

THE INTERNET AND SUSTAINABLE DEVELOPMENT

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Summary

Informatization is the process through which the new communication technologies are used as a means for furthering socioeconomic development, as a nation increasingly becomes an information society. Informatization is often accompanied by processes of globalization and privatization, as free-market competition increases on a worldwide basis (with the exception of certain nations). In recent years, informatization has provided an alternative to previous strategies of development communication as an important means of social change. Development through the process of informatization may be sustainable, because its sources of funding and other resources are institutionalized. Thus, development by informatization fits with such other worldwide processes as globalization and privatization. Use of the Internet may contribute to sustainable development by substituting for personal travel, thus saving energy.

India is an example of the informatization process, as the New Economic Policy of 1991 opened the nation's borders to global competition and encouraged the privatization of state owned institutions, which became private businesses. Several high-technology cities, like Bangalore and Hyderabad, helped India become a major player in the worldwide computer software industry. The privatization of Indian television during the 1990s promoted consumerism, capitalism, and other Western values.

One result of informatization is a growing digital divide between the majority of a nation's population versus urban, elite individuals who have access to the Internet and other new interactive technologies. The digital divide may be bridged by public access computers in cyber cafes and telecenters. India's and Singapore's roads to informatization are analyzed.

1. Introduction

As the world enters a new millennium, it may be an appropriate time to take stock of a relatively new and different approach to communication and social change that began to arise in the 1990s with the diffusion of the Internet. Underlying this new era are the new interactive communication technologies that facilitate informatization and globalization, and that are often accompanied by greater privatization.

This essay describes the informatization strategy of development that has been pursued by certain nations in recent decades, and analyzes its prospects for sustainability. The case of India in the past decade is discussed as an example of the rapid social changes that occur as the result of the new interactive technologies centering on the Internet. It appears that informatization, accompanied by globalization and privatization, has the potential for bringing about social and economic development. Unfortunately, informatization often results in greater socioeconomic inequality in a society due to differential access to computers and other information technologies. This digital divide may eventually be overcome, or at least moderated, by public computers, which allow access to the Internet. Such access may be provided by telecenters and/or by privately owned cyber cafes.

2. Development and Sustainability

Development is defined as a widely participatory process of social change in a society, intended to bring about both social and material advancement, including greater equality, freedom, and other valued qualities, for the majority of people through their gaining greater control over the environment.

Scholarly study of development began in the post World War II era, when former European colonies in Asia, the Middle East, and Africa gained their independence. The new national governments placed a high priority on economic growth and social development; international aid agencies, including those of the United Nations, sought to help national governments in furthering the development process. One key to encouraging development, it was thought, was through development communication in order to improve health and nutrition, promote family planning, encourage literacy, and boost agricultural production. The 1960s and 1970s conception of development communication rested in part on the expanding audiences in Latin American, Africa, and Asia for radio and, later, for television broadcasting. These broadcasting technologies were seen as important channels for development communication messages. Considerable research was conducted on the effects of radio-based and television-based development communication programs. By 2000, about one-third of the population of Latin America, Africa, and Asia was reached by television, and

approximately two-thirds were reached by radio, although much of the media content was entertainment oriented, rather than dealing with development.

Today, the newer communication technologies of the Internet are conceptualized as a different kind of development tool, in that the design, manufacturing, and sale of computer software and hardware for Internet-related e-commerce and other applications represents an important type of economic growth in itself. Now, the communication technologies are not just a set of channels for development, but also one type of development itself.

Sustainability is defined as the ability of a system to maintain its rate of development and social change over time. In the early decades of development programs (and their study), sustainability was not given much attention. However, many of the early development projects and programs ended when the initial funding ended, and when external expertise was withdrawn. The long-term consequences of certain development programs were injurious to the environment. These problems led to increased attention to sustainable development, which could be maintained over time without harming the long-term natural resources or population of a system.

One of the questions pursued in the present essay is whether the informatization strategy of development is more or less sustainable than previous conceptions of development. Because informatization is driven mainly by profits earned by private corporations (although perhaps aided by government policies), the eventual withdrawal of external funding and/or expertise usually does not pose a threat to sustainability. Further, experience shows that interactive communication can substitute for personal travel in certain cases, thus saving energy. High-technology economic development in general has relatively low requirements for energy resources, at least in comparison with industrial development.

3. Informatization

Informatization is defined as the process through which the new communication technologies are used as a means for furthering socioeconomic development, as a nation becomes an information society. This strategy of informatization is often accompanied by free-market capitalism, privatization, and globalization in today's world.

The concept of informatization was coined in Japan in the late 1960s as "johoka." It described the process of social change through which a nation moved to become an information society ("*joho shakai*"). An information society is one in which information workers are more numerous than such occupational categories as farmers, industrial workers, or service workers. Information workers are individuals whose main job responsibilities are to gather, process, or distribute information, or to produce information technologies like computers and telecommunications equipment that are used by other information workers. Typical information workers are computer programmers, teachers, journalists, and managers. In such nations as the United States, Germany, and Japan, at least two-thirds of the workforce have become information workers. (See chapter *The Information Economy and the Internet*)

Information is patterned matter–energy that affects the choices available to an individual making a decision. In an information society, information is the vital ingredient, as energy was in the industrial society and as manual labor was in the agricultural society. The computer is to the information society what the steam engine was to the industrial society.

The concept of informatization implies that a nation could move over time to higher levels of informatization, becoming more and more of an information society. This understanding implied that the process of informatization could be operationalized as a variable or index. The first research to measure the degree of informatization was carried out by Japanese scholars in Tokyo’s Research Institute of Telecommunications and Economics (RITE), who calculated information related expenses as a proportion of total household expenses. Other, less complicated, indicators of informatization have been developed by various scholars. For example, several scholars have created a composite index that scores nations on such items as (a) formal education, (b) media exposure and the penetration of telephones and computers, and (c) the percentage of information workers in the total economy. Today, a composite measure of informatization would certainly include the degree of use of the Internet as a main indicator.

In the past, the unit of analysis in most informatization studies was the nation, presumably because most data about this process were available on a national basis. However, the informatization process is not uniformly distributed within a nation, as certain cities or regions are more advanced in informatization. For instance, recent studies have investigated metropolitan regions in the United States, and the Bangalore and Hyderabad technopolises in India. Looking at such leading sectors in the informatization process may allow a more fine-grained understanding of this process than only studying nations as units of analysis can. In fact, the study of technopolises, discussed later, provides one means of understanding the future society of tomorrow by looking at such advanced systems today.

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Biographical Sketch

Everett M. Rogers is Regents' Professor, Department of Communication and Journalism, University of New Mexico. He is known for his book, *Diffusion of Innovations* (New York, Free Press), published in its fourth edition in 1995. Rogers has conducted research on the role of communication in development in Colombia, Brazil, India, Nigeria, Korea, and Tanzania since 1964.

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