Agile Methods and Interaction Design — Friend or Foe?

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What is software development?

Understand

Evaluate

Construct

Agile Methods and Interaction Design — Friend or Foe?
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Overview

- A brief summary of agile methods
- Comparing agile methods and interaction design
- Interaction design in agile teams
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.

Agile Core Strategies

- Iterative and incremental development
- Agile quality assurance
- Collaborative, "whole team approach"
Iterative and incremental development

- Application features
- UI layer
- Business layer
- Data access
- Hardware
Story Test Driven Development – Agile Approach to Quality

Adapted from Rick Mugridge. Advanced FIT Tutorial
Testing – The State of the Practice in Agile Teams

Adapted from Brian Marick's/Cem Kaner's Model, www.testing.com

- STDD/ATDD: Ward Cunningham, Rick Mugridge, Joshua Kerievsky
- TDD: Kent Beck, Erich Gamma, Ron Jeffries
- Exploratory Testing: James Bach, Cem Kaner, Brian Marick
- Para-functional Testing: Garry McGraw, Jacob Nielsen, …

Agile Methods and Interaction Design — Friend or Foe?
Whole team

- “Individuals and interactions”
- Customer representatives & developers & testers
- Planning meetings
- Retrospectives
Agile Development

Customer Communication
- Project planning meetings, on-site customer reps ...

Constant Feedback
- Demos, pairing with customer, iteration reviews

Design & Implement
- TDD, develop feature code, vertical slices
Common myths about agile methods

- Agile = unconstrained hacking
- Agile = rapid prototyping
- Agile → no documentation
- Agile → only in small teams
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Crosscutting concerns in agile teams

<table>
<thead>
<tr>
<th>Feature 1</th>
<th>Feature 45a</th>
<th>Feature 45b</th>
<th>Feature 564</th>
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Agile Usability

Agile methods are “good” at producing useful software
- Close customer collaboration
- Constant feedback

Are they also able to create usable software?
- Big picture vs iterative development
- Evaluate usability

Ux approaches
- Usability engineering
- Interaction design
- …
Ux Approaches

Define problem:
- User goals
- Tasks

Study users
- Ethnographic methods, contextual inquiry, observations at workplace, think aloud protocols, ...

Design solution:
- How should system behave and look

Evaluate and improve design
- Heuristic evaluation, usability studies, Wizard of Oz, discount usability, ...

Validate result:
- Usability engineering, studies

UI & information design
- Prototyping, interaction designer

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Agreements between Agile and Usability

- Focus on human aspects
  - “Individuals and interactions over processes and tools“
  - User-centered design, usability
- Iterative development
  - But: prototypes vs “real” systems
- Date of birth
  - Nielsen: Usability Engineering, 1994
  - DSDM Version 1: early 1995
  - XP - 1999
Differences

- Adoption speed
  - Agile quickly moving into the mainstream

- Breadth
  - Single non-functional requirement vs. holistic view of SE

- Attitudes towards stakeholders
  - "whole team" vs. "we’re the only ones that count"

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Cooper: It's my experience that neither users nor customers can articulate what it is they want, nor can they evaluate it when they see it.

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Usability Quadrant

Who decides to use the system?

- User opt-in
- Usage mandated

Why is system developed?

- Internal use: reduce costs
- Commercial sale: generates revenue

Based on Jeff Patton’s work

SurfNet

Agile Methods and Interaction Design — Friend or Foe?
Dream team or odd couple

- Interviewed UCD specialists working in agile environments

- Core recommendations
  - Interaction designers become part of the customer team
  - What interaction designers do in agile teams
    - Look ahead (beyond current iteration)
    - Advise team on UI issues in current iteration
    - Usability testing before release

- Issues
  - Short iterations – how to do the usability thing when an iteration runs only 2 weeks
  - How to sell interaction design to agile team – technical expertise helps
  - Time sharing more difficult
  - Help with acceptance tests
  - Teach usability
  - Haunted by early decisions
David Fox: Integrating Agile Methods and Interaction Design

- Grounded theory approach
- 16 participants from Europe, the US and Canada
- All with varied backgrounds
- Semi-structured interviews recorded and transcribed verbatim
- Open coding – axial coding – selective coding
Agile Usability General Model

Initial Stage

Iterative Stage

Development

<table>
<thead>
<tr>
<th>Iteration 0</th>
<th>Iteration 1</th>
<th>Iteration 2</th>
<th>Iteration 3</th>
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<tbody>
<tr>
<td>UCD</td>
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<td>Verification</td>
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Low fi prototypes describing product vision

- Horizontal prototype $\cap$ Vertical prototype
- Level of functionality & number of features are reduced

- Prototyping tools
  - Sketches
  - Storyboards
  - Pictive
  - Wizard of Oz

Story Test Driven Development – Agile Approach to Quality

Adapted from Rick Mugridge. Advanced FIT Tutorial
Patrick Wilson, Ali Khayat & Ted Hellmann: Towards TDD of UIs
Agile methods & interaction design

- Interaction design
  - Represents users within development team
  - Users key
  - Specialized role
  - Upfront UI design
  - Iterate (interface) design
  - Usability comes from “UI designers”
  - Evaluate prototypes, don’t build systems until design is stable
  - Usability testing, collect metrics
  - Slow adoption

- Agile methods
  - Include customer representatives
  - All stakeholder, including developers, collaborate
  - Prefer generalists
  - Discourages extensive upfront work
  - Iterate “real” system
  - Any quality is team effort
  - Put system in production ASAP
  - Demonstrate working code to obtain an accept or fix verdict
  - Fast adoption

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Thanks to:
David Fox
Ted Hellmann
Ali Khayat
Patrick Wilson