eXperiencing
eXtreme Programming

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Overview

- Background
- Why XP?
- Values/Practices
- Experiencing XP
- Questions

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Background

- AT&T/Bell Labs/Lucent for 19 years
- Our Culture
  - Process focused (waterfall), ISO certified
  - Long term, up front planning and design
  - Control/Limit Change
  - Lot of intelligent, hard working people
- Received Quality/Process Improvement Awards, ISO Auditor

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Background Ctnd

- Problems
  - Communication through documents, meetings, escalations
  - Process did not describe what we really did
  - Could not respond to changing customer requests
  - Creating more process but not really improving
- Directive to "Revolutionize" organization
  - Read the "White" book in October 2000, began an XP project the next week
- Started our own company based on XP Values

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Why XP?

- Closer to my envisioned development model
- Realized the "revolution" was cultural
- Easy to advocate change
  – Complete development model
  – People could relate and see value in some area
  – Passionate (good or bade) subject matter
- It was the Values, not really the Practices
  – Practices vary a lot across Agile methodologies but the values remain the same

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Values Affect Change

- Communication
- Simplicity
- Feedback
- Courage

Agile Manifesto values:

-**Individuals and interactions** over processes and tools

-**Working software** over comprehensive documentation

-**Customer collaboration** over contract negotiation

-**Responding to change** over following a plan

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Cultural Change

- Make essential plans without the ceremony
- Embrace change
  – Reduce the risk of changes
- Reduce inertia
  – "…today's problem", "…simplest thing"
- Real teamwork
  – Effective communication
  – Break ownership boundaries and positions

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Experiencing XP

- XP Work Environment
- Planning
- Design
- Test
- Refactoring
- Pair Programming
- Documentation
- An XP Day
- Miscellaneous/Questions

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XP Work Environment

- One "loud" room for a group of people
- Everything happens in here
  - Meetings, development, arguments, your personal life
- Everyone is in here
- Story and task cards visible (physical entities)
- Communication is non-stop and immediate
- **Experience**: Must have.

Planning

- Short term planning on immediate needs does improve focus, commitment and time-to-market
- XP Customer Role is a problem
  - Skill set, work load, buy-in, location or courage?
  - Interesting and creative ways to fill role
- **Experience**: XP allows evolution of business plan but does not eliminate the need

Design

- Where's the design? – Everywhere!
  - Original culture
    - Design is done up front before development
    - Design is communicated through documents and reviews
    - Design documentation is updated when it changes – right!
  - XP
    - Design is everywhere (metaphor, code, tests)
    - Design is done throughout development
    - Design is communicated in the project room (meetings, discussions, conversation)
    - Support document is generated when needed
  - Expectations vs Needs
  - Design is ongoing, not a discrete activity

Design

- Keep "Simple" in mind
- Use Metaphor to guide design decisions
- Pair/Team design is superior
- Design-by-Test is very effective
  - Helps keep it simple
  - Creates feedback and environment for refactoring
  - Stopping place (avoid "gold-plating")
- **Experience**: Great! True OO design. True reusable code. Easy to change.

Testing

- Team is responsible for quality (avoid development/test separation)
- Testing happens earlier
  - Acceptance testing simultaneously with development
  - Key for understanding what to develop
- Automation is critical but occasionally not practical
- Testing pre-existing code can be difficult
- **Experience**: Higher quality, clearer direction, faster feedback.

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Refactoring

- **What were we thinking before we had automated tests?**
- Basis/proof/ability to quickly and effectively change
- When to refactor?
  - Somewhere between "always" to "only if there is a problem"
- Incremental test and change concepts help with learning and debugging
- **Experience**: Critical skill, needs to evolve into a passion.

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Pair Programming

- Pair programming is culture shock!
- One of the most valuable parts of XP and the first practice abandoned
  - Head off ownership issues quickly
  - Paired efforts are more easily understood and maintainable
  - Distribute knowledge (eliminate "truck" factor)
- Use pairing on lots of things – not just code
- **Experience**: We are faster, with higher quality. Actually a lot of fun!

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Documentation

- Document what you need when you need it
  - Old process ~10 documents, XP ~3, used ~2
- Value of documentation
  - Design documentation is always out of date
  - What would someone need to know to take over this code?
  - Collective ownership, pair programming, tests lead to self documenting code
- Does anyone really read anything anymore?

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Miscellaneous

- Simpler Project Management with rich, timely information
- Takes time to learn how to create good stories and good task breakdown
  - Focus on useful function not infrastructure
  - Tasks that can be completed in hours (end)
- Continuous integration eliminates a lot of headaches
- Sometimes change is expensive

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An XP Day

- Planning
  - Short, stand up meeting to start
  - Any issues, what do we need to do, who needs help
- Development
  - Tasks taken and programming pairs formed
  - Write tests first, code until the tests pass
  - Refactor if necessary
  - Deliver after ALL tests pass
  - Get next task and new pair if needed
- Resolve issues in real time
  - Contact customer or taunt the last pair that designed it

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Questions on XP/Practices/Others

- The Planning Game
- Small Releases
- Metaphor
- Simple design
- Testing
- Refactoring
- Pair Programming

- Collective Ownership
- Continuous Integration
- 40 Hour Week
- On-Site Customer
- Coding Standards

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Almost the Conclusion

- Actually the most disciplined "process" I have ever followed (could be ISO Certified)
- **The most fun we have ever had developing!**

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Courage

- Looked at and dealt with people issues related to XP (personality types for pairing, dynamics of project room, etc.)
- Interpersonal relationships are important
- Need courage to overcome fear, "bad" history, general personality dynamics
- Some will leave (especially early), some will grow and some grow at a later time

"What part is mine?"

"I'm more productive as an individual"

"I feel naked!"

"Never been so productive and had so much fun!"

"Learning new things everyday"

"How will I contribute, compare, be rated?"

"Team result is better than what I could have done alone"

"Real teamwork and values"

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