Panel
Innovate!

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ABSTRACT
Freedom to innovate is one of the key motivators for many technical workers. Unfortunately, although innovation is often trumpeted as a key company attribute, it seems that many organizations struggle to provide the necessary environment - even those organizations whose original claim to fame lay in their ability to innovate. This panel will look at the barriers to innovation that occur in a variety of environments: large, well-established organizations, start-ups, academia, standards bodies and the open source community. Panelists will propose a set of technical and non-technical techniques that can be used to foster innovation in even the most lethargic or hostile environment.

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1. Laura Hill, laura.hill@sun.com
Laura Hill is the Assistant Director of Sun Microsystems Research Laboratories. She has been involved with the object-oriented community for over 14 years focusing on reuse, emerging technologies, methodology and organization migration. A think tank based on this subject was delivered at OT2003 in Cambridge, England.

2. Dick Gabriel, rpg@dreamsongs.org
Innovation is easy: All you need is a high enough density of triggers with someone or some people prepared and able to combine and react to what they observe. Triggers and being open are all that are needed.

Open source has the potential to do this in abundance, even though the rap on open source is that it has never produced anything new. This belief is belied by the sheer bulk of open source projects: SourceForge hosts about 60,000 projects, Freshmeat reports on almost 30,000, and the Free Software Foundation Repository has 2,000 projects. Freshmeat lists nearly 10,000 projects intended for end users, dispelling the myth that open source produces only tools and infrastructure.

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The second part of creating something is to revise and hone it, based perhaps on the reaction of an audience which may go by the name "customers." And as with any creative activity, what emerges as winners are those selected for that honor-and sometimes the best are the winners.

In the open-source world, the realm of software and open-source communities supply the triggers, and the large number of people supply the open-mindedness. There are few cost impediments beyond time to indulge in the creative act.

What makes other venues non-innovative are a combination of the absence of triggers, limited diversity, close-mindedness, lack of adventurousness, resources to watch a number of revisions, and a fear of picking something to back

Dick Gabriel is a Distinguished Engineer and chief scientist of a small laboratory at Sun Microsystems, researching the architecture, design, and implementation of extraordinarily large systems as well as development techniques for building them. He is Sun's open source expert, advising the company on community-based strategies. He is also President of the Hillside Group, a nonprofit that nurtures the software patterns community by holding conferences, publishing books, and awarding scholarships.

3. Harlan Sexton, harlan.sexton@oracle.com
Software development has been a haven for technical people that want the freedom to try new things, but my feeling is that not a lot has come of their efforts. Some fairly obvious innovations have had very large consequences (e.g., the internet), but I don't see any sign that we understand what we're doing any better now than when I started programming. The rise of open software gives me some hope that programmers will become less terrible, since now anyone can look at a large collection of competently written programs that work. But I think that we need more than social innovations if we have any hope of learning to make use of the hardware we have already, much less the hardware that is and will be feasible.

Harlan is a retread mathematician who has been programming since 1981. His first real job was as a mathematician with N.O.S.C in San Diego, CA, and he currently works as a programmer for Oracle Corporation in Redwood City, CA.

4. Kevin Tyson, kptyson@earthlink.net
While the freedom to innovate is indeed one of the key motivators of many technical workers, innovation, in and of itself, is not an unadulterated good in all circumstances and at all times. From the Phaistos Disk to the many innovations of Xerox PARC, examples abound of innovation that either contributed nothing to the commonweal or little to the good fortune of the innovation's pro-

genitor. Innovation succeeds in a context. Its success, meaning adoption of the innovation as an accepted practice, is inexorably followed by its relegation to the nether reaches of the legacy world. It is within the context of this full lifecycle that the technical worker is motivated and within which we can refine our focus to barriers to successful innovation.

Purposeful enterprises, organized to deliver some good or service - be they open source projects or firms in the armaments industry - may consume innovation and, by its refinement, produce better GUI widgets or gun widgets. Sclerotic enterprises competing in lethargic markets can succeed without fostering innovation regardless of their size, longevity or market gravitas. Such firms should not be sought out by those technical workers seeking gratification through innovation. If, as Oracle's Larry Ellison recently suggested, innovation in the computer industry will be controlled by "a handful of category-dominating winners" then perhaps the entire computer industry should be considered out of scope by those technical workers.

Industry-wide and internationally recognized software, networking and communications standards provide an important waypoint on an innovations path from au courant to ancien régime. It is within the hallowed halls of ISO, OMG, W3C, IETF, JCP, etc, that processes, some themselves innovative others rather more pedestrian, attempt to transform innovation into accepted practice. Perhaps both the diminished participation of industry in these activities and the concomitant rise of the open source world bear witness to the validity of Mr. Ellison's predictions.

Kevin Tyson is an independent consultant with more than 25 years of experience building mission-critical information systems for financial services organizations. He has designed and programmed systems for funds transfer, equities, fixed-income and derivatives trading, settlement, clearance, and compliance operations. Mr. Tyson has been an active participant in the Financial Domain Task Force and Architecture Board of the Object Management Group.

5. David West, dwest@cs.nmhu.edu.

Innovation must be nurtured, both internally and externally.
Organizations can create a culture supportive of innovation and risk taking. Individuals, however, must take it upon themselves to adopt appropriate "ways of thinking" compatible with innovation before they can avail themselves of the context provided by the organization.

Dave has been a professional developer (programmer to consultant) since 1968 and an academic since 1988. He claims expertise in object-oriented analysis and design and developed object curricula at three different *Object Thinking for Extreme Programmers and Agile Developers* universities. Microsoft Press will publish his first book – just in time for OOPSLA 2003.