The Digital Advance:
More than half the world's people have never made a phone call. Will ICTs assure us change?

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Viewpoint
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Digital Information-Communication Technologies (ICTs) promise the world a "new civilization", an "information revolution" or a "knowledge society". Once ICTs have realized worldwide access for all to information, new social values will evolve, new social relations will develop, the "zero sum society" comes to a definite end. According to the digital utopists, ICTs will create more productivity and improved chances for employment. They will upgrade the quality of work in many occupations and offer myriad opportunities for small-scale, independent and decentralized forms of production. Poor countries that are still in the agricultural age can now leap-frog into a post-industrial society, bypassing all the trouble of the industrial revolution.

The utopists also predict that ICTs will strongly reinforce current processes of democratization in many countries. The increased access to information flows will undermine official censorship and empower movements in civil society. And they disagree with those who worry about scenarios of worldwide cultural homogenization; they see the emergence of new and creative lifestyles, vastly extended opportunities for different cultures to meet and understand each other.

They foresee the creation of new virtual communities 1 that easily cross all the traditional borderlines of age, gender, race and religion. And it is obviously true that ICTs can perform tasks that are indeed essential to democratic and sustainable social development. They can provide low-cost, high speed, worldwide interactive communications among large numbers of people, unprecedented access to information sources, alternative channels for information Provision that counter the commercial news channels, and can support networking, lobbying and mobilizing

Educational facilities can be improved, using ICTs to facilitate Stance learning and on-line library access. Electronic networking has also been used in the improvement of the quality of health services, since ICTs permit remote access to the best diagnostic and healing practices and, in the process, cut costs. Digital technologies for remote sensing can provide early warning to sites vulnerable to seismic disturbances and can identify suitable land for crop cultivation. In addition, computer technology can assist in the development of flexible, decentralize, small-scale industrial production, thus improving

the competitive position of local manufacturing and service industries. In a number of countries-Singapore, Brazil, Hong Kong-the introduction of computer-aided manufacturing technologies in small-scale industries has been very successful.

There is also an environmental advantage in such developments. As the World Commission on Environment and Development noted in its report, Our Common Future, decentralization of industry reduces levels of pollution and other negative impacts on the local environment. Another important digital advantage is the relative ease with which new public spaces can be created in cyberspace. Through digital networks, new global communities are being established. Increasingly, organizations in developing countries are integrated into these webs of horizontal, non-hierarchical exchange that have already proved themselves able to counter censorship and disinformation. Members of ecological movements and women's organisations, human rights activists, senior citizens and many other groups have made impressive use of digital technology.

The growing ICT demand in developing countries finds expression in long waiting-lists for telephone connections, growing use of cellular systems and expanding numbers of Internet users. To meet this demand, consideration of ICTs is increasingly becoming an integral part of national development agendas. In fact, there is currently a phone frenzy in the developing world.

The planned increase in telephone lines within the Third World for the next five years will require some $200 billion in investments. This is expected to be achieved largely through a massive inflow of foreign capital. And to encourage the later, countries are deregulating and opening their markets for equipment manufacturers and service providers.

The realization of the digital advantage that ICTs can offer requires, however, that some serious problems are addressed. Access to the digital advantage requires access to electricity. A serious problem is that in many rural areas energy is unavailable or very limited in supply. In many urban areas, the provision of electricity is highly unreliable. With an expanding use of ICTs, energy requirements will only increase and will require planning and budgeting for electrification and such alternative energy sources as solar power. (Our photograph with this article shows the geothermal power plant at Ahuchapan, El Salvador.)

The extent of telecommunication grids is very limited in most of the developing countries. There are 1 billion telephones in the world and the 48 least developed countries have some 1.5 million of them. Some 15 per cent of the world's population has access to over 70 per cent of the world's telephone lines. More than 50 per cent of the world's people have never made a phone call. The costs of providing adequate telecom infrastructures are considerable and cannot be met by national budgets alone.

Is the international community ready to provide the massive investments needed for the expansion of networks in developing countries? By way of illustration, it would take some $12 billion to get 50 per cent of the Philippine population on the Internet. To

increase teledensity from 0.46 lines per 100 inhabitants to 1 per 100 in Sub-Saharan Africa would require an investment of some $8 billion. Investments are also needed for the digital upgrading of most of the analog, copper-wired networks in developing countries.

In response to the challenge of the info-telecom gap, many public and private donor institutions — including the World Bank, the International Telecommunication Union, the Teledesic Corporation, AT&T, Siemens, Alcatel, and the United States Agency for International Development — have designed initiatives to provide telecom connections to Third World counties. Apart from the question of whether there will be sufficient funding for all these plans, they also raise the critical issue of the appropriateness of the technologies transferred and the capacity of the recipient countries to master them.

Throughout the past decades, the prevailing international policies on transfer of technology have erected formidable obstacles to the reduction of North-South gaps. And there is no indication that the current restrictive business practices, the constraints on the ownership of knowledge, and the rules on intellectual property rights that are adverse to developing country interests are radically changing, nor the relations between the ICT-rich and ICT-poor countries. When energy and telecom infrastructures are in place, there are still the costs of actual usage of ICTs to address. In order to meet these expenses, taxation and subsidization strategies are needed that allow individuals and institutions to access digital networks.

The effective operation of ICTs also requires a whole range of skills and adequate mechanisms for training in these skills. Technical skills are needed for the maintenance of hardware, the modification of software and the manufacture of electronic goods. Managerial skills are essential to the operation of networks, information systems and databases.

And, of course, information skills are crucial to the processing of all the information made available through the ICTs. This needs planning and funding of extensive educational programmes. It also needs to be realised that national efforts to attain the digital benefits are part of a global environment. Scope and direction of national ICT-strategies are strongly influenced by the emerging global system of governance for the information-communication sector. The bottom line of this system proposes that the deployment of ICTs should predominantly, if not totally, be a matter of market relations. Global policy making addresses primarily the removal of all obstacles that might stand in the way of the unhindered operation of the major ICT investors on markets around the world.

A landmark in deregulatory policies is the World Trade Organization's telecom agreement of early 1997. The agreement requires signatory countries (68 countries that represent 98 per cent of the $600 billion telecom trade) to liberalize their markets to foreign competition. The agreement has seriously compromised the chances for universal network access as national policies may be considered anti-competitive if Governments intervene in the market to guarantee universal service.

In the present system of global governance, the interests of industrial countries and transnational corporations are usually better served than the prospects for developing countries. A more adequate representation of all the parties affected by global governance needs to be attained if ICT advantages are to be equitably shared.

The most immediate challenge for national governments and the international community is the insight that the use of ICTs for sustainable development will not be determined by technological developments, but by political decisions. The realization of the digital advantage requires creative styles of governance that are not merely inspired by visions of digital benefits, but also address the serious obstacles which hinder attaining the digital advantage.

For national governments and the international community, this implies the design of policies that leave the realization of ICT-potential not exclusively to market interests, a substantial allocation of public funding for the costs of accessing and using ICTs, and a massive effort in human resource training for the mastery of ICT-related skills.

It would seem appropriate — in the context of the fiftieth anniversary of the Universal Declaration of Human Rights — to emphasize that the deployment of ICTs should be primarily guided by respect for such universal standards as human security, autonomy and equality. The most perplexing question ICT strategists may face is whether such people-centred ideals can be achieved in a global order that is increasingly directed by market-centred realities.

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