

Highlights of 12ICSQ

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March 27, 2003

Roadmap

- What's 12ICSQ?
- Themes / Hot topics
- Keynote address highlights
- Concurrent Session highlights
- Wrap-up

What's 12ICSQ ?

- ❑ 12th International Conference on Software Quality
(<http://www.icsq.org/12ICSQ/12ICSQ.htm>)
- ❑ Sponsored by the Software Division of the ASQ (Ottawa Valley Section)
- ❑ Held in Ottawa on Oct. 29-30, 2002
- ❑ 140 attendees from 14 countries
- ❑ Presenters came from varied backgrounds: academia, industry and consultants

Highlights of 12ICSQ

3

Conference format

- ❑ **Keynote addresses:** opened and closed each day
 - Topics of broad interest, from a high-level perspective
- ❑ **Concurrent Sessions:** total of 30, with 6 running concurrently in each 90-minute slot
 - More detailed, mostly practitioner-oriented
- ❑ **'Birds of a feather':** discussion groups on specific topics, facilitated by keynote and session presenters

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4

Themes / hot topics...

- The youth (immaturity?) of software engineering
- Agile development methods
- Requirements management

Opening Keynote – “Secrets of the Agile Organization”

- Presented by: Tom DeMarco
- Main message: “We need more slack”
- Trend is for companies to be over-optimized, fearful, extremely busy
 - Slack is the degree of freedom necessary to make change possible
 - “Business is not the same as busy-ness”
- We need a new discipline to prioritize what gets done, and decide what *doesn't* get done (a radical departure from the norm)
- Lightweight processes are the wave of the future (XP, SCRUM, Crystal Methods, etc.)

Opening Keynote (cont'd)

- Our work is getting harder; systems we build today involve more risk, higher visibility, more conflict
- Demographics are not in our favour; average age of IT workers is getting older
- More important than ever to retain people

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7

Opening Keynote (cont'd)

- Prescription for a new era:
 - Become less efficient
 - Lighten process (strive for light process and heavy skills)
 - Learn to Prioritize
 - Choose your projects very wisely
 - Invest in human capital
- More info:

http://www.systemsquild.com/GuildSite/TDM/Tom_DeMarco.html

Highlights of 12ICSQ

8

Second Keynote "The Emerging Consensus on the Software Engineering Body of Knowledge"

- ❑ Presented by: Alain Abran
- ❑ Establishment of Body of Knowledge is a key step in recognition of software engineering as a mature discipline
- ❑ SWEBOK project objectives:
 - Promote a consistent view of software engineering worldwide
 - Clarify place of, and set boundary of, software engineering with respect to other disciplines
 - Characterize the contents of the SWEBOK
 - Provide a foundation for curriculum development and individual certification and licensing

Highlights of 12ICSQ

9

Second Keynote (cont'd)

- ❑ Project team included editorial team, industry advisory board, knowledge area specialists, and a very large international group of Reviewers
- ❑ Intent is to capture "generally accepted" knowledge and practice
- ❑ Currently used in S/W engineering curricula around the world (includes Ottawa U., Waterloo)
- ❑ More info:
<http://www.swebok.org>

Highlights of 12ICSQ

10

Third Keynote - "Software Reliability Engineering for a More Efficient Process"

- ❑ Presented by: John Musa
- ❑ A set of processes and practices that complement existing ones, and lead to increase software reliability
- ❑ First step: Increase effective resources
 - Quantitatively characterize expected use (operational profile)
 - Focus resources on most used and most critical functions
 - Maximize test effectiveness by making test highly representative of field

Highlights of 12ICSQ

11

Third Keynote (cont'd)

- ❑ Second step: Apply resources to maximize customer value
 - Set quantitative objectives for major quality characteristics
 - Choose S/W reliability strategies to meet objectives
 - Track reliability in system test against objective as one of release criteria (CASRE reliability estimation software)
- ❑ More info:
<http://members.aol.com/JohnDMusa>

Highlights of 12ICSQ

12

Closing Keynote (Tom Lister)– “Risk Management and Value Assessment for Product Discrimination”

- Presented by: Tim Lister
- Discussion of risk management in software projects
- Plan sequence of construction:
 - What *has* to be there?
 - What will be painful if it's not there?
 - What needs to be there soon?
 - What doesn't matter if it's missing

Closing Keynote (cont'd)

- For each category perform *Risk Ritual*:
 - Identify risks
 - Assess risk exposure
 - Determine which risks to manage
 - Form action plans for *direct* risks
 - Form contingency plans for *indirect* risks
 - Build tripwires into project plan
 - Keep the process going...
- More info:
 - http://www.systemsguild.com/GuildSite/TRL/Tim_Lister.html
 - <http://www.sei.cmu.edu> (S/W risk management)

Concurrent Sessions: Overview

- Wide variety of topics
- Roughly grouped into these areas:
 - Quality processes
 - Metrics and measurement
 - Project management
 - Standards
 - Advanced topics
- The following slides attempt to present a cross-section

Highlights of 12ICSQ

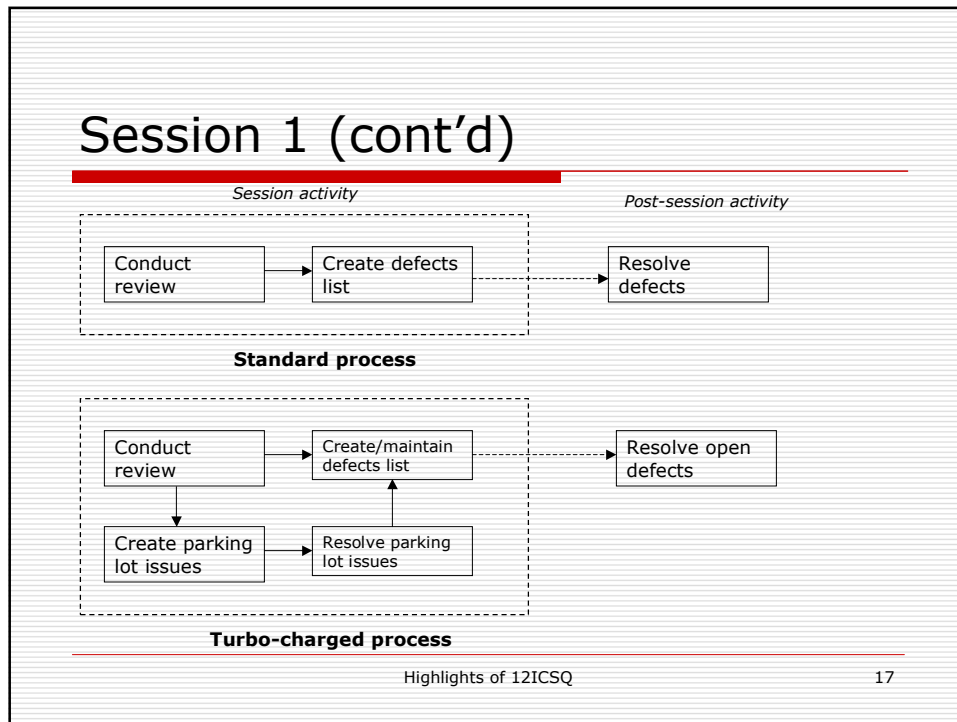
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Session 1 – “Turbo Charging the Formal Peer Review Process”

- Presented by: Kala Ranganathan
- Describes enhancements to the formal peer review process designed to make it less painful
- Factors in human psychology to make the experience rewarding and fun
- Main change is to incorporate defect resolution step into the process, rather than treat it as a follow-up activity

Highlights of 12ICSQ

16



- ## Session 1 (cont'd)
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- Make the review fun:
 - Rewards for finding defects
 - Use egg-timer to enforce time limits
 - Food!
 - Create a parking lot for issues
 - Incorporate defect resolution in to the review process
 - More info:
 - windchime44@aol.com
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- Highlights of 12ICSQ 18

Session 2 – “The Uses and Abuses of Software Metrics”

- Presented by: Pat Cross
- Many software people:
 - Do not understand ideas of types of data and limits on precision
 - Do not have a statistical way of thinking
- Data can be misused in many ways:
 - Not clarifying what you want
 - Not looking at the pattern of data
 - Comparing averages and not spreads of data
 - Jumping to conclusions about actions

Session 2 (continued)

- Know why you are collecting data
- Before you collect it, know what type of data it is and how it will be limited
- Start having a Statistical Way of Thinking by always plotting the data and thinking about them
- If you must use a statistical tool, take a course or get a statistical friend
- More info: <http://www.londonst.com/index.html>

Session 3 – “Agile Modeling and Software Quality”

- Presented by: Scott Ambler
- Agile software development is “an approach to S/W development that is people-oriented, that enables people to respond effectively to change, and that results in the creation of working systems that meet the needs of its stakeholders”
- Examples of Agile software processes:
 - Agile modeling, Crystal Clear, eXtreme Programming, Scrum

Highlights of 12ICSQ

21

Session 3 (cont'd)

- Agile Alliance: 17 methodologists met in 2001 to discuss fundamental values and principles of effective software development
- The Agile Manifesto:
 - *Individuals and interactions* over processes and tools
 - *Working software* over comprehensive documentation
 - *Customer collaboration* over contract negotiation
 - *Responding to change* over following a plan

Highlights of 12ICSQ

22

Session 3 (cont'd)

- Agile Modeling: “a chaordic, practices-based process for modeling and documentation... a light-weight approach for enhancing modeling and documentation efforts for other software processes such as XP and RUP”
- More info:
 - <http://www.agilealliance.org/home>
 - <http://www.agilemodeling.com>

Session 4 – “12 Steps to Useful Software Metrics”

- Presented by Linda Westfall
- A procedure for picking the right metrics out of the many possibilities
 - 1. Identify metrics customers
 - 2. Target goals (Goal-Question-Metric)
 - 3. Ask questions
 - 4. Select metrics
 - 5. Standardize definitions
 - 6. Choose a model
 - 7. Establish counting criteria

Session 4 (cont'd)

- 8. Define decision criteria
- 9. Define reporting mechanisms
- 10. Determine additional qualifiers
- 11. Collect data
- 12. The people side of the equation
- More info: <http://www.westfallteam.com/>

Wrap-up

- An excellent way to become familiar with the current "state of the art"
- Opportunities to meet leaders in the field, and colleagues from around the world
- A good chance to step back and think about the "big picture"
- 13ICSQ is in Dallas, Oct. 6-9
See <http://www.icsq.org/> for more info

Presentation Title: Highlights of the 12th International Conference on Software Quality (12ICSQ)

Presenter: Brian Baskerville, Nortel Networks

Presentation Abstract:

The International Conference on Software (ICSQ) is an annual event that is organized by the software division of the American Society for Quality (ASQ). The 2002 edition of this conference (the 12th) was held in Ottawa last October.

The conference program was composed of a mix of paper presentations, workshops and keynote addresses. Taken together, these sessions provided a unique opportunity to assess the current 'state of the art' in the software quality field, and to learn about subjects outside of one's own area of expertise.

This presentation will describe the highlights of 12ICSQ, from the speaker's point of view. Its intent is to provide a sense of the current 'hot topics' in the field, as well as practical information and references that may be useful on the job.

Brief Bio:

Brian Baskerville received his undergraduate degree in Electrical Engineering from the University of Waterloo in 1982. Since that time he has been involved in the design of hardware, firmware and software for real-time embedded systems. In 1993 he joined the Wireless division of Nortel Networks, where he participated in the design of TDMA and CDMA base station software. He has recently joined the R&D Operations team for Nortel Wireless, which is responsible for developing and deploying processes and tools to improve R&D effectiveness. Brian obtained his CSQA certification in December of 2002.