EASE findings and agenda
on the 5th anniversary of EASE

Prof. Per Runeson
– Director

Industrial excellence center
A: Ubiquitous Configuration
and Interaction
B: Parallel Embedded Systems
C: Efficient Software Methods (OSS, Agile)
D: Aligning Requirements and Verification
Information in Software Engineering…
- in Inner Source (Martin Höst)
- Gaps in Industry (Elizabeth Bjarnason)
- in Test Selection (Michael Unterkalmsteiner)
- for Impact Analysis (Markus Borg)
Information in Inner Source
(Martin Höst)

• Open Source often used in industry
• Successful projects

…would it be possible to transfer the way of working to inside a company?

Inner Source: basic idea

Open Source Software development practices within the confines of a corporate environment.

Also called:
• Corporate open source
• Progressive Open Source
Anticipated advantages / challenges

Advantages
• Improved reuse
• Improved quality
• Rapid developer redeployment
• Increased awareness
• Supports innovation

Challenges
• Coordination challenges
• Open communication may not be seen as an advantage
• Can be a large change

Information Gaps in Industry
(Elizabeth Bjarnason)
Gaps in industry…

Finding & fixing gaps with
Gap Finder

1) Measure distances & locate gaps
2) Consult theory & identify improvements
3) Discuss & agree with project team
Iterate from 1
Gaps in Software Development

Research topics
- RE distances
- Coordination and communication
- Integrated and agile requirements
- Reqs and testing alignment
- Process improvement methods
- Time-line based retrospectives
- Gap Finder method

Feel free to contact: elizabeth@cs.lth.se
Information in Test Selection
(Michael Unterkalmsteiner)

- Performance depends on data quality
- Opportunity to identify not well documented features / not well written test-cases
Information for Impact Analysis
(Markus Borg)

Challenge: Info Overload

- Connect reqs. and test in large projects
  - Developers cannot overview all information
  - Causes stress
  - Obstructs decision making
- Poor findability
  - Hard to navigate information landscape
Work Task: Impact Analysis

Safety-critical context

Issue Reports as Hub Artifact

- Mine issue database, reuse that knowledge
- Jumpstart new impact analyses

Reqs.

Tests

Issue DB
Link Mining Issue Database

- Resulting network
  - 27,958 software artifacts
  - 28,230 links

![Diagram showing the network with Req. link and Test link]

Application 1: Neighbourhood Search
Application 2: Key artifacts

Application 3: Recommend Impact

1. Identify similar issues
2. Identify neighbours
3. Rank candidates
EASE Lic Theses

Martinsen, Jan Kasper (2011). Evaluating Java Script Execution Behavior and Improving the Performance of Web Applications with Thread-Level Speculation. BTH


Agenda for future work

• Five more years…
• Ongoing revision of themes A and B
• Upcoming review by Vinnova
• Opening for new partners
13