NICTs: NEW INFORMATION AND COMMUNICATIONS TECHNOLOGIES
advancing sustainable development

There was a time when news travelled by pony express and carrier pigeon, then by telegraph, bicycle, train, boat and plane. Today, letters are sent electronically, along fibre optic networks and telephone lines, a transformation that has shaken the world. New information and communications technologies (NICTs), which have expanded rapidly over the past decade, are revolutionizing as much the workplace as personal relations. From one end of the planet to the other, contacts are being forged, news is circulating, knowledge is being shared. Online data and studies provide rapid and easy access to information, provided the necessary equipment is available. Thanks to these technologies, people can work together, share in-the-field experiences, tell others about existing resources, keep in touch, speed up administrative formalities, and sell their products far and wide. Particularly egalitarian, NICTs are the wonder solution for companies that want to work together, and for ordinary citizens with a thirst for knowledge and exchange. Governance and skills transfer are central to the implementation of these tools for sustainable development.

IMPACTS

Rising energy consumption

No computers means no connections. Yet at each stage in their manufacture –extraction, processing, destruction or recycling of materials- computers pollute and consume energy. They also demand substantial amounts of electricity in order to function for extended periods; some computers are never switched off. Each year, the world's computers use as much electricity as a country the size of Brazil. Increasingly, manufacturers are adopting solutions to reduce their products' energy consumption both during production and use.
www.worldwatch.org/pubs/paper/115

E-waste

The quest for ever faster, more powerful equipment means computers are replaced on an increasingly regular basis. The complexity of their parts, which must satisfy the need for greater functionality and sophistication, makes it difficult to manufacture these devices and manage the electronic waste they produce. Monitors contain heavy metals –lead and cadmium–, diodes contain toxic substances –arsenic and zinc oxide– and circuit boards contain mercury. Discarded monitor cases made from unidentified plastic release dioxins when improperly incinerated. The temptation of the few grams of gold inside a computer has also meant that innumerable personal computers (PC) in working order have been destroyed. Silicon Valley, birthplace of the computer industry, harbours to the highest concentration of hazardous-waste sites in the United States. www.ewaste.ch
www.epa.gov/epaoswer/osw/elec_fs.pdf

TO REACH 50 MILLION PEOPLE IN THE UNITED STATES, IT TOOK THE RADIO 38 YEARS, TELEVISION 13 YEARS, AND THE INTERNET JUST 4 YEARS

Psychological dependency

Growing ranks of young people are hooked on the chat rooms, forums and games they find online. Taken to excess, the Internet can become genuinely addictive. Thousands of Internauts have also developed a passion for day trading. Cyber-addiction has evolved into a modern-day pathology: Internet addicts spend day and night in front of their computer, living life through the virtual situations they have invented. They can show signs of compulsive behaviour and cut themselves off from others. Psychiatric services are increasingly consulted by patients who are addicted to computer games and the Internet.

→ The amount of e-waste generated in Europe increases each year by
3 to 5%

↓ Working on a computer involves staring at a fixed point. Dry eye syndrome, eyestrain, fatigue and headaches are among the most common complaints.

→ Over **1** billion computers have been sold across the world since 1975

COMPUTERS:
REUSE, RECYCLING AND ECO-DESIGN
That used computers should be passed on to individuals and non-profit groups seems like a good solution, though one that is restricted by too high refurbishing costs. Recycling electronic goods and computers, still no easy task, will become compulsory in Europe as from August 2005 when the directive on waste electrical and electronic equipment (WEEE) comes into effect. Currently, several life-cycle audits are performed to minimize, from the design stage, a computer's environmental impact.
www.europarl.eu.int/workingpapers/envi/pdf/brief3en_en.pdf

→ **600** million people worldwide have access to the Internet

→ **x2** the number of Internet connections in the world doubles every 5 months

↓ Words such as"cyberwork", "cybersciences", "cyber-government" and even "cyberecology" have made their way into everyday parlance. Defined at the World Summit on the Information Society, cyberecology refers to the role of NICTs in sustainable development.
www.itu.int/wsis/index.html

ON THE RIGHT TRACK

→Local Agenda 21s on the Web

Most large European cities have adopted their own Agenda 21. These are long-term programmes, based on the principles agreed in Rio. Their definition and application involves the active participation of all local players. As such, NICTs can facilitate consultation and help structure initiatives. Since October 2003, France's Comité 21 has proposed a portal for all the local Agenda 21s in Europe and the Mediterranean Basin. www.agenda21.org

↓ Valenciennes in France has founded its own Web TV, accessible by all the town's residents. They can suggest topics and talk to elected representatives and other local figures. **www.valenciennes.fr**

THE TEN YEARS SPANNING 2005 TO 2014 HAVE BEEN DECLARED "UNITED NATIONS DECADE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT" BY THE UNITED NATIONS GENERAL ASSEMBLY. NICTS ARE AMONG THE TOOLS THAT THIS INITIATIVE WILL DEVELOP. http://portal.unesco.org/education/en/ev.php-URL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html

→Recycling computers in Japan

Since Japan introduced its law for the promotion of effective utilization of resources in October 2003, households' PCs are collected and recycled. This operation is organized by the Japan Electronics and Information Technology Industries Association (JEITA) with the backing of 36 computer manufacturers. A logo on the computer indicates it will be collected and recycled at no extra cost via the national post office network. The scheme extends to the collection and recycling of office computers and older machines, for which a fee is charged. www.japanfs.org

→ NICTs and developing countries

NICTs are a valuable tool for local development, education and connecting people in developing countries. They are also a means of emancipation and expression for women. Various initiatives exist to bring NICTs to remote regions. The Swaminathan Foundation, with the support of international aid agencies, has connected a dozen villages in southern India to the Internet. Job offers, small ads, advice and local information are diffused online, with active contributions from villagers.
www.apcafricawomen.org/full.rtf
www.unfpa.org/icpd/10/icpd_fgc.htm
www.mssrf.org

→ Global networks

Numerous networks use the Internet not only as a means of connecting the different stakeholders involved in sustainable development, but to exchange good practices, diffuse knowledge, mobilize citizens, react to events and propose solutions. www.sustainablealternatives.net

THE SEMANTIC WEB

The principles of sustainable development embrace multiple domains, and picking up these threads among the mass of online information about sustainable development is no easy task. The Semantic Web project organizes information and proposes classification solutions. www.mondeca.com/faqs.htm

AT UNEP

→ GESI: GLOBAL E-SUSTAINABILITY INITIATIVE

In 2001, a number of major information and communications technology companies grouped together to launch the Global e-Sustainability Initiative (GeSI) with the support of UNEP. Its objective is twofold: to inform and train NICT companies on the new products and services with which they can improve their environmental performance, and to promote NICTs that will foster sustainable development.
www.gesi.org

PUTTING IDEAS INTO PRACTICE

Individuals
→ SHARE IDEAS AND EXPERIENCES THROUGH FORUMS, OR JOIN A NETWORK → TRAIN IN NEW SKILLS → FIND PRACTICAL, CULTURAL AND PARTICIPATORY INFORMATION ONLINE → DON'T STAY ONLINE FOR HOURS; GO ON USING OTHER MEANS OF COMMUNICATION → DON'T LEAVE A COMPUTER ON STANDBY MODE → CHOOSE A STURDY MODEL THAT WILL EVOLVE WITH NEEDS AND KEEP IT IN GOOD WORKING ORDER → TAKE OLD ELECTRONIC GOODS BACK TO THE STORE OR TO A WASTE COLLECTION POINT → DON'T THROW AWAY A WORKING COMPUTER; DONATE IT INSTEAD

Companies
→ SET UP AN INTRANET WITH A NEWSLETTER, SUGGESTIONS BOX AND SMALL ADS → CIRCULATE MEMOS AND NEWSLETTERS BY E-MAIL → TAKE PART IN INTERNATIONAL EXCHANGES TO SHARE KNOW-HOW AND EXPERIENCE → INSTALL A NETWORK THAT ALLOWS EQUIPMENT TO BE COMPLETELY SWITCHED OFF → TAKE OUT A MAINTENANCE CONTRACT FOR THE COMPANY'S COMPUTERS → WHEN REPLACING COMPUTERS, GIVE THE OLD ONES TO STAFF OR DONATE THEM TO NON-PROFIT GROUPS

Local authorities
→ SET UP A WEBSITE GIVING RESIDENTS ACCESS TO INFORMATION, SERVICES, SMALL ADS, LOCAL NETWORKS, TV AND SPECIALIST DIRECTORIES → PROVIDE FREE INTERNET ACCESS IN TOWN HALLS, SCHOOLS AND LIBRARIES → WORK WITH SOLIDARITY ORGANIZATIONS TO SALVAGE COMPUTERS IN GOOD CONDITION FROM WASTE COLLECTION POINTS → DONATE THIS EQUIPMENT TO SCHOOLS AND CHARITIES → PROVIDE A HOME COLLECTION SERVICE → DEVELOP E-LEARNING PROJECTS

FIND OUT MORE

International Council for Local Environmental Initiatives: www.iclei.org

Information society and policy: www.qlinks.net

European Schoolnet: www.eun.org

Gateway for cleaner production: www.cleanerproduction.com

Global Network of Environment and Technology: www.gnet.org

Contribution of NICTs to sustainable development: www.tic21.com

United States National Training and Information Center: www.ntic-us.org

Silicon Valley Toxic Coalition: www.svtc.org

Environmental Information Circulation and Monitoring System on the Internet: www.sisei.net

Information and Communications Technology and the Environment in Asia and Pacific: www.icteap.org

Electronic waste guide: www.ewaste.ch

Electronics recycling initiative:
www.nrc-recycle.org/resources/electronics/index.htm

International Telecommunication Union: www.itu.int