



**Association for  
Computing Machinery**

*Advancing Computing as a Science & Profession*

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**CACM REPORTS: HOW INFORMATION SYSTEMS SUSTAIN ECONOMIC RELATIONSHIPS IN  
THE DEVELOPING WORLD**

**January Issue Explores Role of Non-Governmental Organizations in Adopting Information and  
Communications Technology**

**NEW YORK, NY**, January 23, 2009 – Advances in computing and other information and communications technologies (ICTs) have revolutionized the way we create and share information, with implications for medicine, economics, biochemistry, ecology, and astronomy. In its cover story, the January 2009 issue of *Communications of the ACM (CACM)* explores the impact of this trend in the poorest communities, and the role of community groups to meet the global challenge of development. The issue also reports on computational challenges in e-commerce, the legacy of Bill Gates, and news on smartphones, climate research, building reliable distributed systems, and customizing media to displays. *CACM*, the flagship publication of ACM, offers readers access to this generation's most significant leaders and innovators in computing and information technology. It is available online in the new digital format at <http://mags.acm.org/communications/200901/> .

Non-governmental organizations (NGOs) and community-based organizations (CBOs) are a key source of innovation in the developing world. With their local knowledge and relationships, they can envision, implement, and validate new models for rural development. Author Tapan S. Parikh of the University of California, Berkeley cites a number of promising technology developments that support rural NGO and CBO communications needs. He describes two systems built by his students in collaboration with rural organizations to automate existing processes and provide new opportunities for development. Parikh concludes that these advances should be viewed as a tool allowing local change agents to be more effective and accountable in generating and sharing new ideas, implementing and disseminating projects, and measuring their effects.

A Review article assesses the explosion of large-scale e-commerce as companies and individuals use computer networks to conduct increasing amounts of their daily business. Authors Joan Feigenbaum of Yale University, David C. Parkes of Harvard University, and David M. Pennock of Yahoo! Research observe that the design of Internet protocols and services has often been guided by technology rather than economics, while most users are acting in response to rational economic considerations. They conclude that understanding how to align the incentives of participants with systemwide objectives is fundamental to the design of the next generation of Web-scale services, including expertise in the social sciences as well as more traditionally recognized computer science requirements.

A Viewpoints article by Michael Cusumano of MIT assesses the pluses and minuses of Bill Gates and his legacy at Microsoft Corporation, whose products touch nearly all of our lives every day. Despite claims that he was simply “lucky” or that Microsoft succeeded because of its growing market power stemming from DOS and the Windows and Office monopolies, Cusumano concludes that no individual did more to grow the PC software business by bringing inexpensive, powerful software products to the masses.

A News article on future generations of smartphones envisions a new type of device that not only keeps track of your personal data, but can also track your behavior and anticipate your intentions. Alex Wright, an information architect, warns that the greatest challenge to this development may come from users who may begin to feel increasingly uncomfortable with the idea of a smart device that seems to be tracking their daily activities.

Other January *CACM* articles:

- A News essay by science writer and author David Lindley on the multiple scientific issues for climate researchers to expend computer power.
- A Practice section article by Amazon.com’s Werner Vogels on the trade-offs between consistency and availability that are demanded by reliable distributed systems built on a worldwide scale.
- A Research paper by Ariel Shamir of the Interdisciplinary Center in Israel and Shai Avidan of Adobe Systems, Inc. on image and video resizing techniques that take content into account using a technique called seam carving that cuts out or adds pixels to swaths of areas deemed less important.
- An accompanying Technical Perspective by Harry Shum of Microsoft acknowledges the solution proposed

by Shamir and Avidan, but suggests the need for interactive computer vision. He longs for a human that can judiciously add interaction to complement what can be automated.

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**About ACM**

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