DBD: Perspectives from the International Design Community

Professor Deborah L. Thurston
University of Illinois at
Urbana-Champaign

Outline

- 14th ICED Conference, Stockholm, Sweden, August 19-21, 2003
- What we have in common
- Where we differ
- Question *not* open for debate

The Design Society *Special Interest Group on Decision Making*

- About 25 attendees
- Research issues
- Tutorial on multicriteria decision making
  - Pareto optimal frontier
  - Concordance, weights and utility analysis
  - Solution algorithms

Research Issues Identified by SIG

- Business aspects
- Team design
- Documentation
- Customer needs
- Academic ≠ industry
- Iterative DM
- Validation
- Tradeoffs
- Aware of reasoning vs. unaware
- Steps:
  - Synthesis
  - Selection
  - Conflict resolution

Similarities

- Recognition of the importance of decision making in design
- Nonetheless, DBD viewed as separate “special interest”, rather than fully integrated
- Awareness of formal decision theory, but little exposure in engineering curriculum

Differences

- Only recently designated as special interest
- Relatively few ICED papers on DBD
- Research issues cover same topics, but NSF DBD workshop issues more refined
- Not quite as much interdisciplinary research

Questions that should NOT be Open for Debate

- Does design require decision making?
- Does decision making require judgment?
- Are we satisfied with existing design decision *processes* and their *outcomes*?
- Should formal decision making be part of the engineering curriculum?
- Vocabulary