

CALL FOR PARTICIPATION

“Approaching Complexity” Theme



SCOPE

Conference Theme: Mitigating Paradox at the eSociety Tipping Point

The Institute for Computer Sciences, Social-Informatics and Telecommunications (ICST) IT Revolutions 2008 conference invites scholars, researchers, government officials, and industry leaders to participate by submitting position papers expressing their vision. Papers should address strategic directions in approaching complexity by outlining the major issues and identifying the gaps between the traditional and new ways, thus ensuring a smooth transition toward an information and communications technology (ICT)-driven future.

Today, technological innovation and social transformation are ahead of many traditional societal frameworks: the old ways, although still dominant, are becoming more and more dysfunctional. We are experiencing an “Age of Paradox” as the new ways disrupt how we used to do things and the traditional ways we used to view the world. Just as the major inventions that shaped past Century were made by 1920, major innovations that will shape the 21st Century are happening now.

The IT Revolutions conference is clustered around themes, each championed by a prominent theme leader. Authors of accepted papers will meet in Venice to participate in theme workshops being held as part of the conference. Each workshop will:

- evaluate where we are on the path to turnover
- explore the core elements needed to encourage sustainable change and ensure a smooth transition
- point to the future by underlining the factors enabling the IT revolution to redesign the world economy and society.

“Approaching Complexity” Theme - Areas of Interest

The explosion in size and complexity of ICT systems in all domains of society (as exemplified in the themes of this conference: healthcare, education, defense, business, energy & environment, etc.) has opened the door to entirely new forms of social organization characterized by a high degree of decentralization. Ubiquitous computing and communication capabilities connect people and infrastructures in unprecedented ways, creating complex techno-social systems based on bottom-up interactions among a myriad of artifacts and humans, via computing hardware and software elements. These systems exhibit self-organization and unpredictability that fundamentally challenge traditional systems engineering—based upon requirement specification and hierarchical, top-down management. In short, decentralization has spontaneously appeared, but traditional organizations are not prepared for it.

The New Deal of the ICT age will be characterized by diverse and specialized eNetworked proactive participants (healthcare providers, patients, professors, teachers, students, politicians, soldiers, producers, users, consumers, etc.). This spontaneous trend has preceded our ability as designers to comprehend and control it, while also opening new opportunities for exploiting the formidable potential of ICT advances. Beyond blogging, wikis, e-mail and file sharing, there still remains to invent a new generation of collaborative technologies, perhaps distinct between application domains, to exhibit the highly desirable properties of semi-autonomy, homeostasis, dynamic adaptation, and long-term evolution already present in natural complex systems.

Therefore, we need to develop a sense of capability and security in the changing context. Instead of clinging to an inexorably disappearing totalistic control, we should focus on establishing conditions in which the wave of complexity can develop and evolve by endogenous and local control. Future complex ICT engineering should be less about direct design than developmental and evolutionary “meta-design”.

At the core of this enterprise lie paradoxical questions: Can autonomy be planned? Can decentralization be controlled? Can evolution be designed? Can we expect specific characteristics from systems that we otherwise want to let free to assemble, and possibly invent, themselves? We welcome contributions to new integrated and multidisciplinary approaches toward the “design-by-emergence” of pervasive computing and communication environments able to address and harness complexity.

SUBMISSION INSTRUCTIONS

Paper Format, Submission and Publication

Position papers can range from 2-8 pages.

See the ICST IT Revolutions Web site <http://www.itrevolutions.org> for details on format, submission and publication.

“APPROACHING COMPLEXITY” THEME ORGANIZING COMMITTEE

THEME CHAIR

Yaneer Bar-Yam, President of the New England Complex Systems Institute (NECSI), Boston, USA — <http://necsi.org/faculty/bar-yam.html>

THEME CO-CHAIR

René Doursat, Guest Researcher, Institut des Systèmes Complexes (ISC), National Council for Scientific Research (CNRS), Paris, France — <http://doursat.free.fr>

IMPORTANT DATES

Paper Submission Deadline: 27th October, 2008, 31st October, 2008

Notification of Acceptance: 10th November, 2008

Conference: 17th–19th December, 2008 (“Approaching Complexity” Workshop: 18th December)

TECHNICAL INQUIRIES

should be sent to the Theme Co-Chair, **René Doursat:** rene.doursat@polytechnique.edu



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