

# Applying UML & Patterns (3<sup>rd</sup> ed.)

## Chapter 5

# EVOLUTIONARY REQUIREMENTS

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# Requirements

- Chp. 1 of Leffingwell & Widrig (2000) motivates importance of managing reqs
- *A requirement* is any capability or condition the system must fulfill
- Req's change so they must be proactively managed in the context of a SW process

# Requirements

- Challenges
  - Discover
  - Verify
  - Document
  - Prioritize
    - Business value
    - Technical difficulty
  - Revise/update/delete
  - Ensure they're implemented correctly (traceability)

# Requirements

- Deferred/rejected requirements
  - Just as important as accepted reqs
  - Document why reqs deferred/rejected
    - Otherwise, you'll revisit the same issues
  - Likely neglected in many agile projects
    - Larman doesn't mention it

# Requirements

- Interesting stats on reqs gathered in waterfall projects
  - 25% of reqs change during project
  - ~65% of reqs never/rarely used!
- UP best practice
  - Use a systematic approach to finding, documenting, organizing and tracking reqs

# FURPS+

- Functional: ability to perform user's task
- Non-functional (URPS+), quality attributes
  - Usability
    - Human factors, help, documentation
  - Reliability
    - Failure rate, recoverability
  - Performance
    - Responsiveness, throughput etc.
  - Supportability
    - Maintainability, configurability, customizability
  - Implementation
    - Languages, tools, hardware

# FURPS+

- Non-functional (contd)
  - Interface
    - Interfaces with 3<sup>rd</sup> party systems
  - Operations
    - System management, operating environment
  - Packaging
    - Physical form factor
  - Legal
    - Licensing, legal, regulatory, etc.

# Documenting Reqs

- Functional reqs go in Use Case Model
- URPS+ usually go in Supplementary Specification
- Glossary may contain validation rules
- Vision may contain high-level reqs

# Documenting Reqs

- Business Rules
  - Domain expertise incorporated in system
  - Arguably most valuable company asset
  - Usually cross application boundaries
  - Should be in separate artifact
- Managing/Modeling business rules is an area where more improvements are needed
- Will have more to say on about this during course