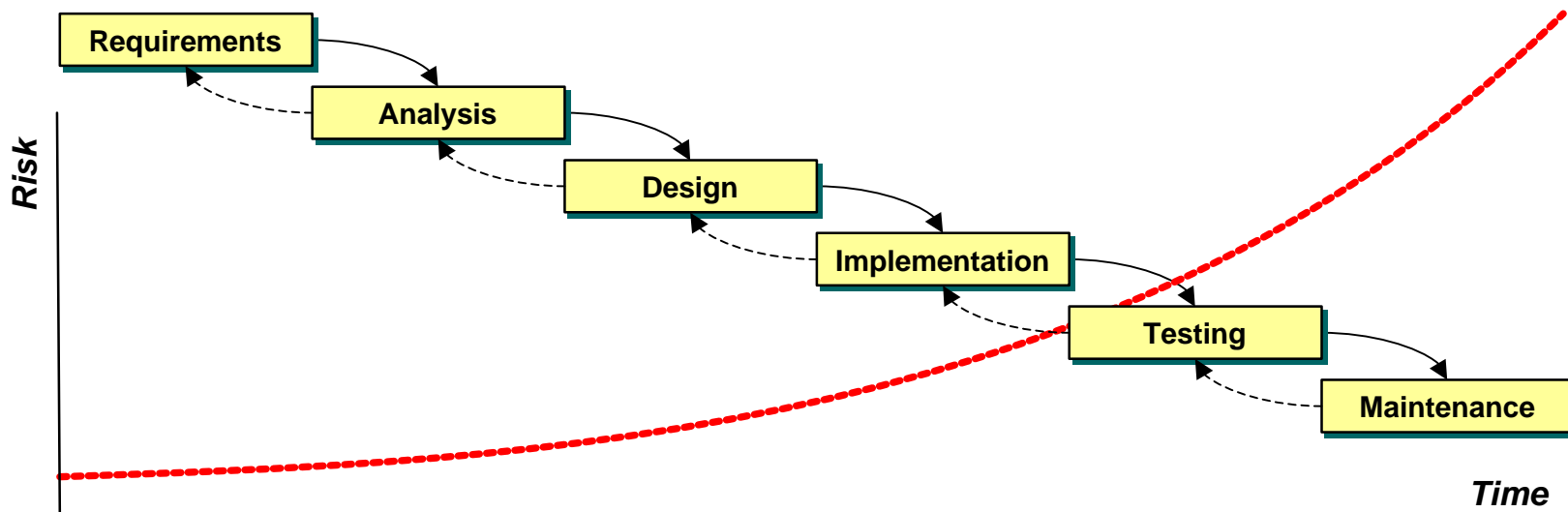
“Classical” Waterfall Lifecycle



- ❑ Disciplined development
- ❑ Complete end-phase documentation
- ❑ Clear and easy manageable
- ❑ Good structured programs



- ❑ Expensive requirements change
- ❑ Difficult to meet real user’s needs
- ❑ Product is delivered only at the end
- ❑ Difficult to deploy product at once



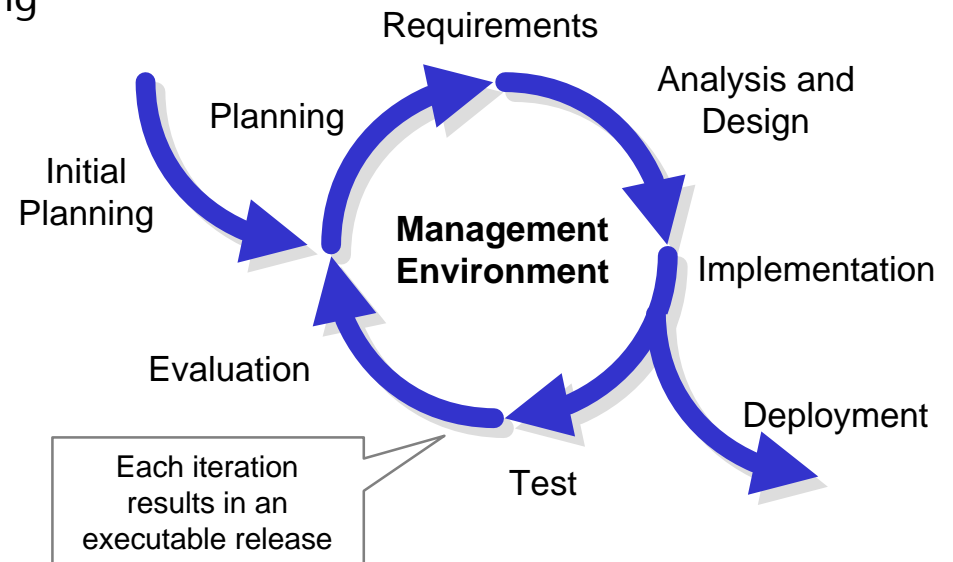
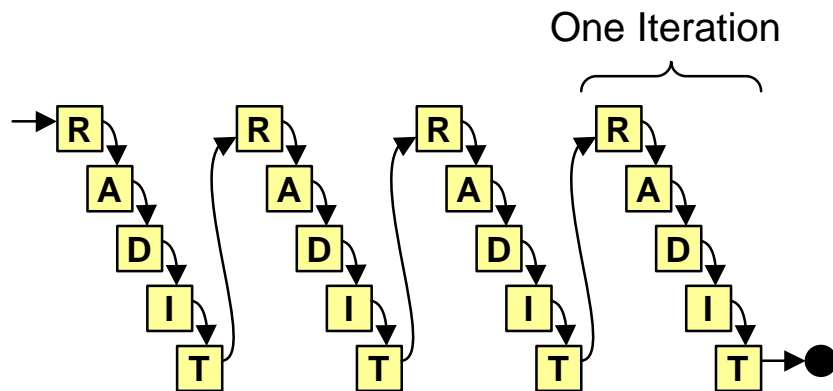
Iterative-incremental Lifecycle



- ❑ Soon deployment of first increments
- ❑ Lower investment for deployment
- ❑ End-user's learning → better requirements
- ❑ Step-by-step deployment
- ❑ After abortion there is something running



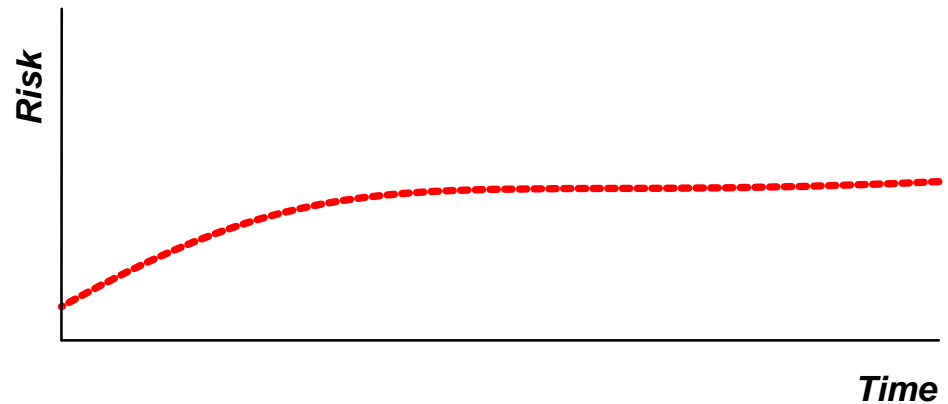
- ❑ Open architecture created first
- ❑ Difficult to manage



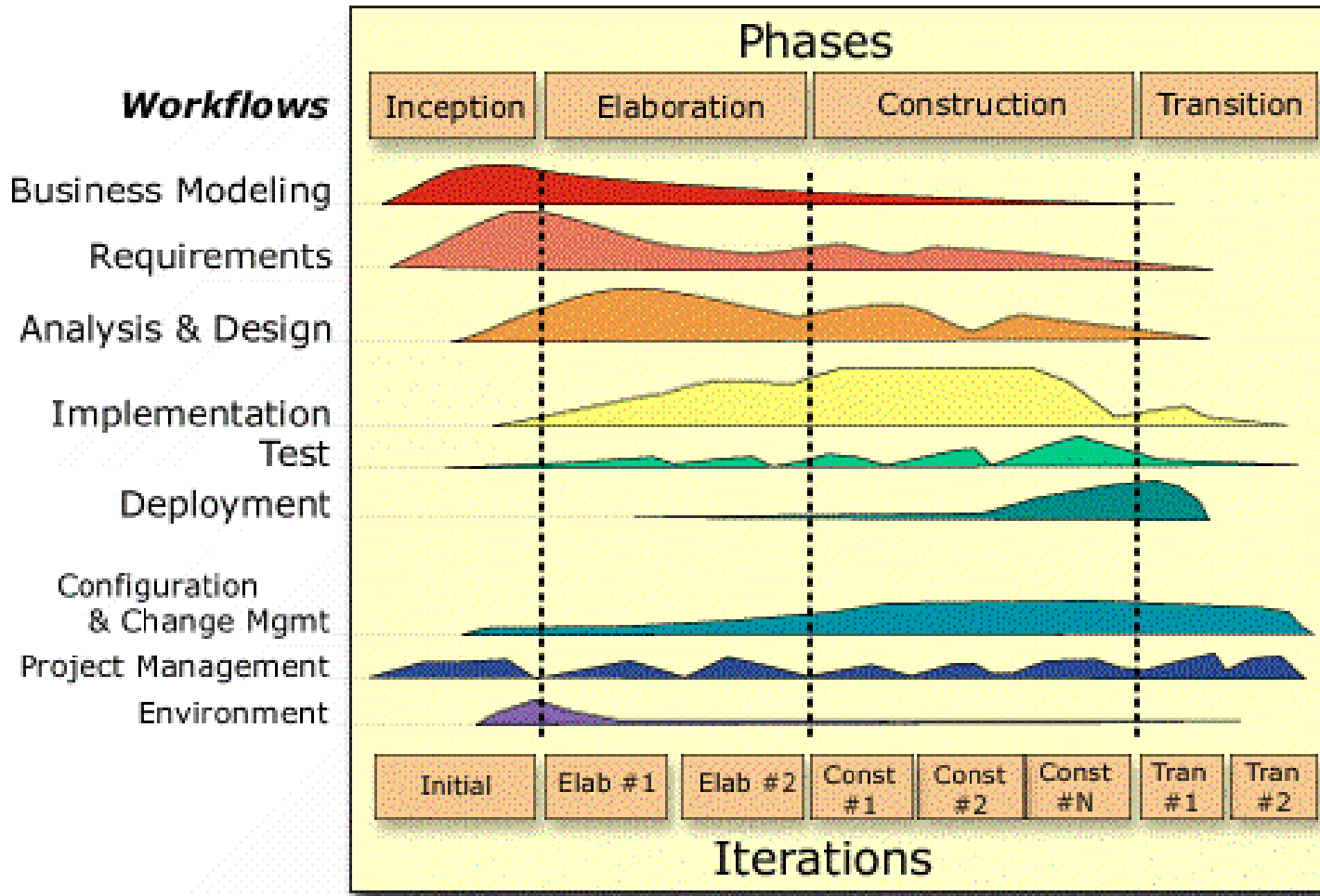
Reducing the Cost of Change



- Incremental change and iteration of solution
- Short release cycles and iterations; “driving the car”
- Small initial investments
- Lots of practice in modifying the design
- A simple design
- Quality work
- Good communication
- Rapid feedback
- Courage
- ...



RUP Schedule Framework



Phases



- ❑ Inception

- define a 'vision' of the end-product and the associated business case, and the overall scope of the project

- ❑ Elaboration

- refine the definition of the product, define and baseline an architecture, and develop a more precise plan for its development and deployment

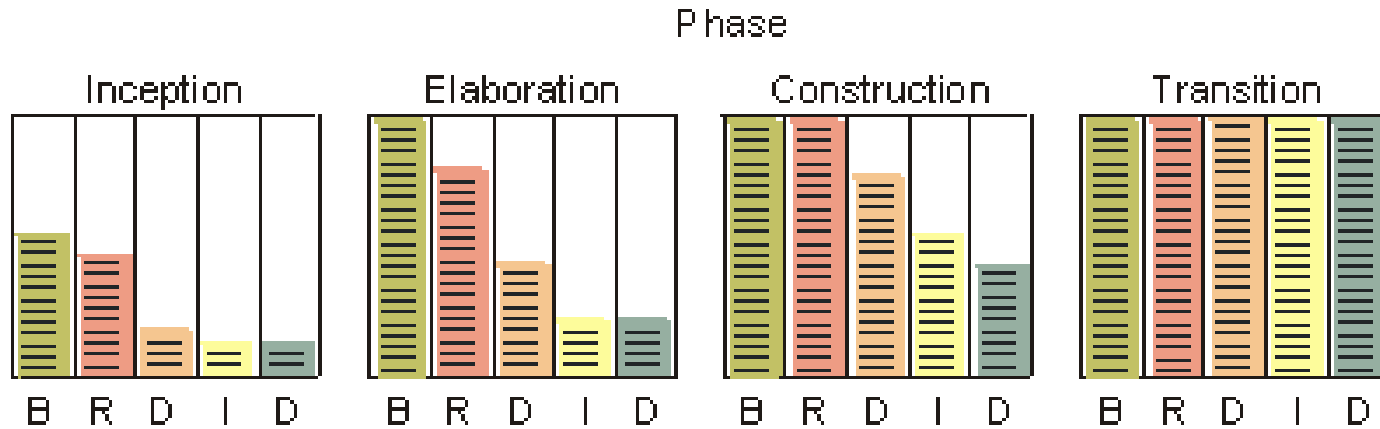
- ❑ Construction

- the product is built, up to the point where it can be put in the hands of its end-users for the first time

- ❑ Transition

- the product is transitioned to the user community; this includes manufacturing, delivering, training, supporting and maintaining the product

Information Evolution



- B : Business set
- R : Requirements set
- D : Design set
- I : Implementation set
- D : Deployment set

Key Concepts

