The IMPACT Project:
Assessing the Impact of Software Engineering Research on Practice

STATUS UPDATE

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Pessimistic View of Software Engineering Research

- Software engineering research has had minimal impact on practice
- Software engineering research results have effected minimal increases in productivity
- Software engineering research has been a poor investment, giving little return
- Industry leads, research follows
  - (Industry cleans up; research sweeps up)

Optimistic View of Software Engineering Research

- Our Research is Respectable:
  - Software engineering research problems are hard, fundamental, and enduring
  - The research community has an increasingly strong grip on these problems
- Our Research Has Positively Impacted Practice
  - The software practice community has achieved orders of magnitude productivity increases
  - Research results have driven much of this

The basis for a sound and thriving discipline

The Problem

- Negative perceptions of software engineering research contributions HURT
- Research community acquiescence HURTS
- Optimistic view is a hard sell
  - Even to some of us
- Firm information about

IMPACT OF SOFTWARE ENGINEERING RESEARCH ON PRACTICE could HELP

The Impact Project

- Provide scientific scholarly answers to:
  - What are the hard and fundamental problems?
  - What impact has research really had?
  - What future impacts should be expected?
  - What future directions will software research take?
- How?
  - Sigsoft project (international)
  - NSF and Sigsoft funding
  - EU, Japanese, private funding (?)
- When?
  - Over the next 18-24 months

Project Products

- Set of reports
  - Organized around subject areas
  - Range of sizes
    - Full (25-30 pages?): journal quality
    - Condensed (3-5 pages?): magazine style
    - Popular press (?): Scientific American?
    - Abstracts (one pager, one paragraph)
- Briefing materials
  - For all occasions

Project Organization

- Steering Group:
  - L. Osterweil, J. Kramer, C. Ghezzi, A. Wolf
- Subject Area-Based Author Groups
  - 12-20 Subject areas
  - 8-10 Authors per subject area
  - 1-2 Lead Authors per subject area
  - Inclusive, open to broad community participation
- Panel of Distinguished Reviewers

Dissemination of Results

- Panel Presentations
  - FSE 8: Preliminary Sketches
  - ICSE 2001 session: Early Results
  - ICSE 2002 (mini?) track (Proposed): Broad Set of Reports
  - ICSE 2003 (?): Full set of reports/volume (?)
- Briefings
- Various Publications
  - Eg. TOSEM, TSE, SEN, IEEE Software,Computer
- Web Site (later)

Initial Subject Areas

- Reviews/Walkthroughs
  - Dieter Rombach and Dewayne Perry
- Configuration Management
  - Jacky Estublier
- Testing and Analysis
  - Lori Clarke and David Rosenblum

The Next Wave

- Middleware
  - Wolfgang Emmerich
- Process/workflow/lifecycle models
  - Volker Gruhn
- Modern Programming Languages
  - Mary Lou Soffa and Barbara Ryder
- Requirements Engineering
  - Anthony Finkelstein and Axel van Lamsweerde
- Reverse Engineering
  - Hausi Muller
- Cost/Economic Models

Outline of This Session

- Introduction to the Impact Project (Lee Osterweil)
- Configuration Management (Jacky Estublier)
- Reviews and Walkthroughs (Dieter Rombach)
- Modern Programming Languages (Mary Lou Soffa)
- **Advice on How We Proceed From Here**
  - **General Discussion**
- Closing Summary

Comments?

We’re not gonna take it anymore (?)