

## **INTRODUCTION TO ISSUE 7: THE DIGITAL DIVIDE ACROSS COUNTRIES**

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The articles in Issue 7 differ from those in Issue 6 in their specific focus on digital divide *comparisons across* countries. Thus in the first article, Martin and Robinson replicate and extend previous American findings that the diffusion of the Internet is becoming more polarized by family income in the United States. In the second article, Husing and Selhofer make similar international comparisons using a new DIDIX index to summarize their findings across European states. Chen and Wellman make similar comparisons both across and within eight diverse counties in Asia, Europe and America. Spennemann contrasts the even wider differences across 22 states that make up the Pacific Islands. In his attempt to summarize the conflicting and limited research on the digital divide around the world, de Haan presents a comprehensive model to incorporate the important factors affecting the digital divide within a single framework.

Using multiple logistic regression and other odds-based analyses to assess Internet access in the United States from 1998 to 2001, Martin and Robinson's analysis confirms that the odds of access increased most rapidly for individuals at highest family income levels, and most slowly for individuals with the lowest income levels. The unique divide in the U.S. is further evidenced by the lack of such static and dynamic income differences in the U.S. compared with income differences in data from 15 European nations. Moreover, the application of odds-based measures of Internet diffusion is supported by the relative lack of differences in digital divide comparisons by education, age and other demographic variables (besides income) for the U.S.

Husing and Selhofer apply their new DIDIX to benchmark and to track national digital divides within EU member states. Based on the relative diffusion of computers and the Internet in four disadvantaged socio-demographic groups (compared to national averages), the index is intended as a descriptive metric to compare basic levels of inclusion in EU-member states. While it suffers from certain measurement properties, DIDIX is proposed as a

new way to compare the diffusion of technology in at-risk groups with the population average. Results here suggest an increasing North-South gradient of cross-national inclusion prevailing in Europe, and can suggest how more attention should be paid to indexing the various skills and general benefits of IT.

Chen and Wellman discuss how, as telecommunications policies, infrastructures and education are prerequisites for marginalized communities to benefit from IT, high costs, English language dominance, the lack of relevant content, and the lack of technological support are barriers for disadvantaged communities using computers and the Internet. With the proliferation of the Internet in developed countries, the digital divide between North American and developed countries elsewhere may be narrowing, but it remains substantial. The divide also remains substantial within almost all countries, and is widening even as the number and percentage of Internet users increases, as newcomers to the Internet are demographically similar to those already online. People, social groups and nations on the wrong side of the digital divide may be increasingly excluded from knowledge-based societies and economies.

Spennemann then compares the limited diffusion of IT across 22 of the island nations in the Pacific Ocean. By virtue of their physical make-up, their cultural and linguistic diversity, and the relative isolation and spread of their population, Pacific Island countries are faced with a multitude of challenges in the delivery of information services. He argues that the varied but generally high costs of Internet access (in part brought about by national telecommunication monopolies) are exacerbating the digital divide along socio-economic lines; but they also create regional imbalances, with certain countries effectively isolated. Nonetheless, there are examples of how community-based systems can work to offset this. Within these countries at present, no structures are even envisaged that would address digital divides, nor their implications of the technologies for the traditional rank, status and power structures, so fundamental in Polynesian and Micronesian societies.

In the fifth and final article, de Haan attempts to describe and resolve many of the common problems with digital divide research across countries in the context of taking the reader through his multifaceted dynamic model. He first criticizes current research on the digital divide as: 1) being mainly descriptive, 2) starting from a too simple criterion of access and 3) failing to consider the many origins and consequences of differences in IT access. He then outlines his theoretical model in which Internet access is seen as dependent on the user's 1) motivation, 2) possession, 3) digital skills and 4) use patterns, with various causes and consequences of differential IT access being taken into account. Having access to IT is seen as only one factor that produces differences in social, cultural and economic outcomes. These outcomes, in turn, are also influenced by the forces that produce differences in IT access in the first place, as part of a larger pattern of feedback loops. Distinguishing direct from indirect effects using this model becomes an important empirical task. Results from previous empirical research, mainly conducted in the Netherlands, are used to

illustrate parts of the model, but the conclusions seem quite consistent with research findings in other countries, as presented in issues 5, 6 and 7.

A number of years ago, Bernard Berelson (1958) summarized his review of the emerging field of mass media (in the early era of TV) effects thusly:

Some kinds of *communication* on some kinds of *issues*, brought to the attention of some kinds of *people*, under some kinds of *conditions*, have some kinds of *effects*.

While possibly seen as a satirical reference to the vague and often contradictory body of communication research findings at the time, Berelson's summary statement remains a succinct reminder of the need to identify the multiple factors at work in identifying the effects of communication technologies.

In the spirit of Berelson's light-hearted but profound summary of research, then, an updated parallel summary of deHaan's model might read something like:

Some types of *people* in some types of *demographic categories* acquire some types of *information technologies (IT)* in some kinds of *social settings* because they have some kinds of *motivations, skills and experiences* while involved in some kinds of *social networks*, and they *use these technologies* for some *periods of time* to gain some additional kinds of *knowledge or skills* that set them apart from other types of people who do not have access as part of a larger feedback loop of a continuous and repeated process.

In this way, it becomes possible to take into account more of the totality of factors and social processes underlying the digital divide, and that need to be included in future studies of the phenomenon.