Agile Methodologies

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- Predictive development process.

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- Discussion.

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Predictive development process

- **Software development in 1990s:**
  - **Development processes:**
    - Waterfall: well-defined, clear requirements.
    - Iterative waterfall: predict changes, risk management.
  - **Characteristics:**
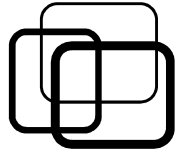   - Planning, draft vs. implementation.
    - Testing vs. implementation.
    - Specification documents.
  - **Results:**
    - 2/3 projects failed!
      (Standish Group)

Predictive development process

- **Reasons to failure:**
    - **Heavy-weight Process:**
        - Document, spec over code.
        - Long iteration.
        - No flexibility.
        - ➔ **Risk to changes.**
    - **Requirement changes:**
        - Unclear requirements.
        - Business changes.
        - ➔ 80% of failed projects.

Predictive development process

- **Predictive vs. Adaptive?**
    - Software is special product:
        - Complexity.
        - Intangibility.

      ➔ Cannot predict or plan in advanced!
    - Prediction ➔ avoid changes, risk.
    - Adaptive process:
        - Short-term plan is easier to change.
        - Code over draft, plan.
        - People over process.
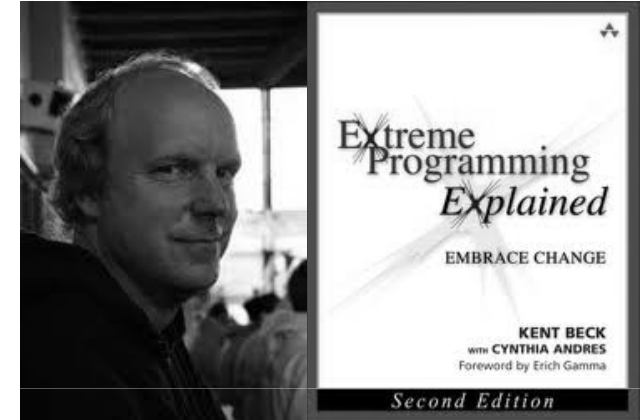   - Short iteration is better.

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Agile Methodologies

- ## Introduction:
  - ### From Kent Beck 1999.
  - ### Agile Manifesto 2001.
  - ### Goal: due with changes.
    - ➔ Live with changes.
  - ### Processes:
    - ➢ eXtreme Programming.
    - ➢ SCRUM.

Agile Methodologies

- **Principles:**
  - Feedback.
  - Simplicity.
  - Communication.
  - Welcome Changes.

Agile Methodologies

- **Practices:**
  - On-site customer.
  - Small releases.
  - Simple design.
  - Test driven development.
  - Pair programming.
  - Continuous integration.

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Discussion

- Agile debates:
    - Agile is just like code-fix and chaotic?
    - Agile is just for small, medium-size projects?
    - Agile is just for professional team?
    - Pair Programming costs to much?
    - Pair Programming lower productivity?
    - TDD takes to much time?