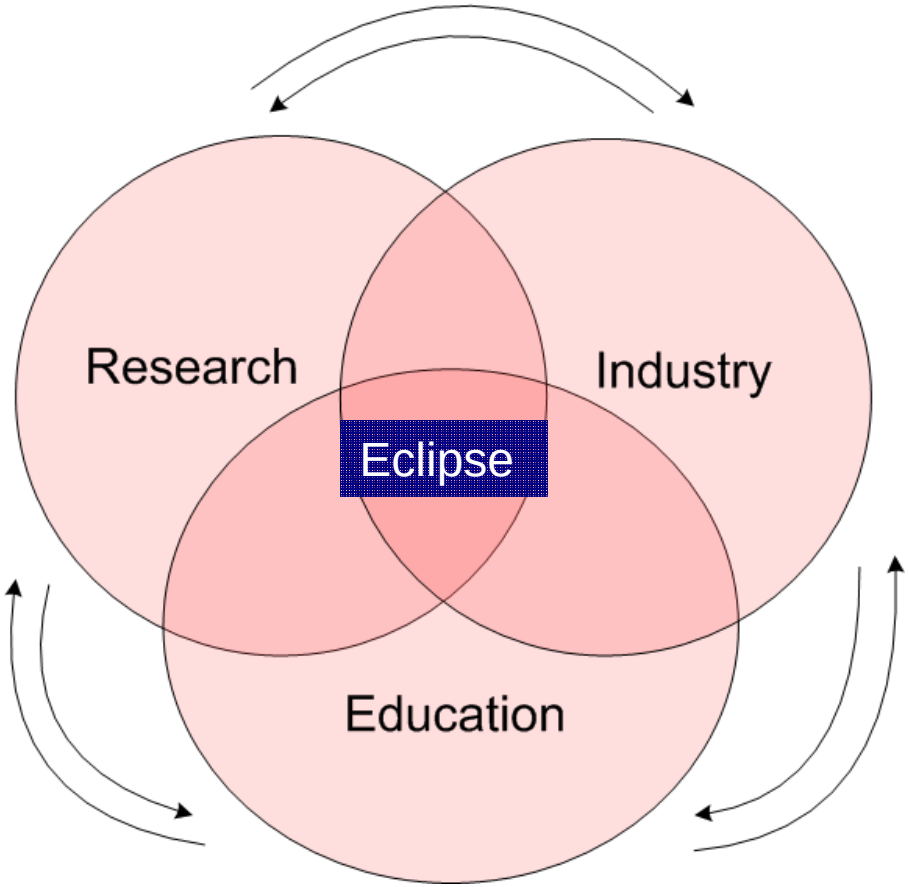
A Research-Industry Technology Exchange:
Crossing the bridge from industry to research



Objectives

- Facilitate a dialogue between academics who are leveraging Eclipse for their research, and practitioners from industry building tools using Eclipse
- Increase collaboration and understanding between the two communities
- Explore how researchers can reduce the time to impact of their work

Research-Industry Panel

- **Li-Te Cheng**
  IBM Research Scientist, Collaborative Application Development Research
- **Jeff Eastman**
  Principal Architect, Collabnet
- **Sridhar Iyengar**
  IChief Technical Strategist, IBM Rational Software
- **Gregor Kiczales**
  Professor, University of British Columbia

Agenda

- 9:15 - 9:25 - Introduction of session and panel members

- 9:25-9:50: **Session 1: Research Demos/Talks: Source Code Analysis and Modeling**
- 9:50-10:10 Panel Discussion

- 10:10 - 10:30 - Break (note 10 mins later than the official break)

- 10:30-10:55: **Session 2: Research Demos/Talks: Web services and EMF**
- 10:55 - 11:15 Panel Discussion

Session 1

- V. Benjamin Livshits (Stanford University)
  Turning Eclipse Against Itself: Finding Bugs in Eclipse Code Using Lightweight Static Analysis
- Derek M. Shimozawa and James R. Cordy (Queen's University)
  TETE: A Source Transformation Environment for Eclipse
- David Mandelin (University of California, Berkeley)
  Prospector: A Source Code Search/Synthesis Engine for Eclipse

Session 2

- Robert Ian Bull (University of Victoria)
  Towards Visualization Support for the Eclipse Modeling Framework
- Amit Sheth, Kunal Verma, John Miller and Preeda Rajasekaran (University of Georgia)
  Enhancing Web Service Descriptions using WSDL-S
- Cesare Pautasso (Swiss Federal Institute of Technology, Zurich)
  Rapid Composition of Web Services with JOpera for Eclipse

Some questions for both industry and academia to ponder….

- Why should industry and research work together?
- When does it make sense?
- What are the advantages/disadvantages?

Some questions for industry partners….

- How can industry help reveal important research problems?
- How can industry help researchers evaluate their work?
- How can industry help researchers to work on problems that matter?

Some questions for academics…

- Is the tool or research relevant to industry?
- Is it a problem that industry knows exists?
- How can researchers convince industry to adopt their work? What would it take?
- What other efforts in industry can the academic work be compared to?
- Why use Eclipse?

Notes from the panel discussions

Detailed Notes Panel 1

- 2 of these tools would be immediately viable in industry
- On eclipse.org there are several areas to facilitate collab between ind & res
- Websites – browse
- Would be good to identify transitions – build on what exists – eclipse.org is a good place to identify these
- Speed to industry use – be explicit as to what is being extended
- Being on receiving end of "technology transfer" is not where ppl want to be – should be on co-development
- Derek – on verge of releasing code, Q: for those who have done this before, what has been their experience – how is it being adopted?
- Eclipse.org technology project is set up to enable graduated usage of experimental tools into product use
- Make sure code works right away – ppl will download once, not go back and check on it if it doesn't work first time
- Collaboration between research community and industry is key
- Having alternate algorithms to offer other solutions
- Corporation intern programs allow student to work on their thesis project
- Ian – at what point should researchers approach industry? Does it have to be a working prototype
- The earlier you talk to industry is best to know if you're on the right track

Detailed Notes Panel 1 cont'd

- Benjamin – what approach works best?
- A - Build a community around your idea and many of these influencers will come from industry
- The closer Res is to using the mainstream terminology the community is using, the better chance of reaching and engaging the community
- Academic conferences attract many industry experts and developers – read the papers, talk to the presenters, network, build relationships
- Research is usually 5-10 yrs ahead of industry implementation
- Being involved in eclipse projects and Bugzilla is a great way to be noticed by the community
- What is your goal – to be a researcher or a product developer? Know your audience. Know what you want to do. One can short-circuit the other if it's not clear
- Tools that address defect repair help industry to bring products forward faster
- People use Google to search for these tools

Detailed Notes -- Panel 2

- For Ian - work directly w EMF Project team
- Take ideas from EMF and GEF to come up with storyboarding to enable rapid visualizations, graphical apps (vs Powerpoint)
- Additional resource needs – ask companies to take a risk for more funding to help w research
- Packaging does not always work – some aspects may not appeal to users, so whole package is rejected
- Keep ideas streamlined and focused on value proposition
- Eclipse is not a server
- Most of presentations here have shown that they work (and have shown that they work) – but key to appeal to industry is the value they bring – work on "elevator pitch" – big picture
- What will this technology do that others do not
- How do they map to existing technologies
- Comment from audience member: Challenge for mentors – metric for validation of work - should encourage good work on its own merit, do not kill good ideas because they may not bring immediate validation HOWEVER (from Gregor) pushing them out to marketplace is the only validation

Detailed Notes Panel 2 cont'd

- One researcher to handle all aspects of research is very difficult and time-consuming
- Joint research projects process (IBM) – proposals are presented and selected for funding: too many proposals are sent back – collaboration is preferred in order to get proposal ideas accepted for research
- Overall conclusion: show value to "customers", collaborate within community, extend what is currently being used/available

Whiteboard notes

- Facilities on eclipse.org for evaluating work e.g. Bugzilla
- When to talk/collaborate
- Be explicit about what is being extended – don't replicate existing work
- Risks of focusing too much on industry work, revolution rather than evolution
- Not Technology Transfer – should be co-development
- Reliability/Usability key (plug-in)
- Look for convergent technologies/anticipate what is coming
- Identify value proposition
- Provide extension points
- Collaboration Mechanisms: grants, interns, community – e.g. open source
- Keeping ideas/work streamlined (wrt value proposition)
- Compare new technology to existing technology in the mainstream
- Balance research/industry development – be fair to grad students
- Focus more on fewer but better, more streamlined ideas
- What is research? Depends….

Acknowledgements

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