



Object-Oriented Analysis and Modeling

Introduction

Software Development

- **The value of SW**
 - crucial part of many industries
 - expanding of size, complexity, distribution and importance
- **Development limits of SW industry**
 - it is very difficult to repeatable build and maintain large, complex, distributed and critical SW systems with a good quality
 - quite a young industry
 - SW engineering is not developed as much as other engineering branches

Symptoms of SW Development Fail

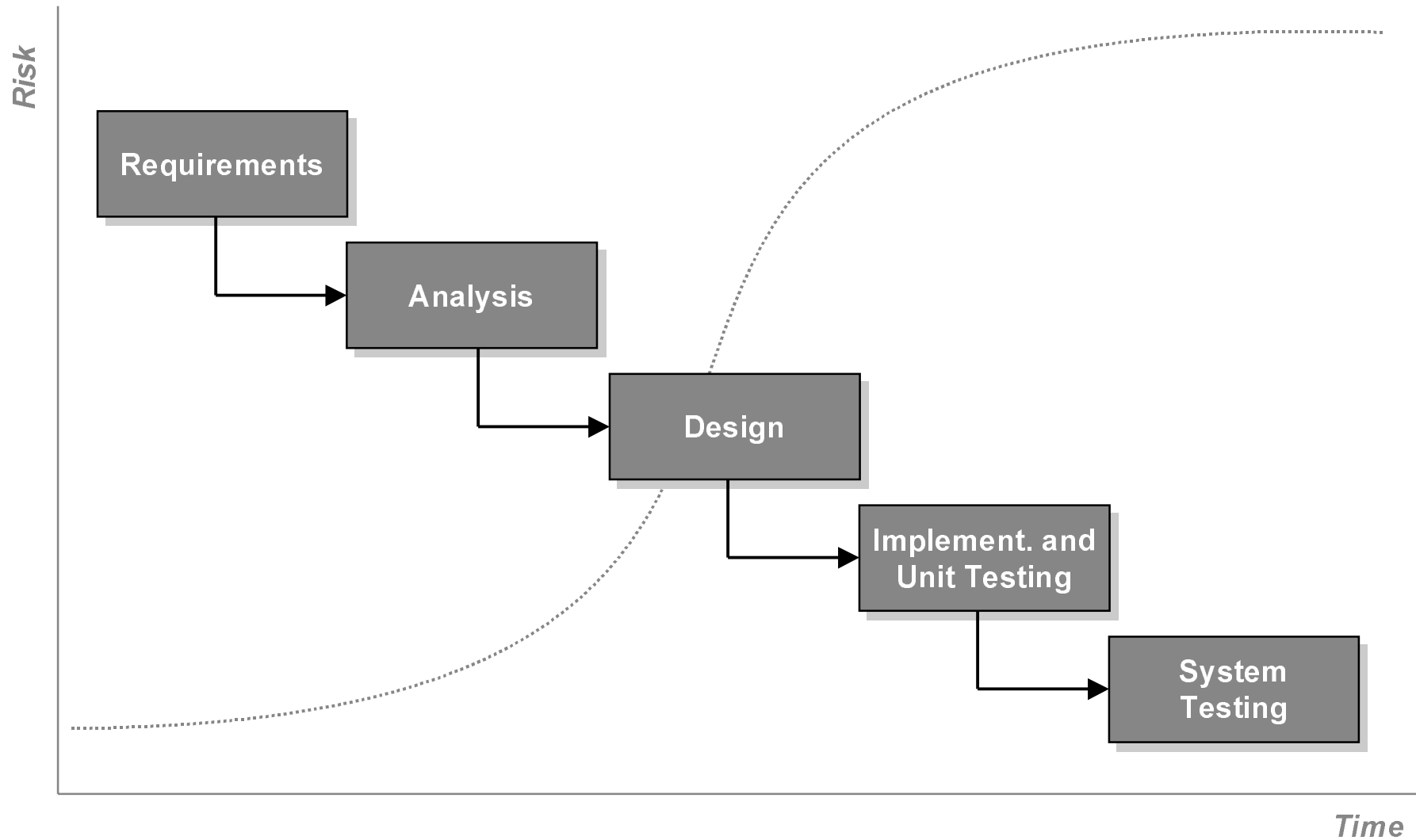
- Inaccurate understanding of end-users needs
- Inability to deal with changing requirements
- Modules that don't fit together
- SW that's hard to maintain or extend
- Late discovery of serious project flaws
- Poor SW quality
- Unacceptable SW performance
- Team members in each other's way, making it impossible to reconstruct who changed what, when, and why
- An untrustworthy build-and-release process

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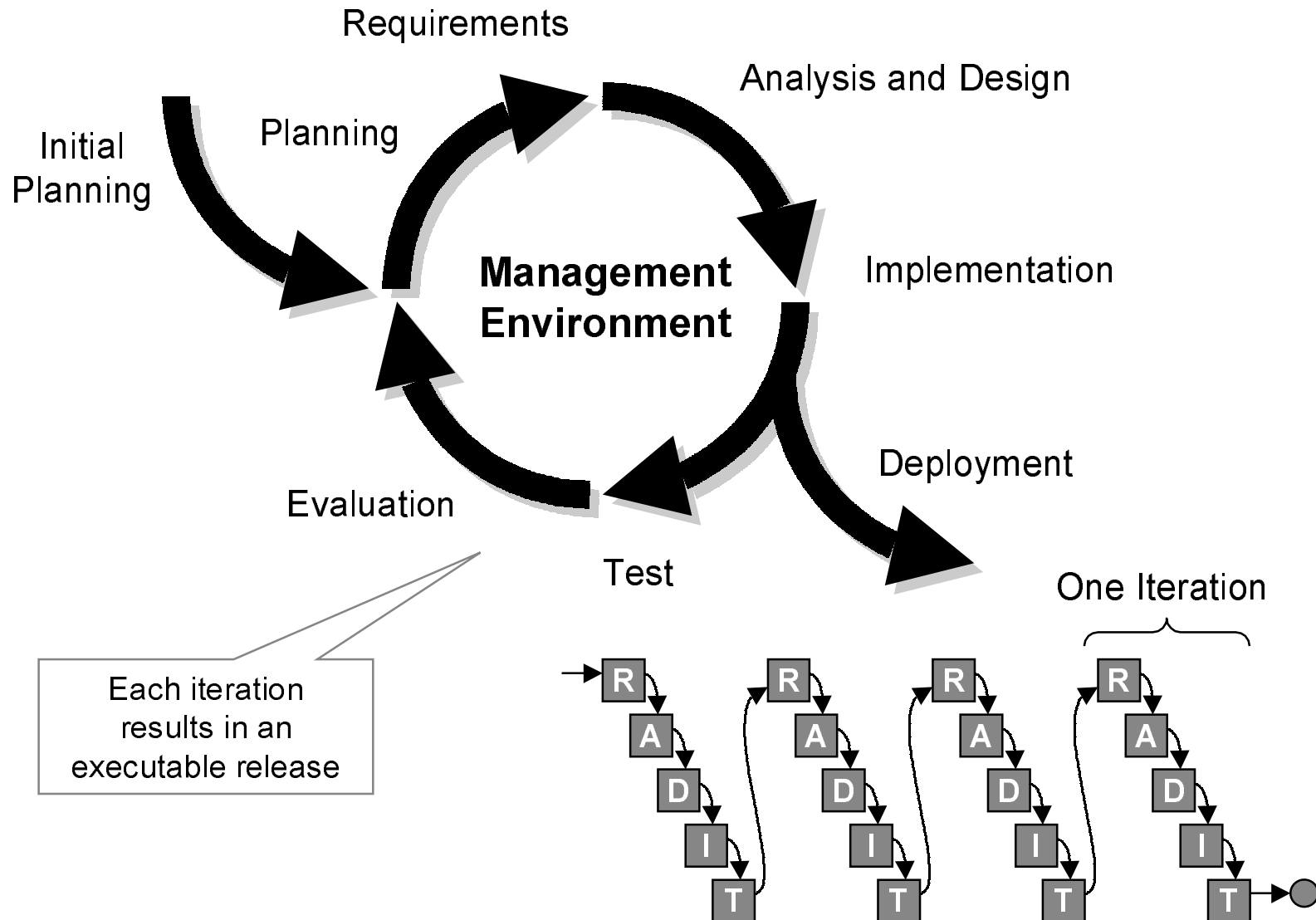
SW Best Practices

- Develop SW iteratively
- Manage requirements
- Use component-based architectures
- Visually model SW
- Verify SW quality
- Control changes to SW
- ...

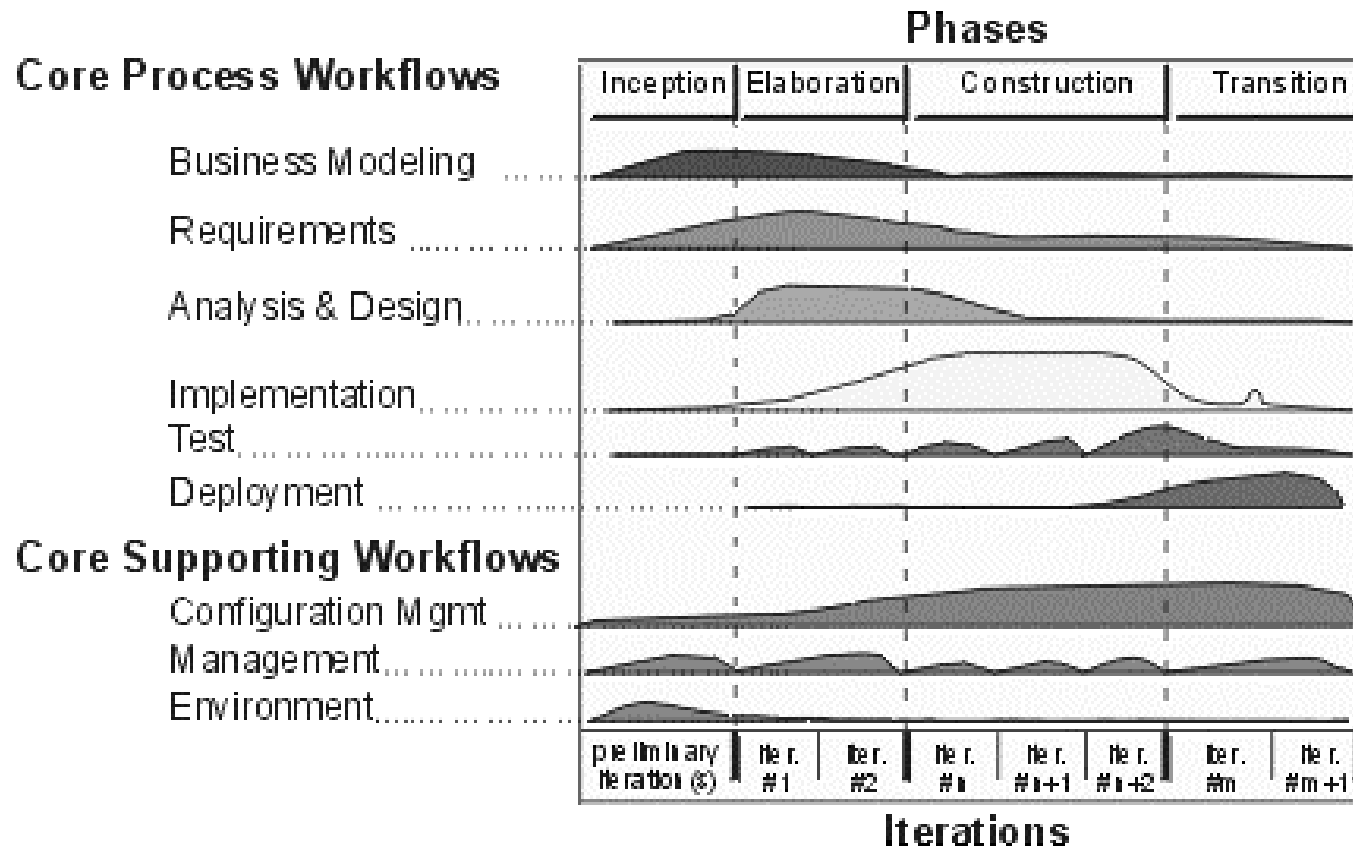
Waterfall SW Life Cycle



Iterative and Incremental Process



Rational Unified Process



Visual Modeling

- Simplification/abstraction of reality
 - Different perspectives
 - Dealing with complexity (SW is inherently complex)
 - Better structuring → SW architecture
- ⇒ **Easy to understand, communicate and modify !!!**