Petra Björndal, Karen Smiley, Prateeti Mohapatra, ABB Corporate Research / Industrial Software Systems Program
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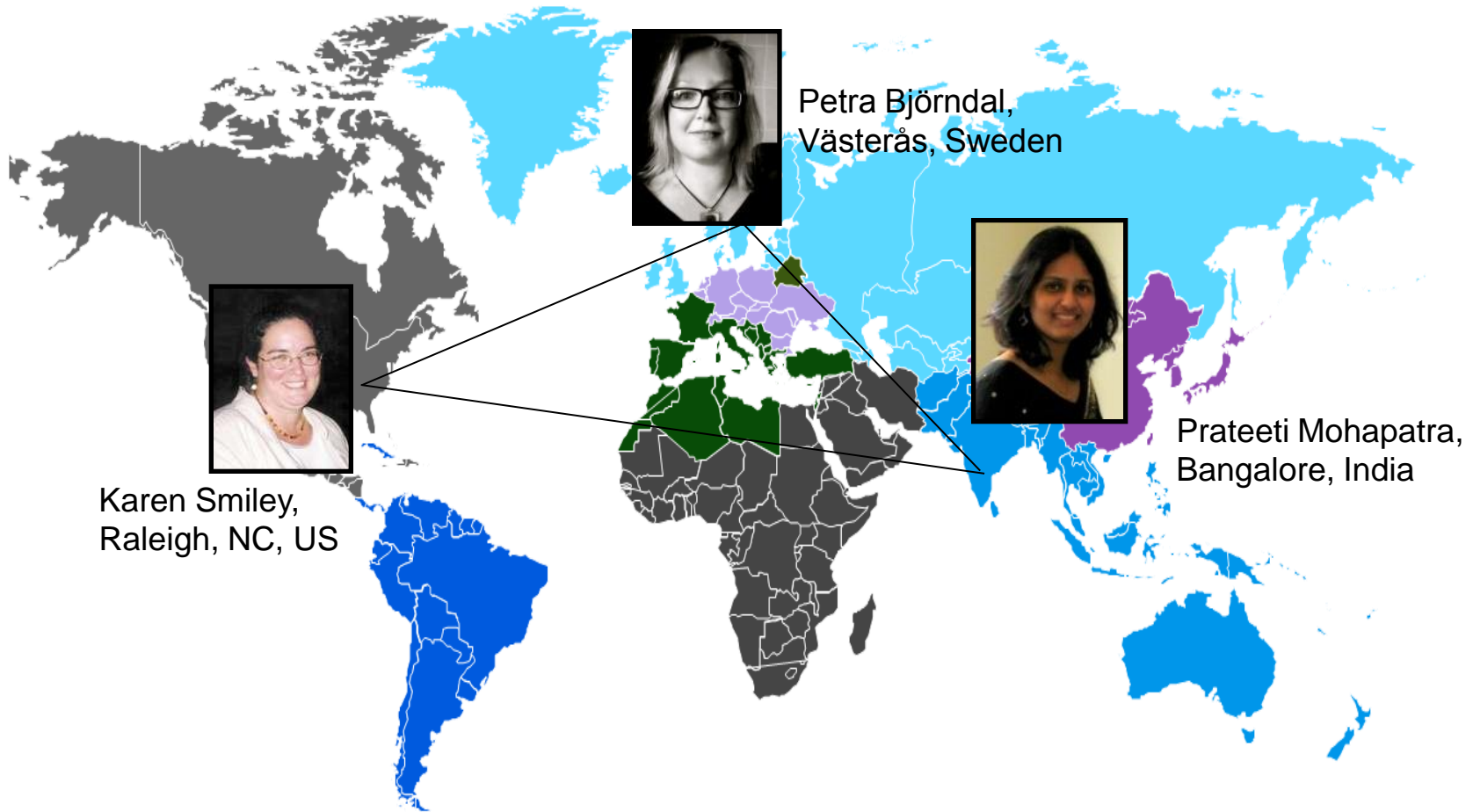
Global Software Project Management
A Case Study

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Outline

- Walking the Talk: Our Globally Distributed Team

- Background

    - Research Goal

    - Key Challenges of Global Software Development

    - Method

- Result

    - Projects Studied

    - Reported Challenges

    - Risk Handling/Mitigation Strategies

- Future Work

- Summary

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Global Software Project Management
Walking the Talk: Our Globally Distributed Team

Petra Björndal,
Västerås, Sweden

Prateeti Mohapatra,
Bangalore, India

Karen Smiley,
Raleigh, NC, US

Industrial Software Systems Program, ABB Corporate Research

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Global Software Project Management
Background in ABB

- The ABB group of companies (www.abb.com) is a world leader in power and automation technologies

- Operates in 100 countries, sells products all over the world

- Increasing number of products with software components

- Increasing number of globally distributed software projects:

  - Specialists

  - Acquisitions

  - Reduction in development cost

  - Reduction in time to market

  - Proximity to customers

- High-quality GSD performance is a key concern for ABB

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Global Software Project Management Research Goal

- Evaluate collaborative tools and paradigms for global software development (GSD) which can measurably improve speed and quality for specific lifecycle tasks and geographic/cultural combinations

- Mitigation of risks present in GSD projects requires extra insight, skill, and attention by the project manager

  - *How best to support the project manager in a GSD project?*

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Global Software Project Management
Key Challenges of Global Software Development

Distributed development:

- Communication

- Trust

- 'Coordination over distance'

Globally distributed development:

- Temporal separation (time zones)

- Culture

- Language

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J.Herbsleb, A Mockus, T.A. Finholt, R.E. Grinter Distance, dependencies, and Delay in a global collaboration. CSCW 2000
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S. Teasley, Li. Covi, M. Krishnan Rapid Software Development through Team Collocation. IEEE Transactions on Software Engineering 2002

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Global Software Project Management Method

- Surveyed state of the art of GSD, both in literature and ABB (experiences, tools, theories)

- Defined a set of metrics for GSD collaboration

- Developed data gathering instruments:
  - Structured Survey Questionnaire, to guide project interviews
  - Online Distributed Meeting Questionnaire, for assessing specific situations, e.g. GSD team meetings

- Conducted exploratory/formative studies:
  - 4 projects were followed, 26 interviews
  - Complemented with data from 3 more projects and 5 more interviews, with more specific focus around the project manager's tasks and responsibilities

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Global Software Project Management
Projects studied

- Have been working with six projects from five different parts of ABB

- Collaboration with one GSD project in another large global company, meeting challenges in GSD

- Project locations:

  - Involving people working from sites in: China, Finland, Germany, India, Norway, Sweden, and US

- Project Management approaches:

  - Conventional, Waterfall model

  - Three GSD projects were using agile project management methods (eg own adaptations of Scrum)

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Global Software Project Management
Reported challenges & some consequences – 1

Communication	
Misunderstandings	Rework or low quality deliverables
Hard to create a common view	Not working towards same goal
Cannot 'put a face to a voice'	Telephone conferences less efficient and less effective
Too little communication (infrequent)	Takes longer to discover misunderstandings
Coordination	
Dependencies between sites	One problem → more problems
Requirements not detailed enough	Misunderstandings/ double work
All sites do not follow same processes	Extra work

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Global Software Project Management
Reported challenges & some consequences – 2

Trust	
Competence and/or experience questioned	Double-check others' work
Culture	
Understanding management hierarchies/styles	Unclear who to talk to and involve in order to secure meaningful commitments for project work
Language	
Hard to understand what others say (and mean)	Less communication
Temporal barriers	
Few or no overlapping office hours	Hard to arrange meetings – questions go unanswered, assumptions are made

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Global Software Project Management
Risk handling / mitigation tactics – 1

Communication	
Misunderstandings	MoM
Hard to create a common view	Meet F2F during project startup; connect dedicated project rooms
Cannot 'put a face to a voice'	Meet and/or use video conferencing
Too little communication (infrequent)	Short meetings every day; more chat (instant messaging)
Coordination	
Dependencies between sites	Specify borders, reduce coupling, track dependencies
Requirements not detailed enough	Tighter collaboration with stakeholders (product owners)
All sites do not follow same processes	Agree on shared processes from the beginning

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Global Software Project Management
Risk handling / mitigation tactics – 2

Trust	
Competence and/or experience questioned	Communicate competence and experience; job-rotate
Culture	
Understanding management hierarchies/styles	Learn about each other, make use of differences
Language	
Hard to understand what others say	Use videoconference, use written slides, write MoM
Temporal barriers	
Few or no overlapping office hours	Dedicate certain hours for communication

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Global Software Project Management
Some proposed GSD project start-up tactics

- Get everyone acquainted

- Increase cultural awareness

- Train everyone on team tools

- Hold a Whole Team kickoff (video supported or F2F)

- Define rationale for work distribution

- Establish communication strategy

- Provide training on communication tools and processes

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Global Software Project Management
Some proposed GSD project execution tactics

- Video for day-to-day team communications

- Video for day-to-day communications with Product Owners

- Video for daily cross-site team meetings

- Monthly distributed sprint demos and retrospectives, with video

- Visual distributed collaboration tool (e.g. smartboard) for sprint planning

- Distributed 'planning poker' for estimation

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Future work

- Ongoing: next steps started to prove/validate the proposed tactics

  - Following projects over time

  - Periodic (before and after) measures using data gathering instruments and GSD metrics

  - Support to the project manager (guidelines and feedback)

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Global Software Project Management Summary

- Distributed development in a large international company

    - Recognize the problems reported

- There are possibilities to take actions

    - Increase awareness

    - More knowledge to project managers/team

    - Share knowledge

- Strategies to help GSD projects, valuable for many others too

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