



From the Guest Editors

The Best Papers from ICTD2007

This issue presents the best papers from the 2nd International Conference on Information and Communication Technologies and Development (ICTD2007) held in Bangalore on December 15th and 16th, 2007. Following the enthusiastic reception to the 1st edition of the Conference in Berkeley, California, in May 2006, the Bangalore Conference aimed to further the goal of providing a forum for scholarly work and practice in the field. Toward this end, the Conference solicited papers that were multidisciplinary in scope and reported original research in a scientifically rigorous fashion (see <http://research.microsoft.com/en-us/um/india/events/ictd2007/cfp.htm>).

Responding to the call were 105 papers, which were then subject to a double-blind review process. The process identified 18 papers for oral presentation and 20 for poster presentation. As with the Berkeley Conference, we decided to publish a selection from the papers chosen for oral presentations in *Information Technologies and International Development (ITID)*, which has established itself as the preeminent journal in the field and shares the goals of the ICTD Conference. After the authors of five papers chose to pursue publishing opportunities elsewhere, the rest were put through another round of double-blind review, with a different set of reviewers. Eventually, this resulted in six papers being published in this issue.

While the six papers have undergone extensive scrutiny and revisions before publication here, what else does it mean to say that they are indeed the best papers from ICTD2007? This is worth clarifying since any scholarly conference seeks papers that rigorously report original research, and multidisciplinary work is in vogue even in well-established disciplines. At the ICTD Conferences, the expectation is that papers establish a clear relationship between ICTs and development. But as contemporary ICT-based solutions become increasingly more powerful, affordable and versatile, ICT is no more than a broad and fuzzy term to describe a variety of activities, ranging from issues connected with the technology, to the deployment of technology for information processing in application domains as distinct as design, cartography and medicine. Similarly, development goals and the means to achieve them are disparate and politically contentious, due to which efforts to “bridge the digital divide,” however well-intentioned, often lack analytical clarity and fail to meet their objectives. Consequently, ICTD spans a range of disciplines and attendant methodologies.

To help potential authors come to grips with this intellectual diversity, Kentaro Toyama produced a note (see http://research.microsoft.com/users/toyama/On_Writing ICTDResearchPapers.doc) on the standards against which ICTD papers should be judged. Toyama calls for novelty (including, but not limited to, a new thesis or invention, fresh data, innovative methodology, or first-time evaluations that also encompass negative results); applicability (solving an anticipated problem or question); and empirically grounded research (as opposed to papers that are primarily theoretical or speculative). He also

emphasizes the importance of generalizability, replicability, and verifiability. Toyama's note prompted Jenna Burrell of the University of California, Berkeley, to respond (in an e-mail circulated on September 5, 2008, to the Research Methodologies Planning group mailing list that is supported by the International Development Research Center) with a call for a more interpretive approach to ICTD research, and for an explicit acknowledgment of the specifics of research contexts. In other words, she calls for an interrogation of the contexts in which using ICTs to overcome information asymmetries is meaningful. She also urges that the research characteristics identified by Toyama be broadened to include accuracy of variables and categories (instead of using those that are determined either a priori or exogenously), "thick" description of the factors influencing daily life at a site, and rigor that values multiple methods of arriving at conclusions. Many approaches and issues discussed in this debate are reflected in the papers published here.

The first two papers describe technical solutions to address specific problems. Saif et al. propose a data transfer architecture to facilitate peer-to-peer sharing of content, over dial-up lines and standard modems, to address the problem of limited bandwidth availability afflicting many parts of the world. In a related instance of modifying technology for ease of use, Veeraraghavan et al. critique a kiosk-based model that relies on personal computers (PCs) to supply a range of information services at a sugar cooperative in Warana, India. Although Warana is relatively affluent, and there was state support to create a "wired village," the services were hardly demanded and the PC-based infrastructure proved hard to maintain. With some software development and installation, they demonstrate the feasibility of deploying less expensive and easier-to-use mobile phones to transmit relevant information with SMS text messages.

Two papers highlight how the needs of the underprivileged can be addressed by paying attention to contextual specificities and social practices without necessarily relying on technologies that are either new or expensive. In the domain of education, Pal et al. discuss the various efforts to build low-cost computing devices that have resulted in no more than the "occasionally cheap computer" and limited acceptance. They trace the failure of such efforts to a focus on a single-user model of computer use. From their observations in rural Indian classrooms, they argue that such a usage model is misplaced. They advocate, instead, a shared computing model, not merely to cut down on device costs but also because learning as a group activity is culturally embedded. In the Digital Green project, Gandhi et al. describe an agriculture extension effort that relies on farmers and experts to jointly produce content, and on a human-mediated model for dissemination and training. A noteworthy aspect of the project is that digital technology is mostly limited to widely available consumer electronics equipment. Yet, this effort was able to amplify the reach and effectiveness of the local social networks through which farmers typically learn about new agricultural techniques. This deployment of technology proved more cost-effective than conventional extension systems, partly because it provided locally relevant content as opposed to content produced by experts and broadcast across a wider territory.

The remaining papers point to the challenge of problematizing the digital divide by raising the question of ICTD for whom? Hall et al. explore why, despite low levels of familiarity with English in Nepal, and the availability of Unicode-compliant software, software localization for Nepalese faces barriers. One barrier has to do with the human-computer interfaces, including the lack of standardized keyboards for the Devanagari script, very formally translated menu terms, and the reliance on the older 8-bit true-type fonts by many institutional users. While this barrier may be overcome over time, overcoming another barrier will be harder: learning English is viewed as critical for socioeconomic success, and the use of Nepali software is considered necessary only for those who do not know English. Even within the government, which mandates the use of local languages in its business, key decision

makers continue to use English software because of their educational background and prior training. Thus, the social perception of what matters to get ahead in life triggers network externalities favoring English software. In their study of two state-sponsored telecenter programs in India and Chile, which aim at improving socioeconomic opportunities for the poor, Kuriyan and Kitner describe how the women who use the telecenters are drawn mostly from an “emergent middle class.” Constrained by domestic roles and responsibilities, poor women have neither the time to visit the telecenters, nor do they see any obvious benefits from using ICTs. In contrast, women from the emergent middle class have relatively fewer social constraints; they also perceive the ability to use ICTs as sine qua non for social mobility. Consequently, they use ICTs to either reinforce their class position, or to join the ranks of a “middle class.” This paper shows the limits of thinking about ICT use in terms of women, a biological category. Instead, it is the intersection of the socially constructed categories of class and gender that creates barriers to ICT usage which the targeted beneficiaries find hard to surmount.

We hope that the papers published here stimulate further debate at the ICTD2009 in Doha, and encourage what Michael L. Best and Ernest J. Wilson described in their editorial for Volume 4(1) of this journal as a “‘synthetic scholarship’—scholarship that combines past learnings and grounded practices with novel results and approaches to create a new and complex whole.”

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