

Designing Possible, Probable and Preferable Futures With Mobile Web Technology Advancing Social Development

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Beyond Humans as “Users”

Often when technologists gather in a room to discuss possible strategies to expand the proportion of the world’s population able to access and benefit from the Web, the primary human relationship to the technology is euphemistically referred to as “users.” That is, the current and potential new beneficiaries of Information Communication Technologies (ICT) are considered as passive recipients of the software or hardware technology systems developed by software designers and engineers.

A narrow focus on humans as “users” almost totally ignores the complex sociocultural, environmental, technological, political, and economic “human systems” which frame both the desire and ability of individuals to adopt available ICT tools. To make progress toward the goal of benefiting social development by expanding global access to mobile web technologies, it is essential to consider the complex “human system” questions such as:

- How do differences in the degree to which the local polity and culture allow open political discourse impact the willingness and ability of local persons to utilize network-based communication devices?
- What types of human and business infrastructure will be needed to provide affordable options to maintain and repair deployed mobile technologies?
- Are features of web-based technologies developed for “first-world” consumers directly usable in village cultures where unique tools such as cell phones are considered “community assets” and not private property?
- Is greater access to the Web likely to do more good or more harm to the local economy and to villagers’ cherished cultural values?
- Will the introduction of electric power generation options (such as solar, wind, or foot pedal) of power needed for ICT operation result also in other changes within local communities? Will those changes be primarily positive or negative?

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Even these few questions suggest how truly messy is the relationship between human systems and ICT. Adding to this complexity is the reality that current human systems are constantly changing and evolving in new and often unanticipated ways. By the time a given ICT technology has been developed and significantly adopted, the human system might have changed significantly. It is similar to throwing a ball to a moving receiver: you must throw it to where the receiver WILL be, not where he is.

The question of ***how to make it more probable that mobile web technologies will contribute positively to social development*** is complex, but also of exciting importance to the hundreds of millions of potential beneficiaries around the world. Most important is to not allow excitement over the technology to overshadow the necessity for careful, rigorous analysis of the “human systems” that will ultimately determine frame whether these technologies adopted or rejected, and if adopted, beneficial or harmful to the majority of the world. We therefore advocate a holistic understanding of the overall social and cultural context into which these technologies would be utilized within developing regions, and we here suggest a method to achieve that necessary contextualized, nuanced understanding.

The Sociocultural Context of ICT

The concept that information communication technologies (ICT) are not simply software and hardware systems adopted by passive “users,” but rather are powerful tools applied to human needs within a specific cultural context, is of course not new or revolutionary. For example, the Participatory Design (PD) movement that originated many years ago in Scandinavia, and that harnessed the active participation of industry, academe and civil society in “Human-Computing Interface “(HCI) research, illustrates a broad awareness of the role of culture in shaping how humans choose to interact (or not interact) with ICT.²

Several major players in the development of modern mobile communications technologies (including Intel, Motorola and Microsoft) have for some years employed trained anthropologists to study, document and analyze the role of a local culture in shaping local preferences for, and ways of using ICT. For example, Intel’s Genevieve Bell observed a freshly deployed WiFi network in Cairo that had been designed in combination with specialized mobile handsets to connect all local mosques and create a single city-wide call to prayer.³ Jan Chipchase, a Nokia HCI design specialist, observed in Iran that a particular mobile phone handset was popular because it supported call messaging on the device but not on the network --

² An overview of PD and HCI contributions to ICT “design” provided in Paul Dourish (2006). “Implications for Design”. Proceeding of *CHI 2006*. Montreal, Quebec, Canada.

³ Genevieve Bell complicates the mobile phone. Described by Ethan Zukerman in *My Heart is in Accra*,. Available on line at <http://www.ethanzukerman.com/blog/2007/09/06/geneviene-bell-complicates-the-mobile-phone/>

presumably because of fears of potential government access to message content.⁴ These are just two among many possible examples of the observed role of culture in contextualizing ICT preferences and use.

Because research methods borrowed from sociocultural anthropology and ethnography can help elucidate the cultural context of ICT use, such methods also are clearly relevant to answering the question of what strategies or actions are most likely to result in the deployment of mobile web technologies that will advance true social development. However, to truly answer the question being posed at the June 2-3 2008, São Paulo workshop, a comparative understanding of the extant cultures which contextualize the application of ICT within a developing regions is, in itself, not enough. Social development is, by definition, concerned with a preferred **future** societal condition. Consequently, attempting to design solutions for tomorrow with a reference point of today's human systems will almost certainly miss the mark. Present realities are constantly changing. Needed is the ability to contextualize strategies and actions to what Genevieve Bell and Paul Dourish refer to as "yesterday's tomorrows".⁵

Ethnographic Futures Research

Ethnographic Futures Research (EFR) is a method designed to rigorously investigate alternative futures. It was invented in 1976 by Stanford Professor and EFRsource Co-Founder Robert B. Textor, who has been teaching, adapting, and developing the method ever since.

Because the future does not exist and there are no future facts, it is logically impossible to "study" the future as such. However, people's *perceptions* and images of the future do exist, do have factual status, and can be studied. EFR is a method carefully designed to do just that. EFR systematically explores future possibilities through people's presently held perceptions and visions.

The rationale for holistically studying present-day perceptions of alternative futures is straightforward:

1. Today's future will become tomorrow's present, and EFR helps identify the actions we must take today to ensure that tomorrow is as desirable as possible.
2. If we fail to envision our desired future, we are not likely to take (or even know) the necessary actions needed to achieve it. Indeed, we are likely to end up with a tomorrow that we do not desire.
3. To be successful, most "change strategies" must reconcile with elements of broader systems such as economy, technology, energy, environment, infrastructure, politics, education, social structure, and cultural values.

⁴ Reported by Jan Chipchase in *Future Perfect*. Available on-line at <http://www.janchipchase.com/publications>.

⁵ Genevieve Bell and Paul Dourish (2006). "Yesterday's tomorrows: notes on ubiquitous computing's dominant vision. *Personal and Ubiquitous Computing*. 11:133-143.

EFR as a Tool to Guide ICT Enabled Social Development

The heart of the EFR method, a confidential, one-on-one, interactive, non-directive, semi-structured, open-ended interview which results in members of a community of interest or organization building clear, comprehensive, contextualized and coherent scenarios for the future. This process has proven highly valuable in a number of circumstances where there was a need to understand the implications of anticipated complex cultural, environmental, political, technological and economic human systems before deciding on a strategy to use in taking advantage of an ICT opportunity.

The most extensive of these applications was led by Professor Textor back in 1983. He and several students from Stanford University and the University of Vienna conducted one-on-one EFR interviews with 32 high level government, industry and civil society leaders in Austria, by a “horizon date” of 2005.⁶ The focus of the EFR interviews and resulting analysis was ***anticipated sociocultural effects of the microelectronic revolution***. Interviewees were encouraged to visualize the impacts of this “new” technology on the ***whole*** of the Austrian sociocultural system, including such domains as: non-renewable material and energy resources; environment and ecology; quantity and quality of work and leisure time; physical and mental health; social order, peace, security; freedom and quality of individual choice, interpersonal relationships; ethical standards; aesthetic standards; cultural identity; and education. Most important, the process enabled high-level Austrian leaders to conceptualize paths forward for encouraging national adoption of a potentially revolutionary technology with a better informed understanding of the national sociocultural implications. As the then-future 2005 became the present, the value of this foresight as a decision guide for participating Austrian leadership was substantially validated in a successor volume.

Inspired by this groundbreaking research, more recent applications of EFR have been accomplished for several other challenges involving the anticipated application of ICT for social development. These include: 1) EFR interviews and resulting analysis for 21 civil society, industry and government leaders in Washington state , seeking a path forward that would result in ICT being more effectively applied by NGOs to support solutions to local social and economic challenges; 2) A project involving 15 Central California American Indian tribes seeking a forward-looking approach that would result in the wider and more effective adoption of distance education among tribal communities; 3) Finding common ground among major health care networks with differing visions on how to beneficially advance a fully interconnected telehealth/telemedicine network; and 4) EFR interviews and analysis of 36 higher education leaders enabling them to anticipate implications of the wider adoption of ICT for their desired

⁶ Robert B. Textor, *et.al.* Austria 2005: projected sociocultural effects of the microelectronic revolution. Published in joint English-German version under the sponsorship of the Austrian Association for Futures Policies.. See also the sequel to that book, *The Future of Austria: Opportunities and Dangers in the Age of Nanotechnology*, by Ernst Eugen Veselsky, Robert B. Textor, and others, 2006. The full text for both books is downloadable from the EFRsource website at <http://www.efrsource.com/node/16>

future outreach and engagement function. In all cases, these studies have resulted in a better understanding the possible, probable and preferable ICT outcomes were dependent on understanding and intentional positioning of the technology strategy within the broader context of a complex array of human systems.

Proposal for Workshop Presentation

To our knowledge, EFR has seldom, if ever, been applied to the topic of ***how to make more probable that mobile web technologies will contribute positively to social development***. We are interested in participating in the June 2-3 2008, São Paulo workshop to explore the value of such application and interest from others. If selected as a presenter, and conditional on receiving travel reimbursement, Bill Gillis would represent EFRsource at the workshop.

Our presentation at the workshop would:

1. Provide a conceptual overview of the complex human systems which frame the context for success in achieving desired ICT outcomes.
2. Illustrate examples of how EFR has been applied to identify possible, probable and preferable paths forward with ICT as a tool advancing social development.
3. Begin a workshop conversation of how EFR or similar anticipatory methods could contribute to the successful framing of strategies and actions that would make it more probable that mobile web technologies will contribute positively to true social development.