XP in the Real World

Sun Microsystems

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XP Values

• Communication
• Simplicity
• Feedback
• Courage
XP Practices

- The Planning Game
- Short Releases
- Metaphor
- Simple Design
- Testing
- Refactoring

- Pair Programming
- Collective Ownership
- Continuous Integration
- 40-Hour Week
- On-Site Customer
- Coding Standards
Our Project

• StorageTek MVS Client (SMC) for Automated Tape Storage
• Replacement for client functions of existing automated tape product
• Code is 95% C, 5% MVS assembler
XP and the SMC Project

• Methodology formally embraced in November, 2000

• Team work area was the key to starting “real XP”

• Project at this point was a mostly untested prototype with limited functionality
XP and SMC Project
Success Factors
Team Work Area

- Management support for change
- Key to communication
- Key to pair programming
- Repository for team materials
- Lots of cork and white boards
“The Planning Game”

- Fixed 3 week iterations
- Preprinted story and task cards
- Meeting with “customers” to prioritize stories
- Our estimating unit -- the PHU (programmer headache unit)
- “Yesterday’s weather”
Become compatible with NCS 4.1
Convert all control monitor to be 4.1 compatible.

AIr
IEE
MVT
LUT
L2RB (done on AIr)
Change CSUBS to look for 4.1
Message to display Lib subsystem rejected because of incompatible release level.

Sign: [Signature]

Done
Simple Design

• “The simplest thing that could possibly work”
• A way of evaluating different approaches
• Incorporates required functionality
• Has no (or minimal) duplicated logic
• Smallest amount of code
• “You ain’t gonna need it”
Refactoring

- Code got smaller as functionality was added, due to refactoring
- One component reduced from 6800 to 1500 lines of source code
- Refactor instead of duplicating code
- Code easier to understand and maintain
Coding Standards

- Project started with lots and evolved more
- Common “look and feel” to all code
- Detailed standards reduce pair programming conflicts
- Remember to include a story periodically to review and update standards
40 Hour Week

• Focus on stories as determined in the iteration plan
• When possible, defer enhancements. Write a new story rather than putting more in the original story than was intended
• Reduces burn-out and increases quality of life (and code)
• Reduces mistakes and wasted time
Continuous Integration

• All code is integrated as often as possible, at least once per week
• If necessary break stories into smaller pieces so that a functioning piece of code can be checked in
• Source code manager is Telelogic CM/Synergy (Continuus)
Testing

• Test suite run whenever code is integrated
• Due to nature of application and lack of tools, our testing is functional testing, not unit testing (as XP recommends)
Collective Ownership

• Entire team owns all the code. Anyone can change anything.
• Requires frequent merging of parallel development
• Group dynamics *BEFORE* XP were critical to success
Pair Programming

• It’s not for everybody
• It’s not easy
• Not everyone can work with everyone
• Common editor
• It *IS* a significant productivity aid
• It *DOES* improve quality dramatically
Limitation Factors in the SMC Project

- Lack of a “real customer” (We used Test and Support)
- Lack of a unit test tool (But apparently there are some we didn’t find)
- Lack of formal iterative testing in step with development
Summary

- Productivity (measured by delivered functionality) exceeds previous experience
- Code quality is good -- and gets better, not worse, over time
- Constant feeling of progress and accomplishment as stories are completed
References
XP Web Sites

1. [http://groups.yahoo.com/group/extremeprogramming/](http://groups.yahoo.com/group/extremeprogramming/) - This is the main discussion group for XP. Very high volume.

2. [http://www.objectmentor.com](http://www.objectmentor.com) - Object Mentor is Robert C. Martin’s company. They specialize in OO and XP training and consulting. Links to all of the web sites listed here are available at this site.

3. [http://www.junit.org](http://www.junit.org)

4. [http://www.pairprogramming.com](http://www.pairprogramming.com)

5. [http://www.xprogramming.com](http://www.xprogramming.com) - This is Ron Jeffries' site.

6. [http://www.extremeprogramming.org](http://www.extremeprogramming.org) - This is Don Wells' site.

7. [http://c2.com/cgi/wiki?ExtremeProgrammingRoadmap](http://c2.com/cgi/wiki?ExtremeProgrammingRoadmap) - This is Ward Cunningham's famous wiki site for XP.

8. [http://www.martinfowler.com](http://www.martinfowler.com) - This is Martin Fowler's site. He wrote the book on refactoring.
Usenet News Groups

1. comp.object

2. comp.software.extreme-programming
Books

1. Extreme Programming in Practice
   By James Newkirk and Robert C. Martin (2001)

2. Extreme Programming Examined
   By Giancarlo Succi and Michele Marchesi (2001)

3. Extreme Programming Installed

4. Planning Extreme Programming
   By Martin Fowler and Kent Beck (2000)

5. Extreme Programming Explained: Embrace Change
   By Kent Beck (2000)

6. Refactoring: Improving the Design of Existing Code
   By Martin Fowler, Kent Beck, John Brant, William Opdyke, Don Roberts (1999)