

Extreme Programming

in the Wild

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Introduction

- Originated with Kent Beck in 1996 on a project at Chrysler
- Extreme Programming (XP) is a deliberate and disciplined approach to software development based on the values of Communication, Simplicity, Feedback and Courage
- XP is playing to win rather than playing not to lose
- Refer to XProgramming.com for more details

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Background

- Project for a federal government department that used waterfall almost exclusively (exception is large project that started to use RUP but abandoned it)
- Started in early 2003
- Team has 18 members
- Started with a rich GUI client; later incorporated web interfaces
- Currently covers 3 lines of business with current development on a 4th, and a 5th to be added later this year
- Have been releasing to production every 3-4 months since the initial release, which took 8 months.

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Issues

- The adoption of the XP practices by the team members
- Dealing with the Customer
- The implementation of rigorous testing
- Dealing with groups external to the team
- Dealing with groups within the team
- The difficulties with staying “on the XP wagon” over time

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Adoption of the XP Practices

- How Pair Programming was accepted
 - Resistance was mainly from members of the team who weren't as strong technically as others
 - Over time, some have grown accustomed to it
- Moving from Use Cases to Stories
 - Needed a leap of faith that the detail in a Use Case wasn't required
 - Now considered routine
 - Still have difficulty with the "granularity" of Stories
 - Have outgrown a spreadsheet for tracking; now evaluating a tool
 - Index cards were never considered

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Adoption of the XP Practices cont'd

- Performing frequent builds, and moving to continuous integration
 - Originally a manual process, now automated
 - Frequent builds exposed problems sooner
 - Kept the entire team in sync
- The effect of collective code ownership
 - No islands of knowledge, though some people are considered experts on some areas

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Adoption of the XP Practices cont'd

- Implementing the planning process (Release Planning, Iteration Planning, Stand-up Meetings)
 - Got the entire team involved
 - Everyone knows what's going on
- Selecting an Iteration length, and the effects of changing it
 - Initially 2 weeks; changed to 1 week while quickly implementing a new business line
 - Found that shorter iteration was better when there were minimal infrastructure (database, framework) changes

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Dealing with the Customer

- Handling inevitable changes
- What happens when the Customer, i.e. the person, changes?
- Have had 3 customers
 - M – inexperienced in the business, but wanting to learn and willing to ask questions and follow up quickly
 - J – very experienced, but narrow focus; has a tendency to flip-flop on decisions, and sometimes will defer decisions to higher management creating delays
 - L – very experienced; quite decisive, but knows when to ask higher management; best customer of the three

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Dealing with the Customer cont'd

- Dealing with multiple Customers
 - Sometimes, the Customer has been overridden by higher manager's "vision"
 - The higher manager isn't involved day-to-day, which creates bottlenecks when decisions are required
 - Requires active involvement by the team's Manager to maintain focus

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Rigorous Testing

- Unit testing with JUnit
 - Business objects have very good test coverage
 - Using a homegrown servlet-based test runner for EJB layer, with excellent code coverage
 - Unit testing the GUI
 - Very few tests currently
 - GUI interaction code contains the majority of the bugs found
 - Now using Mock Objects to improve test isolation
- Acceptance Testing
 - Currently only manual testing is performed, which creates a bottleneck

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Dealing with External Groups

- Agile database development
 - Getting over the need to design the entire schema up front
 - All power in the hands of the DBA's not a good thing
- Dealing with departmental standards, including the use of Open Source solutions
 - Often constrained by tools that can be installed on the desktop
 - Still a mentality that free != good

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Dealing with External Groups cont'd

- Management's perspective
 - Customer's management is very happy
 - Immediate development team management is quite happy
 - Other teams either don't know about our process or aren't interested
- Agile application deployment
 - Web applications are on a single server, resulting in simple deployment
 - Rich client has an automated installation process
 - Must pass installation certification, though not terribly rigorous

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Dealing with the Team

- Selling iterative, incremental development
 - Not very difficult; many had worked informally that way before
- Selling the concept of fewer design artifacts
 - Resistance was mainly from members of the team who weren't as strong technically as others
- Dealing with differing skill levels on the team
 - Ongoing issue; some people have improved, some haven't
 - Difficult to keep everyone happy when some can't keep up with the pace

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Staying “on the XP wagon”

- Maintaining focus on the end product
 - Sometimes get lost in the details
 - Technical/infrastructure changes seen as not delivering value to the Customer
- The testing “safety net”
 - People tend to get lazy about testing over time, though this has improved
- The importance of proper planning
 - “Planning is essential, but the plan is useless”
 - Making that plan and sticking to it... until it changes
 - What did we do when it did change?
 - Dealing with staff turnover and absence

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Victims of Our Own Success

- Complacency with success
- “What have you done for me lately?”
- Customer has focused resources on “problem child” project