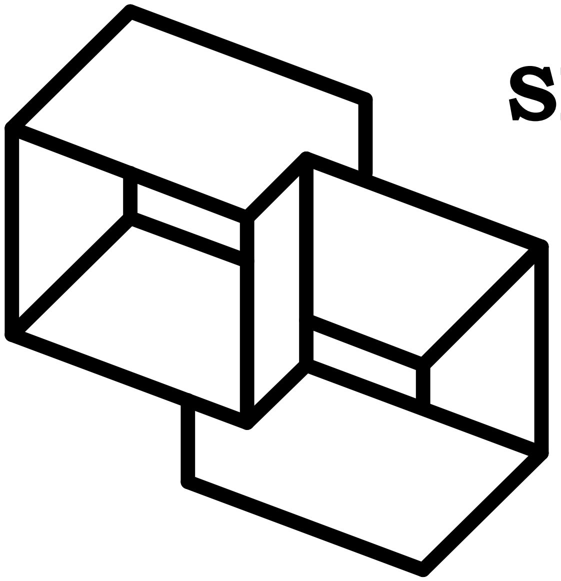
Questioning Extreme Programming



Should we optimize our software development process?

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Agile approaches to software development are getting a lot of publicity, is this good?

This talk asks questions about Agile methods and Extreme Programming

- What is so special about the Agile approaches?
- What other agile approaches are there?
- Should we be optimizing our processes for particular outcomes?
- If so, who gets to choose the desirable outcomes?
- What outcomes are valued by your organization?
- What should the future of software development look like?

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.

The methodologies that contributed to the manifesto are quite diverse

Adaptive Software Development

Crystal methods

Dynamic Systems Development Method

Extreme Programming

Feature Driven Development

Pragmatic Programming

Scrum

Adaptive Software Development was created by Jim Highsmith

ASD is based on the ideas of Complexity and Emergence

- Managing the *workstate* rather than the workflow is the key difference
- Collaboration and self-organization enable *emergence*
- Describes a new lifecycle Speculate, Collaborate, Learn

ASD is intended for extreme projects that push the limits of what is possible

The Crystal methods were developed by Alistair Cockburn

The Crystal methods apply the idea that all processes are situational

They are a set of human scale, tolerant processes tuned for different projects

- Trust people to be good citizens
- Use incremental development so the team gets practice at delivering, and,
- Are barely sufficient to avoid overloading people with process.

Dynamic Systems Development Method is modernized Rapid Application Development

DSDM is about controlling and managing the rapid delivery of applications

DSDM uses empowered teams to deliver quality applications through the use of timeboxed development

- Do enough and no more,
- Use active user involvement to ensure fitness for business purpose, and
- Iterative development to converge on an accurate solution.

Extreme Programming: the revenge of the programmers :-)

A set of synergistic practices that maximize the amount of work not done

A highly incremental process that allows an on-site customer to steer the project

- Based on 5 core values Communication, Simplicity, Feedback, Courage and Respect
- Uses pair programming for all production code
- Does the simplest thing that could possibly work
- Preaches the idea of Test Driven Development

Feature Driven Development was designed by Peter Coad

FDD aims to deliver frequent, tangible, working results

FDD is unique among the Agile methods in promoting the use of CASE tools

- Uses Feature Teams lead by a Chief Programmer
- Has a heavy focus on modeling and archetypes
- Supported by CASE tool that is also a Java IDE
- Design By Feature, Build By Feature using a two week cycle

Pragmatic Programming is based on a book written by Andy Hunt and Dave Thomas

Pragmatic Programming addresses the facing issues teams of 2 or 3 developers

More concerned with individual mastery of the craft of software development

- Individual craftsmanship as a foundation for overlal team success
- Focuses on effective, appropriate use of tools
- Encourages a seamless approach - specification and implementation as different aspects of the same process

Scrum was created by Ken Schwaber, Jeff Sutherland and Mike Beedle

Scrum is an empirical process for managing software product development

It reintroduces flexibility, adaptability and productivity into systems development

- Work can and should be an ennobling experience
- Projects are divided into sprints to allow developers to focus on delivery
- Empirical management using frequent, first hand observations and daily scrum meetings

What is so different about these Agile approaches?

All put people and the interaction between people as the main focus of attention

All embrace the idea that dealing with partial knowledge is the key to success

Their response to schedule pressure is to prioriotize and focus on early delivery

They require extensive involvement by the project sponsors and users

The Agile approaches are changing the way that software development is done

The Agile approaches are changing the conversation about software development

Agile shifted our attention to small teams incrementally delivering quality software

Whether this is a good thing or not is still open to question

In optimizing our process towards the Agile approach, what are we giving up?

What does it mean to optimize a process?

Optimization means altering the process to gain a different (more valuable?) outcome

- Optimization is directed ***process improvement***

Who gets to choose the direction?

- How do we decide which aspects of a process are the valuable ones?
- How do we decide what we are willing to give up in order to get the valued outcome?

Does process specialization have any risks?

Before looking any deeper, first let us look at how we optimize a process

Optimization implies changing something

- Getting the team to work in a different way
- Changing the deliverables and standards
- Changing the interactions between team roles
- Changing the vocabulary and conversations

The easiest way to change behavior is to change the vocabulary and conversations

Reworking code to conform to standards is a pain, but ***Refactoring*** is fun

XP has successfully changed the conversation

What does Extreme Programming optimize? Hint: Look at the project outcomes

Developer enjoyment ☺

Entire team agrees this is the best project they've ever been on - Ron Jeffries speaking about C3

Predictable, sustained and sustainable pace

The project can go at any pace it wants to. The point is steering, not going full speed

Maximizing the team's tacit knowledge

The best way to keep the knowledge of a system alive and well is to maintain the continuity of the development team. - Robert Martin

What else might you want to optimize for?

The business as usual answer is *everything* but it doesn't work out that way

When everything is important, the item that gets paid attention to seems to be pseudo-random

Faster, Better, Cheaper is not realistic

On Time, On Budget, On Mars - pick two

As Jim Highsmith suggests, choose an appropriate *Mission Profile*

Then optimize to excel at the chosen outcome

Different organizations could want to optimize many different things

- **Productivity**
- **Minimum budget**
- **Rapid delivery**
- **Efficiency/Burn rate**
- **On-time delivery**
- **Beating the estimates**
- **Success with newbies**
- **Following the plan**
- **Working with incomplete knowledge**
- **Handling emergent requirements**
- **Leveraging experts**
- **Exploiting serendipity**
- **Community involvement**
- **Successful diversity**
- **Supporting individuality**

Optimization affects Agile development if taken to extremes

Agility means supporting the Manifesto for Agile Software Development

Valuing individuals and interactions is key

Extreme Programming sometimes devalues the experience of individuals

You can use any coding standard you like, just not on this project - the team outweighs individuals

Although they are ***just rules***, XP is intolerant of variations that could reduce predictability

Does your organization value what Extreme Programming offers?

Product development organizations usually value a predictable, sustainable pace

- Many recognize that it is hard to write everything down, so they value the team's tacit knowledge
- Developer enjoyment is rarely a priority, but two out of three is not that bad

Contract and in-house development are dominated by the project plan

- XP doesn't offer much to the project manager

By Questioning Extreme Programming we can shape the future of software development

Something else will follow XP and further redefine software development

Is your voice going to be heard?

XP was not a corporate initiative, it was just a couple of people with a vision

What is your vision for software development?

What conversations are you going to start?

Do you need to create any new distinctions?

Our challenge - The Feyerabend Project

The Feyerabend Project
An Invitation to Redefine Computing

Fifty years into the First Computing Era some of us in the computing arena have come to realize we've made a false start that can't be fixed, and for us to finally be able to produce lasting, correct, beautiful, usable, scalable, enjoyable software that stands the tests of time and moral human endeavor, we need to start over. Perhaps we'll be able to salvage some of what we've learned from the First Era, but I expect almost everything except the most mathematical fundamentals to be brushed aside.

Richard P. Gabriel http://www.dreamsongs.com/