Rethinking the ISSRE Charter

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Background - What Is This All About?

- Set up in late 1998 by Bill Everett, the ISSRE Technical Committee Chair, to develop an ISSRE Conference Charter
- The 5 person team selected represents a mix of industry and academia
- Growth of the conference over the past 8 years demonstrated considerable Industrial interest in the area
- The Research agenda has broadened, making this an opportune time to assess where we are and where we ought to go

Objectives of the Committee

- Review existing ISSRE policy
- Draw on charters from other conferences
- Elicit wide input from past ISSRE attendees and participants
- Provide periodic status reports back to the SRE Committee
- Draw up a proposed charter and policy for ISSRE by May 1999 to be used during the selection of proposals for ISSRE'2001
- Proposed ISSRE charter/policy will be reviewed and voted for adoption by the SRE Committee.
- Opportunity to set long range direction for future ISSRE's

Issues

No.	Strategic/ Operational	Issue
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The Customers of ISSRE and Their Expectations

Academia:	
Very senior tenured professor	recognition, mentoring, direction setting
Tenured professor	publication, technical exchange, networking, reconnaissance/direction setting
Non-tenured professor	publication, making contacts for references, reconnaissance/direction setting
PhD student	publication, job search, free trip
Undergraduate student	present their work, meet senior people, learn
Industry:	
PhD in Research Lab	similar to tenured/non-tenured professor, competing process
PhD in Development Lab	publication less important, learn about new research that can be applied to our own work, networking with academics ("feels good"), learn (application focused)
Engineer - Architect - senior developer - junior developer	similar to PhD in development lab but with a project/product focus • generally have no time to attend • open to new things
Consultant in process, quality, etc	learn about new research, promote their own methods, tools and expertise if consultants for hire, promote their niche
Service delivery professional - project management - SRE methodology - etc	share implementation experience, learn about new research that can be applied to own work

Objectives

1. Exchange of experience
2. Discussion of evolving research
3. State of practice
4. Forum for discussion
5. Learn about emerging issues
6. Recognition of results
7. Exposure of work
8. Directions setting
9. More motivation
10. Competing process

Mission / Vision

ISSRE is an international conference dealing with "Software Reliability Engineering" which is defined as the discipline that involves

- quantitative
- algorithmic

methods for measuring and achieving high reliability in software. The mission of ISSRE is to advance this discipline by

- promoting research and developments in the field
- promoting dissemination of new techniques to practioners
- promoting interaction and exchange of information between researchers/developers and practitioners
- promoting discussion of the problems and solutions in the field

Overlaps

Metrics

- One of the biggest overlaps due to the number of papers in ISSRE dealing with metrics or the relationship of metrics with reliability. Metrics does not, however, overlap much with ISSRE because Metrics has had few papers dealing with reliability.

ICSM

- This overlap has not been significant because there have been few papers dealing with the relationship between SRE and maintenance. There have been a fair number of ICSM papers dealing with metrics but not reliability per se. ISSRE has had relatively few papers that address maintenance issues.

ISESS

- This symposium has had few papers on reliability, although there have been some workshops on reliability standards. ISSRE has few papers about standards.

RAMS

- RAMS has had a considerable number of software reliability papers but also has had a lot of hardware reliability and maintainability papers -- subjects that are not currently addressed by ISSRE.

Overlaps (continued)

- These overlaps should not be considered as unhealthy but rather a deficiency of breadth in ISSRE

- ISSRE should cover more than testing, reliability modeling, and prediction. SRE should be viewed as the process brought to bear on the entire process of software development and maintenance, from the specification of software reliability requirements to the assessment and prediction of reliability during maintenance and operations.

- Two of the biggest problems in applying SRE, both from technical and cultural standpoints, are:

  - the relationship between SRE and software safety and between SRE and systems engineering. The safety community has a very different outlook on how to assure quality than does the SRE community.
  - many colleagues feel that software engineering is too narrowly focused and that software engineers do not understand that software has to operate in a larger context that involves hardware, human organizations, logistics, politics, etc.

Role of Industry

Industry can be involved inseveral ways:

- From industry to research: inform the research community about best practices, what industry does now (presentation of case studies) and needs to help researchers define research directions

- From research to industry: collect feedback from attendance (best state of the art)

  - traditional large company view
  - small company/silicon valley view

Build these ideas into ISSRE objectives and mission

Role of Industry (cont'd)

Suggestions to involve industry:

- Look at conferences similar to ISSRE (those with specific objectives such as education, good tutorials, vendor participation)
- Active participation in the PC to actively seek and solicit participation of colleagues in chosen theme area
- Participation in the Executive (steering) Committee to look at strategic directions; have a multi-year perspective and long term initiative
- Creation of multiple area chairs to meet the needs of more people assuming roles of GC,PC, etc.
- Industrial track as was preciously done in Monterey, etc
- Entire track for a specific company
- Panels such as that organized by John Musa - "Everything You Wanted to Know About Software Reliability Engineering But Didn't Know Who to Ask")
- Allow new / small software companies to present how they do SRE (how they analyze the process and ensure quality)
- Encourage radical ideas: e.g., special session similar to FastAbstracts

Role of SC Relation to AC and PC

Objective: Ensure that long-term needs of ISSRE customers are met

- The application of SRE to networks must be adequately represented in future symposiums. Under this plan, the PCs would no longer simply issue a CFP and wait for good things to happen. but rather there would be a proactive effort to shape events rather than react to them, thereby ensuring the needs of important customers can be met. It is important to note that a successful enterprise is not content with reacting to demand. Rather, it creates demand for its products and services. Thus ISSRE needs to explore new areas of application of SRE that will support its growth.

Implementation:

- Several Area Coordinators (ACs) appointed for 2-3 year term by SC. Role would be to encourage PCs to consider needs of a given area in programming planning and design
- CFP for papers, tutorials, panels, fast track abstracts, etc. should welcome all topics of research and practice of SRE in internet, lan, wan, distributed systems applications
- Researchers and practitioners in networks area to be invited to present keynotes and tutorials
- Program design should reflect program plan
- ACs to monitor trends in growth in assigned areas as well as analyze demographics of attendees and attendee surveys to correlate needs with program content

This plan assumes the existence of a Steering Committee (SC) or Excom specifically charged with ISSRE policy which should develop and periodically update a long-range plan (three to five years) that defines its markets and customers and specifies the growth areas of the future.

Role of SC Relation to AC and PC (cont'd)

- ISSRE should not grow at the expense of quality but instead should strive for balanced growth. This means that while we grow new areas, the PC is charged with maintaining quality and that quality would take precedence over consideration of including growth area papers in the program.

- There should be a balance between research papers and industry papers. The ideal situation is for the PCs and ACs to achieve synergism between research and practice. e.g., if networks were a growth area, an attempt could be made to include research in fault detection and resolution analysis on the WEB combined with practitioner studies of Internet service providers' approach to software reliability.

Organization:

- ACs selected by SC on the basis of past performance by PCs.
- Successful ACs would be leading candidates for future PC chairs
- ACs should be appointed on a trial basis after our report is submitted

Role of SC Relation to AC and PC (cont'd)

Arguments in favor of proposal:

- ISSRE would grow and become more relevant because it would be reaching out to untapped communities and moving to where the demand is.
- One could argue that the functions of the ACs could be carried out by PCs. However, the life of a PC is a single conference whereas the ACs would have multi-year appointments.
- If ISSRE does not adopt new approaches such as the use of ACs, it will stagnate at its present growth plateau.

Arguments against proposal:

- ACs could be viewed as a threat to the general and program chairs and as interference in their responsibilities for conference management.
- Worthy papers which do not address the subject of ISSRE's planned growth may be assigned low priority for inclusion in the program.

Recommendations:

- Appoint a permanent SC.
- One of the first tasks of the new SC would be to identify 3 to 5 growth areas for ISSRE.
- Based on the results above, the SC would appoint ACs in these areas for a 2 to 3 year term on a trial basis. At the end of this time, the AC program would be assessed and either continued or possibly expanded.

Leadership

Composition - Evolution of the SC:

- Need at least a set of people who
  - are aware of the history of the conference
  - have contributed as PC or General chair
  - wish to take an active role (the core)

- The group of people involved is growing each year. What is the optimal number? A group of 12-15?

- Do we need good international coverage?

- Election of the Chair: by the members of the current SC for a term 2/3 years?

  - Mode of election: vote, simple majority?
  - What about a Vice-Chair? The Vice-Chair would then become the next Chair. This prepares the chair for this position. Can be replaced if necessary. The first time the SC elects Chair and Vice-Chair; thereafter it elects the Vice-Chair only.

Leadership (cont'd)

Role of SC: To oversee the conference evolution

- Should hold at least one annual meeting during conference
- Approval of General Chair and Program Chair (3 years in advance)
- Approval of Location of Conference (3 years in advance)
- Approval of Program Committee Chair (2 years in advance)

- Approval of PC Members?
- Selection of Tutorial Chair?

Leadership (cont'd)

Arguments against the proposal:

- The ACs could be viewed as a threat to the General and Program Chair and as interference in their responsibilities for conference management
  - To avoid this, appoint ACs for each conference in the same manner as the other chairs.
  - The ACs can be selected by the SC (during the annual meeting) with the consent of the GC and chairs to avoid this feeling of interference
  - Can be re-conducted for the next conference if SC thinks it worthwhile to do.

Arguments for the proposal:

- The SC has more flexibility than when they are "nominated" for three years.
- This is a more dynamic way of working as things are changing very quickly.
- We can adapt our strategy more quickly in that it gives more flexibility at the beginning

ISSRE Charter and Policy

ISSRE's charter and policy cannot be adequately addressed without first considering the policy of our TC on SRE under which ISSRE operates. If we don't understand the objectives of our field and TC, we may hard pressed to intelligently formulate a policy for ISSRE. Consider:

- What is our vision for the field of SRE and the TC on SRE for the next 5-10 years?
  - Examine current TC SRE charter and upgrade if necessary
- How is this vision translated into a charter and policy for ISSRE in this timeframe?
- What are the objectives of ISSRE?
- Who are/should be the customers of ISSRE?
- How can we best meet these customers interests and needs?
  - What are the important technical/application issues that ISSRE should address in the next 5-10 years?
- What should the priorities be among the following in ISSRE programs:
  - Community: Industry, Government, Research, etc.
  - Personnel: Reliability Engineers, Quality Assurance Engineers, Test Engineers, Developers, Managers, etc.
- What should the criteria be for paper, panel, tutorial, tool submissions?
- What should the criteria be for key personnel and site selection?

ISSRE Charter and Policy (cont'd)

- We need a uniform team that can emulate in the conference what practitioners struggle with - radical things such as an entire track for a company on how they do SRE and maintenance.

- We need to take industry needs, map them to a program structure, then communicate those needs to ISSRE. Ideas along these lines: taking fast abstracts as we have them today and converting them to state problems or state current practices

- Discussions on what SRE does now - new companies, methods

- The Silicon Valley companies have different needs. It could be a Research endeavor to analyze what these firms need from a SRE standpoint.

- What are other conferences doing? Is there something we can learn from them?

- Thoughts on broadening the agenda off the charter committee to include understanding relationships with the other conferences in the area. We should make a note of it but not invest too much energy in this direction.

Papers

- We have distinct kinds of papers - research and practice. The current category of paper is called industry track, which might suit the academic notion of industry needs but is quite removed from the practices as industry people would view it. For instance, a research paper is distinguished by being new and different from earlier work, whereas practice papers gain further value when the same idea is tried out by different people. Corroborating evidence from different practices strengthens a practice and industry people are constantly interested in how a similar idea got reapplied.

- We need to attract industry papers, both from a perspective of topics and numbers. ISSRE is really a conference for academics but we'd like to have industry papers. The perception is that while there are industry additions, such as an industry track, the central constituency of the conference is still academic. Although there are several papers from industry and they are very respected authors, they tend to be researchers from industry rather than the everyday practitioner.

- The current PC review process is quite thorough but there is a concern about it not accommodating new ideas. If we go down the path of appointing area chairs, they must have flexibility to get in papers either through certification or override the review process as appropriate

Papers (cont'd)

- In the current structure, we do not focus on any one specific area, thus growing the paper numbers or quality in a specific area is going to be quite limited. We will need to exploit the area chair mechanism and, in addition, distinguish the natures of the papers.

- The design automation and test conference seem to have evolved into a good balance between research and practice. We need to emulate what they're doing well

- We really need to focus on specific areas and lead the charge to the area chairs to grow them. This committee should identify a few of the important areas and then make it a steering committee responsibility to further refine them. The immediate areas that come to mind are: networking software, reliability and component software, the needs of smaller companies in the Silicon Valley, process measurement, and management.

- When we structure the conference, it is important to have keynote speakers that are going to attract a crowd as opposed to unique presentations to honor people.

Site Location

- It is important to hold a conference in a major location. Holding them in small locations does not necessarily benefit the overall conference.

- On the other hand, past experience of ISSRE has shown that either a major location or a small location does not significantly change the attendance.

- While location is important, content and marketing of the conference will determine the degree of attendance we can draw. Good examples are STAR and Quality Week which have successfully drummed up attendance over the years by focusing on the content for their constitutency and locating the conference in a major metropolis.

Growth

- We discussed various growth numbers for ISSRE and have a specific set of target numbers that would be meaningful to shoot for. It will be a good idea to define these numbers up front, then figure out how we can develop a program to reach it. 1998 was a little less than 200, 1999 should be 250, 2000 should be 350 and 2001, 500.

- There are several conferences that are hurting today due to decreasing numbers of attendees. This is in part because there are so many conferences and also because the conferences do not deliver what the larger community needs. We need to grow the conference along the directions that industry people need, namely, learning and sharing of tools and practices. The question then becomes what is balanced growth, and we discussed balanced growth from several different dimensions.

- We need to identify important areas for the industry such as and for example, SRE in networking, and then over a period of multiple years ensure that this area grows strongly. This would be a responsibility thrust by the Steering Committee to those that implement conferences, but the responsibility for continuity between years needs to rest with a few people who know the area. If this were done, then an area could pretty much accomplish what many a niche conference is trying to establish for itself. If done correctly, each one of these focused areas could almost become like a niche conference focusing on a subset of the problems. The advantage to this approach is that they can grow the areas more rapidly and bring together their own collection of practices and tool vendors, helping the overall growth of ISSRE. One outcome from this is that we have had more positions with leadership titles to offer, offsetting one of the needs that drives the creation of new conferences.

Recommendations

- Create/Appoint the SC
- Create/Appoint the role of the AC
- Identify several key technical areas which are relevant and timely and pursue them with the aid of the ACs
  - SRE in networks, networking software
  - SRE needs of smaller companies, and fast TTM
  - SRE with respect to with off-the-shelf components
  - Internet, WWW, Distributed Systems
- Consider name changes - say adding Testing ?
- Tutorials and panels in new focus areas selected by ISSRE rather than on traditional topics

Recommendations, continued

- Lay down a recommended practice for the operation of the the program committee meeting, and other processes that have been evolved - so energy is focused not on re-invention, but new things.
- Create a Practices Track that runs in parallel with the Research Track and have this run by its own committee of practitioners.