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From the Editor in Chief

OPEN ACCESS PUBLISHING AS A BRIDGE ACROSS THE DIGITAL DIVIDE

Pertti Saariluoma
Cognitive Science, Department of Computer Science and Information Systems
University of Jyväskylä, Finland

In today's world of snappy catchphrases, the complexity of a phenomenon is often hidden behind the simplicity of the terminology. Take, for instance, the concept of the digital divide. In short, the term means that there is a gap between those people who have effective access to digital technologies (and all the benefits that brings) and those who do not (Organization for Economic Cooperation and Development [OECD], 2001; Selhofer & Hüsing, 2002). While the definition seems simple enough, in fact, there are numerous reasons for the technology gap among people in the world. Typical reasons for the digital divide include material access (i.e., no access to a computer, lack of access to specific software programs or related technologies), usability or usage access (i.e., lack of qualified instruction or environmental issues that limit access, such as an erratic electrical power supply or an underdeveloped Internet infrastructure), or mental access (i.e., a lack of digital experience resulting from disinterest or computer anxiety; Van Dijk & Hacker, 2003). Because the digital divide is such a complex phenomenon, it needs a complex approach to bridging this gap. A multilayered approach to address this multifaceted problem has been proposed by both individuals and organizations (Arunachalam, 2003; Oyebode, 2002; Papin-Ramcharan & Dawe, 2006).

The digital divide creates implications for human development. Throughout the millennia, humans have used varying types of technology to support their economic and social existence. Often, scientific development has underpinned economic growth. Science is the frontrunner of human development, and one of the significant means of addressing human problems in a diversity of areas, such as health, education, social development, technology, and communication, to name a few. It forms the border between what we know now, what we are learning at this moment, and what could be as a result of current learning. The production of new knowledge is built upon prior knowledge (Arunachalam, 2003). No other human institution provides such systematic, practical, and progressive stepping stones to bridge the past

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to the future. Scientific knowledge forms the foundation for new ideas and applications in industry, and thus for economic life.

All peoples, no matter what the economic nature of their society, need the opportunity to access scientific knowledge. For this simple reason, the free flow of knowledge remains essential for development of all societies. In both developed and developing countries, small- and medium-sized enterprises play an enormous economic role, by generating new ideas, designing new products, and addressing the human needs to benefit their own society, and perhaps others as well. Therefore the digital divide is more than simply an academic discussion, but rather a vital issue to allow all peoples to participate in the contemporary information society and global economy.

One major challenge facing many developing countries is that their researchers have very little access to contemporary scientific literature. The majority of research is published in the hundreds of journals that require a subscription fee. The costs of maintaining an adequate library is often out of reach for universities in developing countries, where governments must prioritize the distribution of limited funding to address multiple, equally demanding social needs within the surrounding society (Fourie & Neale-Shutte, 2006; Oyebode, 2002). Yet, even universities in developed countries face similar budgetary constraints, and thus either do not have the funds to subscribe to new journals or need to reduce the number of journals to which they can subscribe (Arunachalam, 2003; Welch, 2002). Limited access results in a limited scope of knowledge.

In addition, the digital divide does not stop just the flow of know-how from more experienced to less experienced researchers; it keeps knowledgeable researchers in developing countries from contributing to their scientific fields. Because many researchers in developing countries face an unreliable electricity supply, poor Internet connections, as well as a lack adequate computer equipment, appropriate software, and even technological expertise (Arunachalam, 2003; Fourie & Neale-Shutte, 2006; Papin-Ramcharan & Dawe, 2006), the opportunities to get their research into the international arena is severely compromised. In addition, some journals—even some open access journals—charge authors a page fee when their article has been accepted for publication, with these funds serving as the financial income for the journal (Papin-Ramcharan & Dawe, 2006). Because of these constraints, not only are researchers in developing countries less able to access research, but they also are less able to contribute papers, participate fully in collaborative research, or receive peer support or acknowledgment as compared to those in more IT-connected countries. As a result, qualified scientists in developing countries can find themselves outsiders in international scientific discussions (Arunachalam, 2003; Langer, Díaz-Olavarrieta, Berdichevsky, & Villar, 2004). This is to the detriment not only of their own research and to their colleagues and local societies, but to all humankind.

Human Technology: An Interdisciplinary Journal on Humans in ICT Environments has, from its very inception, envisioned open access to knowledge and collaboration among multiple disciplines as its key benefits. Funding from the Agora Center at the University of Jyväskylä, Finland, has allowed, so far, articles from around the world to be considered, peer-reviewed, accepted, and published without the need for author-funded page fees and for the content of all articles to be fully available to individuals in higher education and industry no matter what the economic status of a researcher's country**.** We seek to bring the perspectives of multiple disciplines and multiple cultures into dialogue regarding the interplay between

humans and technology. Knowledge is not neutral, and in fact it is culturally based (Volet, 2004). By allowing a free and open forum for many voices and many perspectives on developments in science and technologies—as well as many manifestations of the human experience—all societies benefit. That is *Human Technology*'s focus in the pursuit of science.

Of course, publishing a journal does take financial resources. Therefore all open access journals remain ever challenged in maintaining the necessary funding flow. But we at *Human Technology* know the vital role we play in serving the scientific community, and so we continue to pursue the means it takes to allow researchers, no matter what their financial circumstances, to submit quality articles and engage their peers in the multidisciplinary discussion about the role of humans in the application of technologies.

We can't fully resolve the complexity of the technical, material, and access the issues of the digital divide faced by researchers in developing countries. But we can—and do—address some of the strain by lifting somewhat the burdens of access to quality research and in providing the opportunity for any knowledgeable researcher to contribute to the international discussion. We can bridge two gaps within the digital divide by making quality research available, and in encouraging an international discussion of the essential human element within technological development. Both of these roles are essential to the economic and human development in a globalized world.

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All correspondence should be addressed to:
Pertti Saariluoma
University of Jyväskylä
Cognitive Science, Department of Computer Science and Information Systems
P.O. Box 35
FIN-40014 University of Jyväskylä, FINLAND
psa@it.jyu.fi

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