Lightweight Tools for Agile Methods

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This presentation reports on joined work with
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Overview

• Principles of agile methods
• ebe Research Overview
Why Agile Methods?

- CHAOS Report, Standish Group
  - 66% of projects failed or are challenged in 2002
  - Large projects are failing more often than small projects
  - Only 52% of features make it into product

http://www.standishgroup.com/sample_research/chaos_1994_1.php

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http://agilemanifesto.org/

Manifesto for Agile Software Development

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.

How Everything Fits Together

Scrum Flow (Sutherland, Schwaber and Beedle)
Agile Practices

• Knowledge sharing ("verbal documentation", co-location)
• Adaptive Project Management using Informal Feature Description (story cards)
• Fast feedback (on-site customer, continuous integration, short iterations, retrospectives)
• Emphasis on testing
• Emerging (simple) design & refactoring
• Pairing
• Collaborative, "whole team approach"
• Business contracts

Overview

• Principles of agile methods
• ebe Research Overview
  – Empirical studies on agile methods
  – Tools for agile teams
Empirical Research on Agile Methods

- Are the claims of agilists justified?

- Issues:
  - Significance versus insight
  - Qualitative versus quantitative
  - Industry-based
  - Perceptions vs reality

A Cross-Program Investigation of Students’ Perceptions of Agile Methods (Melnik/Maurer)

- Online questionnaire
  - voluntarily and anonymously
- Total numbers of respondents: **240**
  - out of 693 invited, 35% response ratio
- Over **3 years**
  - 6 academic semesters
  - 7 courses

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<th>Academic program</th>
<th>Semester(s)</th>
<th># of invitations sent out</th>
<th># of respondents</th>
<th>Response rate</th>
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<td>493</td>
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Using XP Improves Productivity of Small Teams

“I believe that XP helps get more work done in less time and is very effective for small groups as it allows for the group members not to get stuck for extended periods of time.”

Comparative Analysis of Job Satisfaction (Melnik/Maurer)

- Web-based survey (459 complete, 286 partial responses)
- Some questions verbatim identical with Computerworld survey (936 responses)
- Overall job satisfaction by groups
Longitudinal Agile Study (Mann/Maurer)

- Issues: Not much detailed data on agile methods from industry
- Approach inspired by ethnographical methods and action research
  - Embed researcher for two years in work environment
  - Change environment:
    - Pair programming
    - Continuous integration & test-driven development
    - Scrum project management
  - Observe and collect data

Scrum Results

- Overall results:
  - Reduced overtime
  - Increased customer satisfaction

![Graph showing average percent overtime worked by team over time with key events such as introduction of Scrum, new windows app release, and website release.]
In-container Portlet Testing (Bajwa/Xiong/Maurer)

Portlets Source: (IBM Portal [2])

Market Report

Quoted at 12:44 pm EST on 15 Jan, Refresh
Symbol: Current $-
IBM 1/28.70  0.65

Market details

Portlets
The Portlet API layer is the only way Portlets and container communicate.

WIT- Design Overview
Requirements and Agile Planning

• User stories
  – On index cards
  – Short descriptions of a feature
  – In customer language, no techno babble
  – Provide value to customer
  – Independent of each other
  – Testable
  – Small → decompose large stories
  – Estimated by developers
• Collect story cards and prioritize them

Digital Tables for Agile Planning (Liu/Maurer)
Alan: A robotic colleague for agile teams

- Support continuous integration
- Create and distribute summaries of Scrum meetings
FitClipse

- Acceptance test driven development tool
- Testing of distributed J2EE applications
- Scenario-driven testing of business logic layer as well as UI layer
- Acceptance regression testing

Discussion

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