Global Software Engineering: Industry and Research

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Outline and Goals

- Reflections on a Decade of Work on Awareness and Trust in Global Software Engineering

- Introducing the 11th IEEE International Conference on Global Software Engineering (ICGSE 2016), August 2-5, 2016 – in this room!

Reflections

Challenge: Working in a Globally Distributed World

- Isolation prevents knowing what others are doing

- Lack of awareness also prevents knowing why they are doing or not doing something

- Distance prevents familiarity – both professional and personal
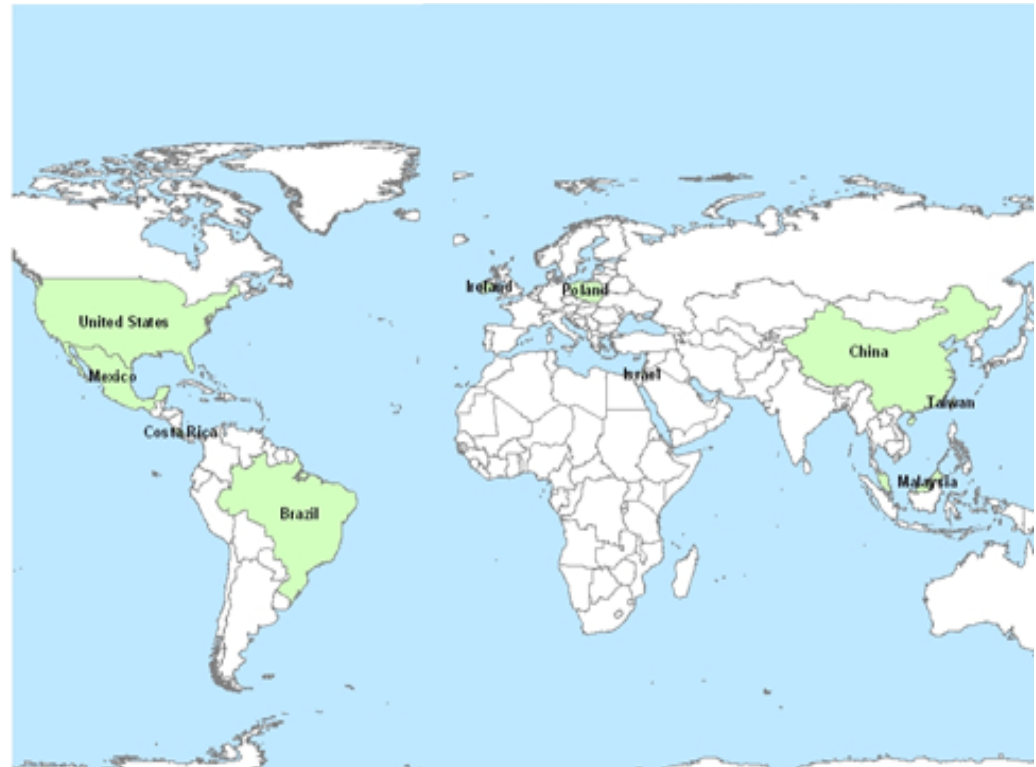
Approach: Enhancing Awareness – Second Nature or Work or both?

- How do people know **to whom** they should display actions and **whose** actions should they monitor?

- The ***awareness network*** is the set of actors whose actions need to be monitored and those to whom one needs to make one's own actions visible.

Monitoring

Monitoring

Displaying
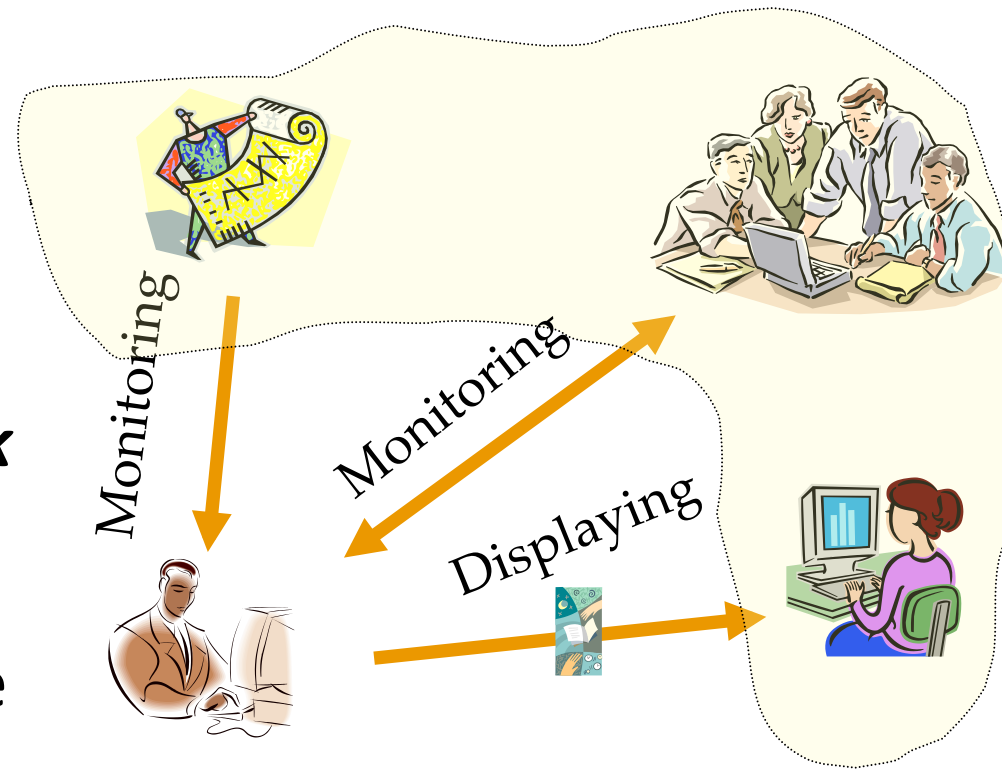
de Souza, C.R.B., Redmiles, D.F. *The Awareness Network, To Whom Should I Display My Actions? And, Whose Actions Should I Monitor?,* IEEE Transactions on Software Engineering, V. 37, N. 3, May/June 2011, pp. 325-340.

One Solution: Software Tool Support
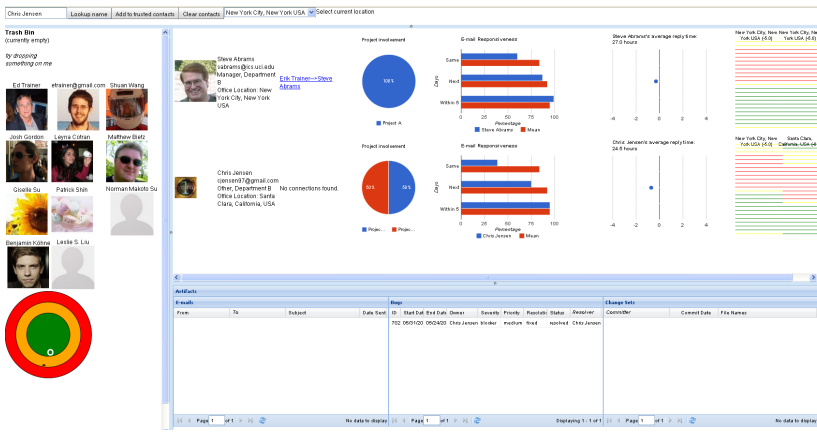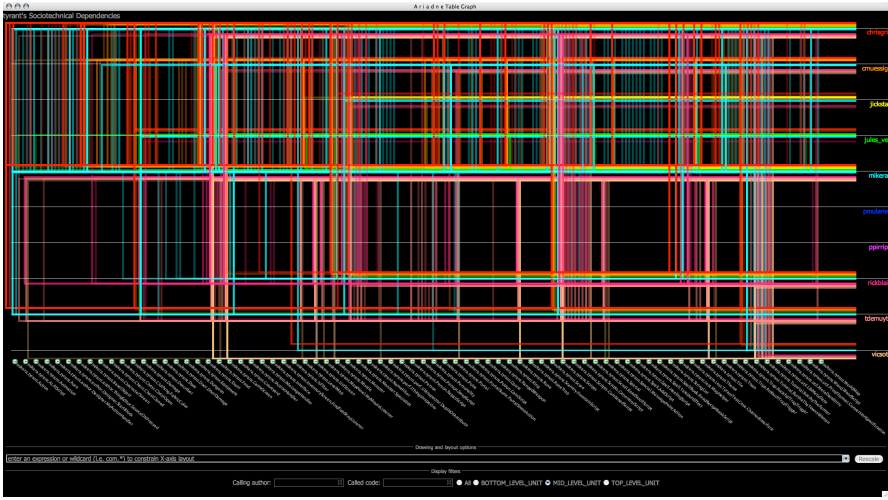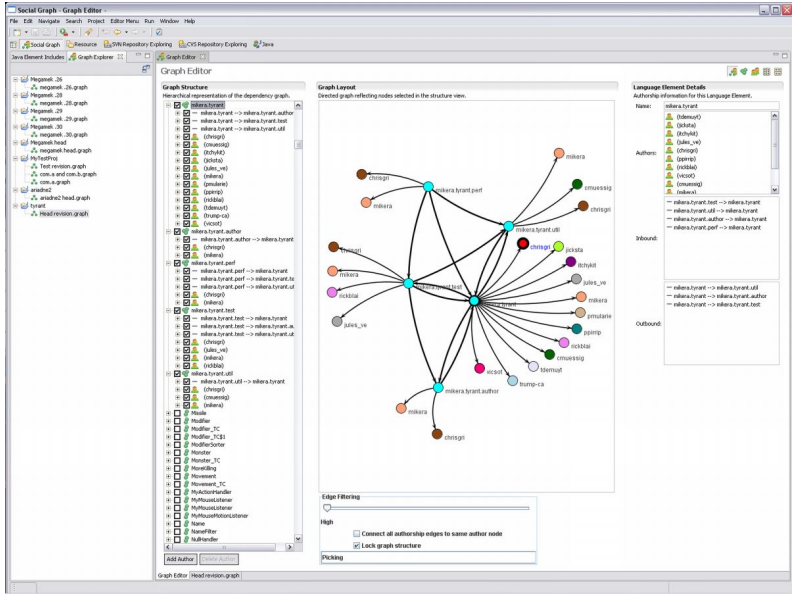
Al-Ani, B., Redmiles, D. Trust in Distributed Teams: Support through Continuous Coordination, IEEE Software, V. 26, N. 6 November / December 2009, pp. 35-40.

Redmiles, D., van der Hoek, A., Al-Ani, B., Hildenbrand, T., Quirk, S., Sarma, A., Silva Filho, R., de Souza, C., Trainer, E. Continuous Coordination: A New Paradigm to Support Globally Distributed Software Development Projects, Wirtschaftsinformatik, V. 49, 2007, pp. S28-S38.

The Power of Affect or …
… The Personal Dimension

- Working together is like a hunt. Cooperation yields a larger prize.

- But what encourages cooperation?

- In previous studies of distributed teams in 5 industry settings, trust was greater when informal sharing or activities occurred.

- We were able to model the spread of cooperation and the parallel between "cheap talk" and cooperation in the Lucene and CHROMIUM OS projects.

Wang, Y., Redmiles, D. *Cheap Talk, Cooperation, and Trust in Global Software Engineering: An Evolutionary Game Theory Model with Empirical Support,* Empirical Software Engineering, 2015, pp. 1-35.

Going a Step Further: Drawing at Work

- What if you could express yourself anonymously and abstractly to the group? Would you feel more positive and be more cohesive and trusting in the team?

- Teams of 3 drew together using Groupboard; Half performed directed drawing (Bren Hall); half were allowed open-ended.

- Drawing improved team cohesion and positive emotions with freeform drawing having the strongest effects.
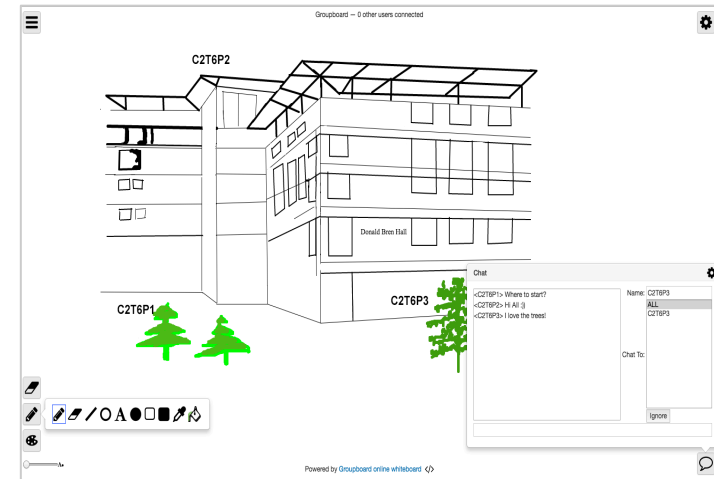
Zhao, M., Wang, Y., Redmiles, D. Strengthening Collaborative Groups Through Art-Mediated Self-Expression, The IEEE Symposium on Visual Languages and Human Centric Computing (VL/HCC 2015, Atlanta, Georgia), October 2015, pp. 177–181.

Reflections

- Enhancing the technical by
- Maintaining and enhancing the personal

Introducing the 2016 IEEE ICGSE Conference (icgse.org)

Connecting
Industry and Academia

11th IEEE International Conference on Global Software Engineering
August 2-5, 2016
Orange County, California, USA
ICGSE 2016

- The 11th IEEE International Conference on Global Software Engineering (ICGSE 2016), August 2-5 – happens right here!
- Professional Society Sponsor – IEEE Computer Society
- Additional Sponsors
  - Siemens, India; Microsoft, USA; the Institute for Software Research , USA; and the Donald Bren School of Information and Computer Sciences, USA
- Description
  - *ICGSE brings together software engineering researchers and practitioners who are engaged with the challenges of globally distributed teams, customers, and organizations.*
- Earlybird registration by June 30!
- Registration includes tutorials and workshops!
- Web – icgse.org

- ICSE's recent history!

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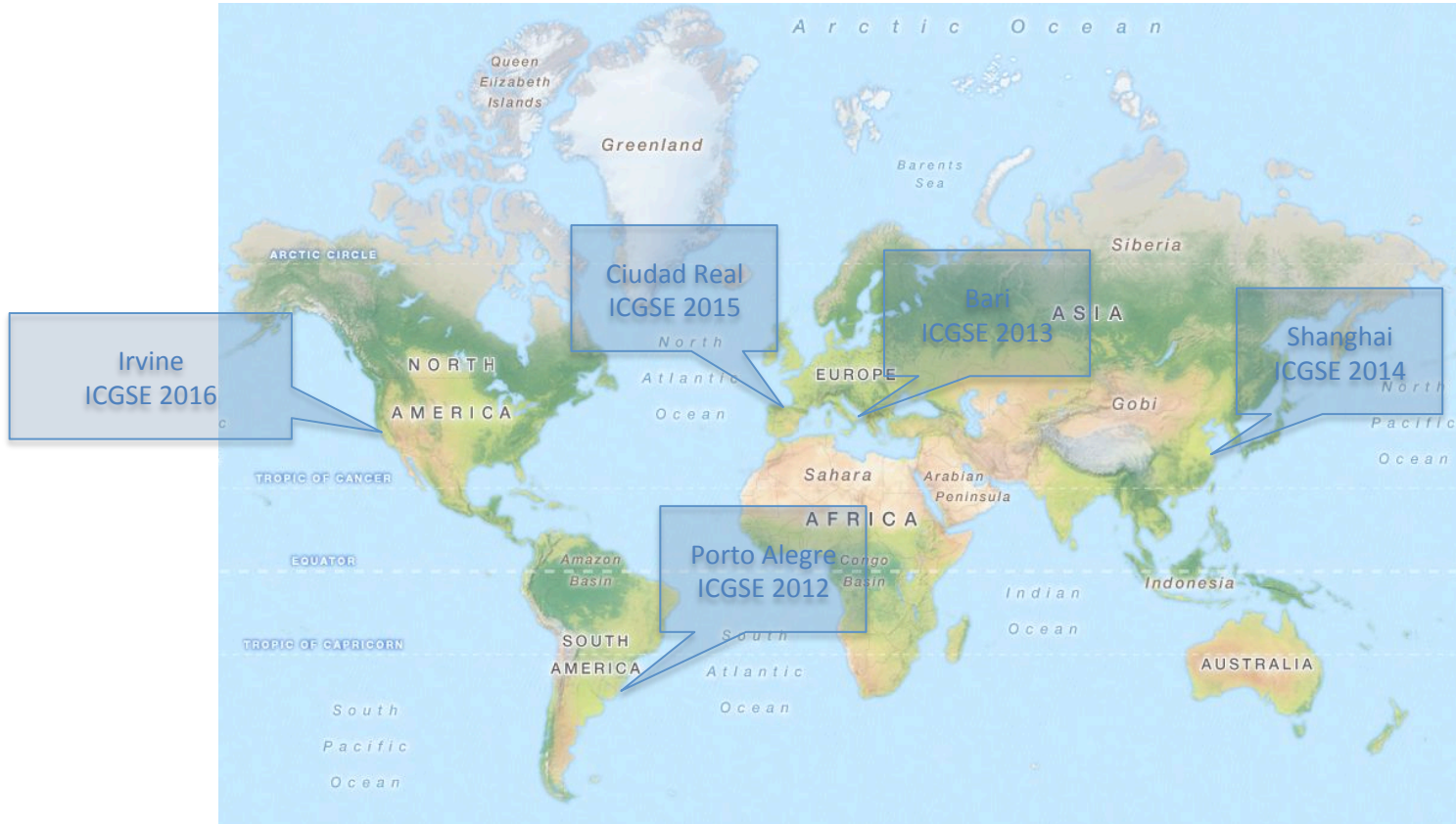ICGSE 2016

KEYNOTES

<u>Customer Led Innovation,</u> Priya Vijayarajendran, Head of Innovation Center Silicon Valley, SAP, USA

<u>To Bot or Not: How Bots can Support Collaboration in Software Development,</u> Margaret-Anne Storey, Professor of Computer Science, University of Victoria, Canada

<u>The ABCs of Software Engineering: Affect, Biometrics, and Cognition,</u> Andrew Begel, Senior Researcher, Microsoft Research, USA

- Tutorials

  1. <u>Scaling Agile to Large Globally Distributed Organizations,</u> Casper Lassenius and Maria Paasivaara, Aalto University School of Science, Department of Computer Science and Engineering, Helsinki, Finland

  2. <u>What did you say? Mindful (intercultural) communication for successful projects,</u> Frederick Zarndt, Global Connexions, Coronado, CA USA

  3. <u>Issues, Challenges, and Opportunities in Open Source Software Development for Global Software Development,</u> Walt Scacchi, Institute for Software Research, University of California, Irvine, CA USA

  4. <u>Distributed Development – Lessons from Industry</u>, Christof Ebert, Vector Consulting Services, Stuttgart, Germany.

  No additional registration fee!

- Workshops
  - PARIS: Methods and Tools for Project/Architecture/Risk Management in Globally Distributed Software Development Projects
  - GSE-Ed'16: Inaugural Workshop on Global Software Engineering Education

  No additional registration fee!

- Themes
    - People, Teams, and Organizations
    - Collaboration and Crowdsourcing
    - Process Improvement and Agility
    - Architecture and System Development
    - Models, Definitions, Frameworks, and Taxonomies

- Accepted Authors' Institutions – Industry
  - SINTEF, Norway
  - Accenture Technology Labs, India
  - Siemens Healthcare Pvt. Ltd., India
  - Siemens Technology and Services Private Limited, India
  - Siemens Schweiz AG, Switzerland
  - Newnerdy Enterprise Group Limited, New Zealand
  - Vector Consulting Services, Germany
- Accepted Authors' Institutions – Academia
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  - IT University of Copenhagen, Denmark
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  - Aalto University, Finland
  - Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS), Porto Alegre, Brazil
  - Federal University of Rio de Janeiro, Brazil
  - UFPE Recife, Brazil
  - Universidad Autónoma de Baja California, México
  - University of Bari, Bari, Italy
  - The Irish Software Engineering Research Centre, University of Limerick, Ireland
  - Oregon State University, USA
  - University of Tulsa, USA
  - Carnegie Mellon University, USA

Early bird registration by June 30

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ICGSE 2016

Still opportunities for sponsorship!

Thank you and see you in August!