<table>
<thead>
<tr>
<th>Title</th>
<th>The social impact of new communications technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>Orville, Hans d'</td>
</tr>
<tr>
<td>Date</td>
<td>1997</td>
</tr>
<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/10220/3016">http://hdl.handle.net/10220/3016</a></td>
</tr>
<tr>
<td>Rights</td>
<td></td>
</tr>
</tbody>
</table>
THE SOCIAL IMPACT OF NEW COMMUNICATIONS TECHNOLOGIES

Statement by Dr. Hans d'Orville
Director, IT for Development Programme
United Nations Development Programme, New York

Information and communications technologies (ICT) - new motor of the world economy

Information and knowledge play an increasingly important role in economic and social development (with the information sector growing twice as fast as the world economy as a whole), matching or even overtaking the role of resources like land, energy, metals and even human labor. A recent study found that the computer software business has risen to become the third-largest manufacturing industry in the United States, paying wages twice the national average. In 1996, the industry generated revenues of US$ 102.8 billion and has grown at a rate of 12.5 per cent annually, nearly 2.5 times faster than the economy as a whole (see New York Times, 3 June 1997). Similar trends, if not at the same absolute levels, may hold true for many other countries in the North and South. Certainly, many Governments are beginning to recognize the pivotal role of the software and content industry and have assigned their promotion a central place in their technology policies, as we heard the Acting Prime Minister of Malaysia say at the opening.

In a globalised setting, information and knowledge affect qualitatively the international division of labor, determine the competitiveness of corporations and national economies and generate new growth patterns and paradigms. The introduction and use of ICTs has thus become a societal imperative worldwide.

This trend is underpinned by a steadily expanding global information infrastructure, fostering the emergence of a global (interactive) information society and of virtual economies with novel features such as teletrade, telework, teleservices, teletraining, telebanking, telemedicine, distance learning.

Over the past five years, relentless advances and technological innovations - coupled with dramatic price reductions - have brought about a new versatility in ICTs facilitating access by ever wider segments of society.
ICTs comprise a variety of converging multimedia options - ranging from radio over television to personal computers, CD-ROMs and the Internet, where many options converge. By itself, the Internet has brought about a dramatic paradigm shift: once connectivity is established, information on any subject is made available on electronic network nodes and can be downloaded by anybody who needs it, when and wherever required.

Many of the multimedia options - and especially so the Internet - depend on the availability of reliable powerful telecommunications connections with a sufficient bandwidth - as well as access to electricity, which often times is another limiting factor. Considerable investment has helped to link most developing countries to international networks, albeit in most cases only their capital cities. Thus far, connectivity invariably bypasses the rural areas, where the incidence of poverty is highest.

ICTs allow

- information flows across geographic communities, social classes, economic sectors and political boundaries;
- networking of hitherto unknown ease and speed and with a hitherto unknown geographical penetration of un- and underserviced areas and population groups;
- to enhance the scope, scale and quality of existing services to both rural and urban areas;
- the emergence and formation of global virtual/digital communities created for the pursuit of limited objectives - nationally, regionally and globally - leading to the formation of more identities, commonalities, and purpose of community effort, depending paradoxically on the effort and initiative of the individual;
- the conduct of virtual conferences to replace, complement, enhance and prepare traditional international conferences leading to a new type of transparent, participatory global diplomacy and societal interaction.

The social dimensions of ICTs

The practice of any technology inevitably has social consequences. ICTs have a dual social dimension and significance, as yet little explored and discussed:

* the production of IT hardware and software has direct and indirect employment, livelihood and welfare effects;

* ICTs can serve the objectives of sustainable human development and poverty alleviation, e.g. through improved
access to health care, reduction of illiteracy, livelihood formation, novel and participatory governance mechanisms, the innovative use in decision-making processes (viz. electronic democracy), the promotion of micro-entreprises, the empowerment of women's, indigenous and disadvantaged groups, the harmonisation of trade union strategies in a globalising economy, the sustainable use, distribution and management of natural resources and the environment, and a myriad of other socio-economic applications (see appendix for some more detailed project descriptions).

Creating livelihoods, employment and trade benefits

For the first time in decades, ICTs and, in particular, the Internet, hold the promise of substantial livelihood and employment gains, coupled with improvements in the terms of trade for developing countries. They stem from

- expanding manufacturing capacity for certain IT products either by multinationals or by local entrepreneurs, which create directly jobs (Asia has considerable experience with this model in various stages of sophistication);
- the setting-up of virtual companies with around the clock operations, generating new high-value jobs in design, research and other areas hitherto beyond the scope of developing countries;
- a transfer and outsourcing of well-defined functions by airlines, banks, accounting firms, insurance companies and other service industries bring about immediate job gains (often at the expense of industrialised countries);
- an increasing demand for IT content, adaptation and software production, responsive to local languages and culture, which opens up new entrepreneurial and employment opportunities as do the proliferating numbers of Internet service providers (ISP) and technical servicing and maintenance requirements.

ICTs also reinforce opportunities for global sourcing and global marketing of products, rendering traditional middlemen unnecessary. For example, the Philippines has developed a mango information network tracking price developments and trading opportunities, which is accessible from the village level.

Dedicated IT reserves with state-of-the-art infrastructure and supportive legislation, such as Malaysia's multimedia supercorridor (MSC) can provide a powerful enabling environment to attract investment, induce technology transfer and realise employment and trade benefits. The emergence of a globally competitive IT labor market has brought about a higher level of employment and pay for many (skilled) workers in developing
nations, while allowing multinational corporations to contain and even reduce their overall labor costs.

To be sure, formidable obstacles and drawbacks remain. Domestic tariffs on IT products are often prohibitive—reflecting both the desire to raise public revenue and considerations of domestic trade-offs regarding the "proper" use of scarce resources. The political process is not infrequently torn between a decision to import versus to allocate resources to alternative purposes, such as water or food. In many instances, however, these may be false and short-sighted options, ignoring the vast social and societal benefits of ICTs.

ICTs and the path to empowerment, transparency and accountability

If knowledge defines the process of appropriating and applying information and data, communication denotes the process of sharing information and knowledge. Information/data-knowledge-communication thus constitute a continuum. ICTs, for their part, represent systems of knowledge necessitating new procedures and new mindsets. As ubiquitous and versatile mechanisms and tools, ICTs can promote awareness about and the solution of a broad range of global issues and problems, advancing sustainable human development (SHD). But ICTs can fulfil also rather mundane needs for communications and interaction—through chat rooms, discussion groups and similar arrangements. The crucial criterion is that all efforts must yield tangible, positive results and show an ascending acceptance among the population at large.

The major socio-economic problems listed earlier can only be solved in an environment of empowered (i.e. informed) citizens and in an environment which empowers citizens and civil society. The creative power of society as a whole and at all levels must be tapped and released—infrastructure permitting. Information, knowledge and communication are key for empowerment, transparency and accountability. An ignorant society is a pliable instrument in the hands, and at the mercy, of unscrupulous and unaccountable leaders.

Participation is another key dimension. It has to do with access to and distribution of information in a society and among societies for diverse purposes (advocacy, control, publicity, fundraising). The growing involvement of NGOs in such type of activities highlights a major shift. NGOs increasingly become providers and purveyors of information and assume the role of networking managers, rather than continuing their traditional roles as providers of goods and services.
Towards new societal intermediaries

ICTs offer modalities and approaches that are
- more participatory
- more pluralistic
- more equitable
- of better quality
- more cost-effective
- geographically more penetrating, with a wider reach out than traditional means underpinning social development and participatory policies. They may result in
- the empowerment of different societal and gender groups,
- a strengthening of civil society and its constituent elements,
- networking and enhanced communication,
- advocacy,
- enhancing the vitality of the democratic process,
- strengthening governance mechanisms,
- enforcement of accountability.

At the district and village level, the benefits of ICTs could best be captured through the establishment of community centres with telephone links and other ICT equipment providing connectivity - potentially offering a range of social services. South Africa has acquired some initial experience in that regard and similar moves are under way in Bangladesh through the new cellular Grameen Telcom system, which will offer services and communication possibilities beyond the microcredit objectives of Grameen as a whole.

Globally, we are witnessing a decline of traditional countervailing and mediating powers, such as political parties, trade unions, independent media etc.. Societal disintermediation is becoming a reality in many parts of the world. The introduction of ICTs is giving rise to a new layer of intermediary organizations, such as NGOs - buttressing non-proximate, interactive participation over large geographic areas. Indeed, ICTs and the Internet have created a new paradigm for societal interaction with their ability to forge new intermediary forces and countervailing powers within and among societies. Being essentially an anarchic, open and participatory system operating on the basis of agreed technical standards and protocols, the Internet as such is free from control by any government or corporation, although control and dominance may gradually become feasible in connexion with on-line services and certain software packages.
But the social impact of ICTs transcends development per se. There are also applications and consequences in the field of human rights monitoring, sensitizing, coalition building, instant multiplying capacity.

ICTs and the free flow of information

The free flow of information is a precondition not only for independent media, but more generally for a society committed to empowerment-transparency-accountability, in which non-governmental and community-based organisations (NGOs/CBOs) play key roles. A free flow of information and access to it and to knowledge helps to create a more stable, resilient, assertive, knowledgeable, productive, responsive and vigilant civil society.

In many quarters, the right to (universal access to) information has come to be seen as a new type of human right - in the same vein as the rights to education, development, clean environment etc. enunciated over the past years by international organizations such as the UN or UNESCO. But, to be sure, they are unlikely to acquire the same standing as the rights codified in the 1948 Universal Declaration of Human Rights. Rather, they constitute political constructs, highlighting societal shifts and newly emerging concerns of the world community. In the age of globalization, it is no accident that these new constructs almost exclusively relate to new social and economic dimensions of life.

Yet, individual nations or groups may very well seek to formulate Information Bills of Rights and Responsibilities (viz. the work done by the Aspen Institute) responding to the new challenges and features of the digital age. And selectively, they may well lead to a set of international cyberlaws, complemented by an international court proposed by Malaysian Prime Minister Mahathir to adjudicate IT-related disputes and cases.

But the right to information and the free flow of information remain abstract concepts lest they are connected with policies

- creating awareness, new visions and understanding about the ramifications and implications of the information society;
- promoting capacity building - in terms of institutions and individuals to facilitate access and effective;
- offering training and skills formation - technical, managerial, impactwise;
- building up of infrastructure and connectivity - so as to ensure the widest possible access to the new (re)sources at affordable cost;
- encouraging local content creation and applications, beyond the mere technical (pipe) connectivity;
- demonstrating the feasibility, suitability and relevance of ICTs for SHD and poverty alleviation.

The United Nations Development Programme (UNDP) has undertaken action in all these areas. It has been particularly successful with capacity building, tying in with technical connectivity. Since 1992, UNDP's Sustainable Development Networking Programme (SDNP) has helped to create the conditions and capacity for empowering civil society in developing countries to access and utilise the new opportunities provided by the Internet and other communications links. More than 30 countries have already benefitted from such support and it is poised to expand its outreach and coverage further. Thus, the voice of the people and their involvement is being strengthened.

Other tools and approaches can go hand in hand: to harness the ICT enthusiasm, competence and skills among the youth in many countries, thought should be given to establish an international IT volunteer programme, where youth and professionals can volunteer their services for short-term assignments at the community level to establish connectivity and impart rudimentary user skills.

To square the circle - returning to the concept of social duality of ICTs - a free flow of information is not only critical for strengthening civil society and democratic structures, but also crucial for the economic development of countries, the creation of livelihoods and linking developing economies to the globalization trends.

Obstacles to the wider spread of ICTs

But adopting a vision alone does not yet remove persistent practical problems: the high cost of equipment and usage impinging on affordability; the paucity of telecommunications and related energy infrastructure; information overload; the danger of misuse of databases; linguistic constraints and cultural domination; proprietary issues especially as regards indigenous knowledge; and difficulties to locate certain information quickly and effectively.

One of the central tasks will be to stimulate innovation in terms of technology choices, approaches and content. Thus far, the information revolution is essentially supply-driven, i.e.
innovations respond by and large to the needs and perceptions of industrialised countries and the business sector. For the sake of development, however, innovations for both hardware and software must also become demand-driven responding to development objectives and needs, such as interfacing ICTs with solar technologies, developing software for environmental management and sustainable forestry, developing interactive touch-screen technologies for illiterates etc.

**Powering connectivity requires energy/electricity.** Renewable energies, especially solar-based (rural) energy and photovoltaics may decelerate the interface requirements of connectivity and electricity and reduce reliance on (costly and environmentally problematic) batteries.

The broadening convergence among the various types of ICT (e.g. Internet/CD-ROM or television/Internet) - in combination with new software (such as push technology and multilingual browsers making information available automatically without cumbersome search) - will help alleviate some of the problems and multiply the options for interaction and intervention.

I might mention that the content of more than 200 different home pages, which you can find on the UNDP website ([http://www.undp.org](http://www.undp.org)) have found space on a single CD-ROM diskette, costing a little more than US$1 to burn. This allows distribution to areas and users lacking telecoms connectivity and thus direct Internet access. The low price allows regular updates at reasonable costs - and thus creates connectivity beyond and without the Internet.

Ultimately, the advent of digital satellite communications is bound to usher a revolution of its own, multiplying development applications and the possibility to reach and connect every conceivable point on earth, obviating the need for landlines or fiberoptic cables.

To overcome the cost hurdles and provide the enormous funds required worldwide, new innovative financing models, including cross-subsidization, tax breaks, access to second hand markets and the design of (trade) off-set arrangements may need to be pursued. Public-private partnerships become a necessity in an area where technical expertise and cost exceed the capacities of governments and the multi- (and bi-)lateral system. Knowledge- and ICT-driven alliances are a means to realise the often elusive - involvement of the private sector in development activities (viz. the June 1997 Toronto conference on “Global Knowledge for Development in the Information Age”).

**ICTs and the future of development cooperation**
Finally, ICTs and free flow of information are also critical for the future of development cooperation. Without accurate and compelling information - not only relying on the compassion factor of CNN, "the 16th member of the Security Council" (Boutros Boutros Ghali) - it will be increasingly difficult to maintain, let alone increase the receding levels of official development assistance (ODA). Information flows and technologies are in a way the umbilical cord linking the global community and giving rise to feelings and acts of compassion and sharing among the citizens/netizens.

ICTs ultimately also will change the concept of development and the way "development" as a product is delivered. This inevitably will affect the character and modus operandi of multi- and bilateral development agencies - programmes, programme content, organisational structures and management - and lead to improved delivery and quality of technical assistance, but also the emergence of virtual organisations.

An increasing number of international organisations are reacting to the signs and challenges of our time and have launched ICT-related programmes - varying in focus and financial endowment. Often times, policy pronouncements are more enlightened and forceful than is reflected in the rather modest funds allocated.

ICTs are also helping to chart novel ways for international conferences and multilateral discourse, for which the June 1997 Toronto conference will serve as a precursor. Governments, international organisations, the private sector, NGOs, the media and academia will all participate as equal partners and on an equal footing - complemented and enhanced by a virtual conference soliciting global input from all walks of civil society, conducted before, during and after the conference through a UNDP-funded Internet-based and moderated listserv discussion to which as of today more than 1,000 submissions were received. It proved to be an exceedingly effective, if not overwhelming mechanism to share ideas, perceptions, experience, knowledge, needs and hopes. All contributions are not a mere byproduct or afterthought to the main event, but they are treated as an integral input to and part of the conference’s deliberations. The Internet thus empowers people by giving them a voice and another channel through which to hear the voices of others.
APPENDIX

ICT-BASED PROJECTS WITH SOCIAL IMPACT

1. **(Long-)distance education** has become an exceedingly viable and effective option to impart literacy, skills, and knowledge to large population groups, especially in rural areas (the focus would thus be different than the established long-distance teacher training projects of the past). Special emphasis would need to be given to complement conventional schooling and training by:
   - expanding learning and literacy programmes to school-age population unreached and bypassed by the formal educational system;
   - enhancing the quality and content of ongoing primary education programmes;
   - improving the quality of life of the vast (and growing) illiterate adult population through specially designed “quality of life” literacy programmes;
   - building indigenous knowledge base networks, based on participatory processes;
   - introducing life-long learning mechanisms.

2. **Telemedicine** denotes a broad range of options of medical practice and training on a remote basis - between physicians and practitioners in distant locations; for epidemiological purposes; to facilitate exchanges of medical information for analysis, education and research; to allow diagnostic imaging and clinical analysis; to provide access to publication and specialised; to collect large-scale field data (telematics). Accordingly, the objectives of telemedicine projects can be manifold: to enhance the quality of the services rendered to a particular country or area; to increase the productivity of health care delivery; to enhance the effectiveness of delivery; to expand reachout and coverage of available health services; to respond to emergencies or disasters; to track national or regional health trends; to intensify training of medical staff; to afford consultations and networking; to promote the establishment of regional and village health centers and facilities for remote diagnosis and medical advice.

3. **Strengthening participatory approaches** through ICT can foster both an environment of empowered citizens and an environment that empowers citizens and civil society - across geographic communities, social classes, economic sectors and political boundaries. Information and knowledge are key for empowerment, transparency and accountability, which ICTs can bolster: they are more participatory, interactive, pluralistic, equitable, of better quality, more cost-effective and geographically more penetrating than traditional approaches.
ITCs can thus enhance social development programmes by empowering different societal groups and gender groups, strengthen civil society and its constituent elements, drive networking and enhanced communication; support advocacy, inject new vitality into democratic processes and practices, strengthen and broaden governance mechanisms and reinforce accountability. At the village levels, (electronic) community centres can become new hubs for civil participation, empowerment and training.

4. Telebanking and microcredit schemes: Technology that can move information anywhere on demand can help banks also to overcome the traditional inability of banking systems to adjust to the needs of the poor and communicating with the illiterate overcoming previously prohibitive costs of reaching and lending to the poor at the village level who each borrows only very small amounts. The technology is tailor-made for a market characterised by a vast, impoverished and mostly illiterate rural population, high crime and widespread fraud - hence suitable for operations and administration of micro-credit schemes and the promotion of micro-entrepreneurship.

5. Environmental protection and management: Environmental protection and management is a wide field for various applications of information technologies, ranging from sustainable forestry and logging practises, waste management and disposal, support to agricultural extension services, water resource management, managing irrigation, natural resource exploitation (as communications and remote sensing technologies allow more accurate geological data collection and creation of seismic images).

6. Beyond this, ICTs are also enormously suitable for purposes of conflict resolution and prevention as well as managing human emergencies and natural disasters.