Co-located agile development: community and culture

Helen Sharp and Hugh Robinson

Centre for Empirical Studies of Software Development

The Open University, Walton Hall

Milton Keynes MK7 6AA, UK

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The Open University

Overview

- **Background: XP and our research approach**

- **The teams we observed**

- **XP's rhythms of progress**

- **Mature XP team characteristics**

- **Significant factors for team members**

- **Summary**

# eXtreme Programming (XP)

- **Focus on working code as being <u>the</u> important output**

- **Sustainable culture of software development**

- **Twelve practices, e.g. pair programming, 40-hour week, small releases, simple design**

- **Explicitly-stated value system: communication, feedback, simplicity, courage, respect**

- **One of several 'agile' methods, www.agilealliance.org**

Some views of XP
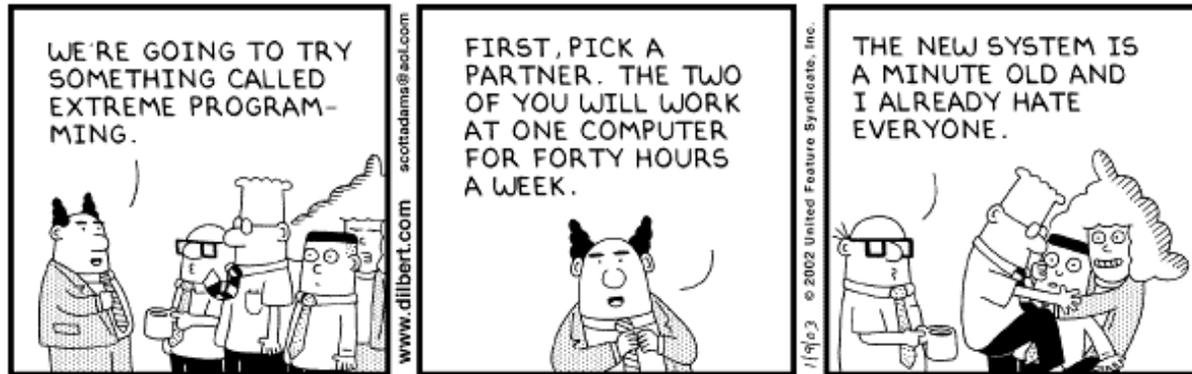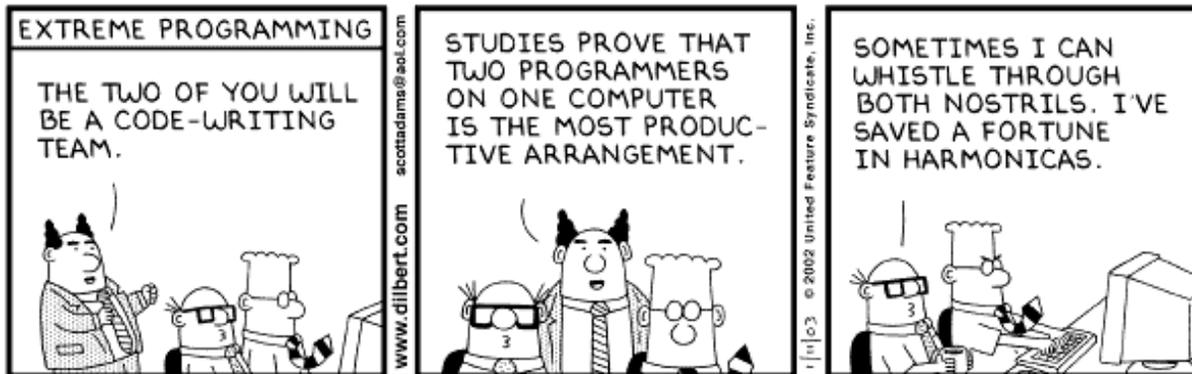
Research Approach

- **Observational studies**

- **Focus on social and cultural aspects**

- **Focus on practice and practitioners**

- **Interviews, (Participant) Observation, Documents**

- **Observers are software developers**

- **Approach holistic and themes emergent**

- **Treating the familiar as strange**

Teams we studied

- **Team A: intelligent web adverts, team size 14, Java**

- **Team B: multi-author environments, team size 23, C++**

- **Team C: operational risk in a bank, team size 12+, Java**

- **Team D: online insurance, team size 9 +, COBOL & Smalltalk**

- **Team E: database migration, team size 11, Java**

Reassuring rhythms

- **Daily rhythm**
  - Start of day → stand-up → pairing conversations → end of day

- **Rhythm of the iteration**
  - Pre-planning → planning game → daily rhythm → retrospective

- **(Release rhythm**
  - Release planning game → iteration rhythm → release retrospective)

Planning Game

- **Who is involved?**

  – **Developers (estimate stories)**

  – **Customers (prioritise stories)**

  – **Managers (hold development overview)**

- **Purpose**

  – **Choose stories for the next phase**

Stand-ups

- **Who takes part?**

  - **Developers**

  - **Customer(s)**

  - **Manager(s)**

- **Purpose**

  - **Reporting on yesterday's work**

  - **Identifying issues/problems**

  - **Deciding what stories to do next**

  - **Choosing pairs**

Stand-ups

PHOTOGRAPH: ABERDEEN UNIVERSITY LIBRARY

Democracy in action . . . the men of the St Kilda parliament, deciding what to do that day – if anything

Pairing

- **Pairing: design, program, refactor, test**

- **Social aspects**
  - **a three-way conversation**
  - **intense & stressful**
  - **variety of styles**
  - **situated in wider context**

Customer Collaboration

- **Who is the customer?**

- **Variation affects other practices**
    - **Planning game**
    - **Collective ownership (through stand ups)**
    - **Pairing (interruptions)**

Retrospective

- **Reflection for all the team**
  - What worked,
  - What didn't work?
  - How can we improve?
- **At end of an iteration – an hour**
- **At end of a release – a day**

Issues of sustainability

- Tensions between team members' cultures

- Confidence and trust

- 'Sameness' – boredom and promotion

- Loss of confidence with constant pairing

Characteristics of teams

- **Individuals and the team are respected**

- **Individuals and the team take responsibility – self-managing teams**

- **Individuals and the team actively encourage preservation of sustainable pace**

- **Individuals and the team have faith in their own abilities - trust**

Significant Factors

- **Quality of code**

- **Importance of taking breaks**

- **Communal (non-work) time**

- **Mutual support**

- **Physical layout (communication)**

- **Visible progress**

Visible progress

- **Regular releases (progress for individual and for team)**

- **Stand-ups (reporting to others)**

- **Small (or large) celebrations of achievement**

Summary

- **Observational studies of mature XP teams**

- **Many important aspects underpinning team**
  - **explicit value system**
  - **reassuring rhythms**
  - **strong team characteristics**
  - **shared understanding/purpose/goals**
  - **mutual support and trust**
  - **pride**

- **XP's way has problems too, not ideal**

Some relevant reading

- Gutwin, C., Penner, R. and Schneider, K. (2004) 'Group Awareness in Distributed Software Development', CSCW '04

- Braithwaite, K. and Joyce, T. (2005) 'XP Expanded: Distributed eXtreme Programming', Proceedings of XP2005, LNCS 3556, 180-188.

- Sharp, H. and Robinson, H. (2004) 'An ethnographic study of XP practices', *Empirical Software Engineering,* 9(4).

- Robinson, H., and Sharp, H. (2004) 'The characteristics of XP teams' in Proceedings of *XP2004* Germany, June, pp139-147.

- Robinson, H. and Sharp, H. (2003) ' XP culture: why the twelve practices both are and are not the most significant thing' in *Proceedings of Agile Development Conference*, IEEE Computer Society Press, pp12-21.

Thank you

Any questions/comments?

h.c.sharp@open.ac.uk