



Communication Tools in Globally Distributed Software Development Projects

Research proposal

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Outline of the presentation

- ❑ Motivation
- ❑ Research questions
- ❑ Research methodology
- ❑ Preliminary results
- ❑ Next steps



Motivation

- ❑ Communication plays a significant role in software development
 - Communication is nearly always mediated by a communication tool
 - Benefits from global software development (GSD) can be lost due to communication challenges
- ❑ Current set of communication tools seems adequate
 - The use of communication tools can be improved
 - May result in enhancements in software development
 - Little is known how these tools are used



Research questions (1/3)

Which tools are used to communicate in GSD projects?



Research questions (2/3)

How are the communication tools used in GSD projects?



Research problem (3/3)

Why communication tool X is not used in
each and every GSD project?



Research methodology (1/2)

- ❑ Qualitative multiple case study
- ❑ Action research
- ❑ Several GSD projects
 - Projects that have succeeded in GSD as well as challenged ones
 - Typical projects within the companies
 - In-house development and subcontracting projects
 - Customer projects and product businesses
 - Development and maintenance
- ❑ Practitioners from different roles
 - Different points of view
 - Worked closely with the another site
 - Both on-site and off-site



Research methodology (2/2)

- ❑ Semi-structured interviews
- ❑ Observation on communication and tool usage
- ❑ Questionnaires



Preliminary results (1/4)

- ❑ 9 GSD projects from 3 software companies
 - Onsite: Finland
 - Offsite:
 - Europe: 7 projects
 - Asia: 2 projects
- ❑ 29 practitioners
- ❑ Top 3 communication tools in use:
 1. Email
 2. Conference calls
 3. Instant messaging system



Preliminary results (2/4)

- ❑ Email
 - Unanswered emails
 - Sender did not know if some action was taken
- ❑ Conference calls
 - Sound quality was suboptimal in some cases
 - Informal team building
- ❑ Instant messaging systems
 - Problem solving and technical discussion
 - Presence
 - Language barrier



Preliminary results (3/4)

- ❑ Intranets
 - Inflexible, bureaucratic publishing process
 - Discussion forum and wiki adoption planned in some projects
- ❑ Video conference
 - Tried in many projects, but dropped later
- ❑ Application sharing
 - Used for learning, user interface reviews and code reviews
- ❑ Infrastructure tools
 - Feature/issue tracking and version control used to augment formal reporting and communication



Preliminary results (4/4)

- ❑ Distance between sites
 - Time zone difference
 - Cultural distance
 - Geographical distance
 - “Travel distance”
- ❑ Common challenges
 - Technical and security-related issues
 - Many tools may be introduced, but end up with little or no use during the project
 - Communication tool set varies between projects in the same company



Next steps

- ❑ Finalization of first interview round
 - Analysis of interviews
 - Planning next interview round
- ❑ Based on results, selection of a few communication tools for further study
 - Adoption
 - Improvement



Thank you!

Any questions?

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