

Essay

An Introduction to the Best ICTD 2006 Conference Papers

On May 25–26, 2006, in Berkeley, California, we held the first conference of what we expect will be an ongoing series called the “International Conference on Information and Communication Technologies and Development (ICTD).” This special issue brings together the best papers from this conference.

The conference’s call for papers included the following paragraphs, which provide a good summary of its purpose and mission:

The past decade has witnessed an explosion in projects that apply information and communication technologies (ICT) to support socioeconomic development. Every sector is involved—governments, academia, small start-ups, large corporations, intergovernmental organizations, nonprofits, and nongovernmental organizations. In spite of the tremendous energy and resources behind these projects, scientifically sound research in this space has emerged slowly. What is the actual impact of ICT projects? What novel technology is required to meet development needs? What methodologies lead to success or failure of a project?

The goal of the ICTD conference is to provide a forum for academic researchers working with ICT applied to development. The conference will be scientifically rigorous and multidisciplinary—papers reporting high-quality original research are solicited. Submitted papers will be subjected to double-blind peer review, and the full proceedings will be published at the time of the conference. The conference will bring together researchers in both the social and technical sciences, with anticipated representation from anthropology, sociology, economics, political science, computer science, electrical engineering, industrial design, and so on.

For the purposes of this conference, the term *ICT* will comprise computing devices (e.g., PCs, PDAs, sensor networks), technologies for voice and data connectivity, the Internet, and related technologies. Application domains include education, agriculture, healthcare, poverty alleviation, general communication, and governance. Papers will be considered that focus on novel design, new technology, project assessment, policy impact, content, and social issues around ICT for development. Well-presented negative results from which generalizable conclusions can be drawn are also sought.

There are several themes here that deserve further explanation, as they were very intentionally inserted.

The first is the emphasis on sound research, rigorous methodology, and academic, scholarly work. As scholars and scientists, we felt that it was critical to emphasize the field’s continuing need to build a robust new domain of inquiry and practice. *Information Technologies and International Development (ITID)* shares this focus on rigorous research, which separates it from many other journals on technology and development and which made it the obvious venue for the research presented at the conference. We used a double-blind peer review process to decide which papers would be accepted for presentation at the conference. (Only full papers were considered.) Three program committee members evaluated each paper according to criteria such as relevance, novelty, methodological soundness,

appropriate references to existing work—qualities that we believe to be the foundation of all good research and which are aligned with *ITID*'s goals. The committee consisted of recognized scholars with an established record of strong work in related fields; the strength of the accepted papers and the success of the conference itself ultimately were a result of their efforts.

Second, we hoped that the conference would be multidisciplinary, attracting scholars from various backgrounds with diverse perspectives. Papers were authored and reviewed by those in such fields as anthropology, sociology, computer science, design, electrical engineering, policy analysis, and economics. We sought to have each paper reviewed by one person with close methodological alignment and domain expertise in the area of the paper, another with a somewhat related background, and one reviewer with a different background altogether. Due to the last constraint, at times, anthropologists commented on engineering papers, computer scientists reviewed sociology papers, and economists read design papers. Our intention was not to dilute any given perspective, but to provide authors with feedback from a broader base of understanding.

The conversations that take place between social scientists and technologists frequently are the most interesting to our community. Engineers look for interesting problems to solve, preferably with scalable systems such as new technology. To them, development presents only opportunities for technical ingenuity to triumph over human travails. Meanwhile, social scientists bring a reflective, even skeptical, attitude to these endeavors, seeking to understand the real impact and intent of projects on people, whether those people are the users of technology, the designers of technology, or other groups impacted by the technology. It seems clear that both perspectives are necessary if technology is to truly support development and to do so effectively and responsibly. Bringing differing mindsets together to provide complementary contributions is always a challenge, but it is a challenge that yields rewarding results.

Thus, at the conference, there was active discussion between people of very different backgrounds, and we hope this will continue in the community, even as we establish a common vocabulary for discussion. (Incidentally, this special issue of *ITID* marks the first edition of the journal in which engineering articles appear next to social-science and policy articles—something we hope to see more of in future editions.)

Third, the conference was focused on ICT. Taken literally, “information and communication technologies” could encompass a broad range of things, including newspapers and landline phones. There are, nevertheless, some tacit, soft constraints among those who use the term “ICT” about what exactly it refers to. Personal computers are clearly ICT, but maybe not newspapers, at least in their standard form. And how about a project in which community polls conducted via some electronic means result in articles in local newspapers? In the end, we arrived at “computing devices, technologies for voice and data connectivity, and the Internet,” as a core definition of ICT and added “related technologies” as a hedge to push the hard decisions back on the program committee. While it might be difficult to articulate exactly what technologies count as ICT, we felt we would know them when we saw them!

The conference received 140 full papers for review. Of these, 38 papers were chosen for presentation at the conference—16 for oral presentation and 22 as posters. To select the papers for this special issue, we split the 16 papers chosen for oral presentation into two categories: papers that offered a new application of ICT and those that examined existing ICT projects (it turned out that there were eight in each category). A subset of the program committee—Bernardine Dias, Mahad Ibrahim, Tapan Parikh, Balaji Parthasarathy, and Anna Saxenian—performed a second round of reviews. Committee

members were not asked to review papers with which they had a conflict of interest. The criteria were the same as for the initial round of reviews, but we asked the selection committee to rank the papers in each category. Authors of the selected papers were then asked to address any comments they received from the selection committee and also to ensure that their papers would be relevant and comprehensible to a broad audience. We then accepted the highest-rated eight papers (four from each category) for this special edition, and sent them to the *ITID* editors-in-chief for a final review.

The articles in this issue are as follows:

- Madeline Plauché and Udhya Kumar Nallasamy present a speech–recognition-based system for delivering agriculture information that was designed to address difficulties of adapting speech systems to small, local populations.
- Indrani Medhi, Aman Sagar, and Kentaro Toyama arrive at design principles for text-free user interfaces that would make computer applications more accessible to nonliterate users.
- Kiran Gopakumar Rajalekshmi highlights issues of trust in delivering e-government services through PC-based telecenters and how telecenter operators play a key role in managing these challenges.
- Reuben Abraham examines the evidence for the economic impact of mobile phones in eliminating market inefficiencies in fishing markets in Kerala, India.
- Steve Esselaar, Christoph Stork, Ali Ndiwalana, and Mariama Deen-Swarray perform a broad survey of small and medium enterprises across Africa, focusing in particular on ICT influence on formal and informal business productivity.
- Claire Heffernan and Louise Nielsen consider the value of interactive multimedia versus videos and paper documents for delivering information to livestock keepers.
- Radha Vasudevan follows the effect of computerization and policy making of a government real-estate record-keeping system in Tamil Nadu, India.
- Jacques Panchard, Seshagiri Rao, Prabhakar T. V., Jean-Pierre Hubaux, and H. S. Jamadagni explore the possibilities of using a sensor-network system to monitor soil quality to promote better farming practices for small landholders.

This collection of articles represents the broad span of research activities in ICT and development. It looks at questions of economic value, trust, adaptability of technology, and the relationship between policy and technology. Technologies discussed include PCs, mobile phones, and sensor networks on the hardware side, and challenges with user interfaces, multimedia, and speech recognition on the software side. The papers cover substantive domains such as agriculture, illiteracy, business, and governance, and geographically range from South Asia to Latin America to Africa.

We hope you'll find these papers as informative as the participants of ICTD 2006 did, and we hope to see you at ICTD 2007 in Bangalore!

Very Sincerely,

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ICTD 2006 Conference Co-Chairs