

Interface

Technology, Place and Planning: Looking beyond the Hype

The growth and spread of information and communication technologies (ICTs) into seemingly every facet of life has become the watch-word of the age. Technologies, moreover, which have had such symbolic and practical impact that the current phase of history is referred to as the information age or society (see Castells, 1996). However, the diffusion and implications of this group of technologies often appears to be cloaked in mythology. On the one hand is the widely touted view of technology as the 'fixer' of society's ills; an assumption that by embracing ICTs national and local economies will prosper, inequalities both social and economic will be erased and government will be made more democratic and responsive. On the other hand are the dystopian perspectives, pointing to the potential for ICTs to facilitate and further entrench existing inequalities, to precipitate the further disintegration of community ties and even to undermine people's sense of themselves thereby increasing pressure on already stretched health care facilities. The purpose of this issue of *Interface* is to navigate between these perspectives by critically assessing the implications ICTs are having for conceptions of place and community and in so doing raise important concerns for the practice of planning.

Technological change is not of course new. Every age has had to grapple with the consequences of innovatory technologies of one type or another. It is important that ICTs are seen in this context and as such just the latest phase in an on-going process. Much of the discussion and popular debate surrounding 'new' technologies implies a sense of dependency, whether for good or bad. A sense, moreover, that the adoption of a particular technology by an individual, local community or a whole society will inevitably lead to certain pre-ordained outcomes. Technologies are perceived to have a life of their own beyond human influence or interference. The contributors to this *Interface* all reject that assumption. They neither accept the economic determinist position that embracing the latest wave of technology is a pre-condition to economic success nor the technological determinist view that there is a direct correlation between the adoption of a particular technology and the resulting outcomes. They highlight instead the extent to which individuals and societies, policy-makers and planners have choices over the way technologies are utilized and in turn their broader implications.

The articles which follow are all written by researchers with extensive experience of studying the interrelationships between technologies and society. They each search to develop understanding by getting beyond the current array of popular myths which surround the latest wave of technological innovation. Based on leading research in the field they provide insight into current trends in the diffusion of information and communication technologies including not just 'traditional' computer-based systems but also closed-circuit television (CCTV) and mobile phones. The papers then critically assess the implications of these technologies for existing conceptions of 'community' and

'place' and in turn highlight issues and choices confronting planning practice. All the contributors draw on examples from a range of environments to illustrate their discussion. Servon starts by providing an overview of the myths surrounding the diffusion of digital technologies drawing in particular on her experience in the USA. The role of computer-based technologies in creating or destroying place-based community is further examined in Hampton's article which focuses particular attention on the case study of Netville, USA. In contrast, Dabinett explores the implications of ICTs for regional economic planning incorporating useful illustrations from practice in Great Britain. Graham also largely takes Britain as the context in which he examines the rapid and extensive take-up of CCTV. Both Graham and Dabinett issue salutary warnings to practitioners and policy makers not to be naïve, particularly about the exclusionary and divisive potential of technologies. Finally, Kopomaa utilizes his experience from Finland to explore how the widespread diffusion of mobile phones has influenced understanding of the value of community and its relationship to specific places.

All the subsequent comments represent the personal views of the authors and not the organizations for which they work.

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Heather Campbell

Four Myths about the Digital Divide

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The digital divide, or lack of access to IT for certain segments of the population, has garnered significant attention since the mid-1990s in the USA, when the US Department of Commerce National Telecommunications and Information Administration (NTIA) launched its *Falling through the Net* series. Although technology gaps have existed for as long as technology has existed, these reports brought the issue to an international audience. Policy makers, funders, and corporate actors, as well as educators, computer professionals and librarians, began to think seriously about the implications of a society in which certain groups could fully use information technology and other groups could not.

Technology in general, and the Internet in particular, has been enthusiastically embraced as a medium for diminishing spatial, social and political inequalities. People and organizations got to work—wiring schools, building community computer labs and experimenting with Internet voting. Much of this work has been positive. Community-based organizations have begun to employ technology to facilitate their work. Leading edge workforce development organizations have learned to train disadvantaged workers for good, entry-level jobs in IT-related fields. At the same time, prices have decreased, enabling more people to purchase computers. An apparently diminishing technology gap has raised questions regarding whether the digital divide remains an issue worthy

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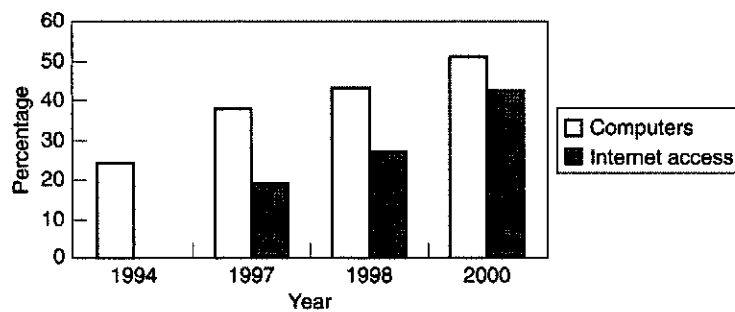


Figure 1. Percentage of US households with computer and internet access. *Source:* US Department of Commerce (2000a).

of public intervention. Indeed, the US programs launched by the Clinton Administration to deal with the digital divide now face major cuts. In addition, the recent economic downturn in the USA has raised questions about whether the digital divide should remain a priority.

In order to address these questions, it is first necessary to take a careful look at the current nature of the problem in the USA. What form does the digital divide take today, and how has it changed? Laying out the present dimensions of the problem is the first purpose of this article. The second purpose is to examine four myths that continue to circulate about technology and the reduction of the digital divide. Debunking these myths allows for a more fine-grained, albeit more complex, understanding of the issues. Such an understanding is key to the crafting of effective policy.

The Current Nature of the Problem in the USA

The digital divide is a dynamic problem (NTIA, 1995, 1998, 1999, 2000). Access to information technology is increasing at a rapid rate. In 1995, 24.1 per cent of US households had a computer. By 1998, PC ownership had increased 51.9 per cent (to 36.6 per cent), while 18.6 per cent of households had Internet access. One year later, 42.1 per cent of households owned computers, and 26.2 per cent had Internet access. By 2000, PC ownership rose to 51 per cent, with 41.5 per cent of households having Internet access. Figure 1 documents the rapid gains in overall penetration rates for computer ownership and Internet connectivity.

Although some groups of people, namely African Americans, Latinos and the disabled, remain persistently and disproportionately on the wrong side of the divide, the gaps between those who have access to IT and those who do not are rapidly closing. Groups that have traditionally been digital have-nots are now making dramatic gains. Gaps between rural and non-rural households and between seniors and younger people have begun to narrow. Some divides, such as that between women and men, have disappeared altogether.

Yet the larger problem persists. Deep divides remain between those who possess the resources, education and skills to reap the benefits from the technology and those who do not. Persistent gaps remain between different racial and ethnic groups, people with and without disabilities, single and dual parent families, the old and the young, and people with different levels of income and education. Low-income persons and minorities, particularly when they reside in inner cities, are among the groups being left behind. In reality, it is inappropriate to think about a single digital divide. The varying

Table 1. Dimensions of the digital divide

	Households with computers (August 2000) (%)	Individuals with Internet (November 2001) (%)
General population	51.0	57.6
Gender		
Male	Not available	58.2
Female		57.1
Geography		
Urban	51.5	58.2
Central city	46.3	62.5*
Rural	49.6	47.5
Income**		
Under \$15 000	19.2	12.7
\$15 000–24 999	30.1	21.3
\$25 000–34 999	44.6	34.0
\$35 000–49 999	58.6	46.2
\$50 000–74 999	73.2	60.9
\$75 000 +	86.3	77.7
Education		
Less than high school	18.2	25.9
High school	39.6	48.4
Some college	60.3	63.8
Bachelor's degree	74	63.4***
Postgraduate	79	
Race		
White	55.7	46.1
Black	32.6	23.5
Asian Amer/Pacific Islander	65.6	56.8
Hispanic	33.7	23.6

Notes: * Pew uses the term 'suburban'.**Computer and internet data for income all come from Department of Commerce, 2000a. ***Pew groups college grad and post-college together.

Sources: Computer data from US Department of Commerce (2000a); Internet data from Pew Internet and American Life Project, unpublished.

rates at which certain groups have obtained access to IT makes it more appropriate to conceive of a range of divides. Table 1 illustrates these remaining digital divides.

Internationally, high income OECD countries account for over three-quarters of the world's Internet users (United Nations Development Programme, 2001). In virtually all countries, Internet users tend to be young, urban, male and relatively well-educated and wealthy. In short, the diffusion of technology both within and between countries has been extremely uneven. Current and historical patterns of access to information technologies (IT) illustrate a significant separation between information 'haves' and information 'have-nots' along lines of race, socio-economic status, education level, household type and geographic location.

The Myths

The following misconceptions about the digital divide, and about the potential of technology, arose in the early stages of awareness about this issue. Seven years after the first NTIA report we now know more. Debunking these myths is critical to the formation of appropriate policy.

Myth 1. Providing Access to Computers and the Internet Will Eliminate the Digital Divide

The digital divide has been defined narrowly as a problem of access to IT. However, when people are provided with computers, it is found that not much changes. If the digital divide is not simply a problem of access, what is the appropriate definition? Clearly people need the basic IT tools—computers and Internet access—at their disposal, but access is only the first component.

The digital divide is comprised of three interrelated components: access, training and content. Access is a necessary precondition but then engenders a need for training in order to use the tools. Once people have facility with the tools, they demand content that serves their interests and meets their needs (Lazarus & Mora, 2000). Policy that focuses primarily on access leaves a large part of the problem unaddressed.

When a worker or a student has access to a computer, she still may not be benefiting fully from the information society. It is now imperative that we look beyond gaps in access and ask a broader and deeper set of questions. Why is it that some groups have obtained access more quickly than others, even when there is control for variables such as education and income? Who controls the content of the Internet? How can the kind of training needed to move disadvantaged workers into available IT jobs be best provided? How can new curricula be delivered through all of our schools that incorporates the kinds of learning and skills needed to thrive in the information age? Children in poorer school districts tend to use computers and the Internet for less sophisticated applications than do children in wealthier districts (Becker, 2000). Those who use computers and the Internet for lower-order tasks, such as word processing, do not benefit from the information society in the same way as those who use IT for higher order tasks, such as analyzing information and design.

Myth 2. Technology Can Solve Social Problems

Weinberg coined the term 'tech-fix' in 1966 to describe the myth that technology is primarily a problem solver. Although the potential of IT to create opportunities for disadvantaged groups must be pursued aggressively, there must also be a pragmatic assessment about what it can and cannot do. Technology alone will not level deep-seated historical inequalities. Despite claims that new technology can operate as a 'social leveler' (Pitroda, 1993) with the capacity to "erode the relative power of all kinds of hierarchies structured on the control of information," (Builder, 1993) significant intervention into the design and deployment of this technology will be required if any of its equalizing tendencies are to be realized. Technology, then, is one tool, not 'the' answer. Deployed wisely, it can significantly advance important human development goals. Without support to make it equally available, and without integrating it into a more comprehensive solution, it will likely aggravate existing inequalities (Rogers, 1995). In order to realize its potential, IT must be combined with other first order resources (such as food and housing) and second order resources (such as economic literacy and education) to build ladders out of persistent poverty.

Myth 3. On-line Communication Diminishes the Need for Face-to-face Contact

Research at community technology centres shows that virtual and face-to-face activities are mutually reinforcing. Technology does not replace interaction that occurs in physical space. The Internet has not collapsed distance. 'Techno-savvy' community-based organi-

zations that are most successful use technology to supplement and extend the face-to-face work they are already doing. The computing activity that occurs creates positive externalities by initiating new relationships between people who were not previously connected. These connections expand individuals' sets of 'weak ties' (see Granovetter, 1973) in low-income communities. These new ties operate as a form of bridging social capital, helping people to form relationships that provide access to the kind of resources needed to exit poverty (Gittel & Vidal, 1998). (These issues are examined further in Hampton's article which follows.)

Myth 4. IT Levels Spatial Inequalities

The Internet has been touted as a medium with the capability of collapsing distance and eliminating spatial inequalities. It is becoming apparent, however, that IT is profoundly rooted in geography (Graham & Marvin, 2001). Investment in advanced telecommunications infrastructure is much lower in poor urban areas and rural regions than it is in wealthier areas. Wealthier urban and suburban neighbourhoods are typically wired and upgraded before inner city and rural areas. This inequitable provision of infrastructure is a form of market failure; private companies will invest in infrastructure in areas where they are most likely to yield the highest returns on investment. Although it may be unprofitable to invest in the infrastructure of low-income areas, failure to serve these other areas creates an inequitable situation that warrants government intervention.

Examining the spatial aspect of this issue, on a global scale, Markusen (1999) finds a set of privileged global cities, which she calls "sticky spaces", in which intense clustering of Internet activity exists. She contrasts these sticky spaces of production with slippery places that have largely failed to attract and maintain information industries. These sticky spaces drive the information industries. Within metropolitan regions, a similar sticky/slippery spottiness exists on the consumption side (see article by Dabinett which follows). In short, the same places that are characterized by economic poverty also tend to suffer from information poverty; a pattern has developed in which inequalities in physical and electronic spaces mutually reinforce one another. Although IT can be used to lessen geographic inequality, for example, through distance learning, technology will not accomplish this function on its own.

Conclusions

The technology gap is only one link in a causal chain that has bound certain groups repeatedly to disadvantage. The digital divide is, therefore, a symptom of a much larger and more complex problem—the problem of persistent poverty and inequality. Widespread access to and use of technology will not solve these larger problems, but it can help to show the way out. Used wisely, technology provides new ways to address this problem. To have any significant effect, however, technology must be enabled by effective public policy in co-operation with concerted efforts by the private and voluntary sectors.

The point is not that technology is the answer, but that it is one of many critical resources. Without it, the persistent poor will have one more obstacle to overcome in order to compete for jobs and for policy that reflects their needs and desires. IT tools enable greater civic participation, provide a key to better-paying jobs, and create the conditions for more engaging communication and the formation of networks. However,

if low-income populations are to benefit at all from the emergent information revolution, they must first participate in it (Sanyal & Schön, 1999). Technology is a tool that has the potential to provide people with skills and information that they can use to move beyond a focus on day-to-day survival. But it is the means, not the end. Without creative and purposive application, it accomplishes little.

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