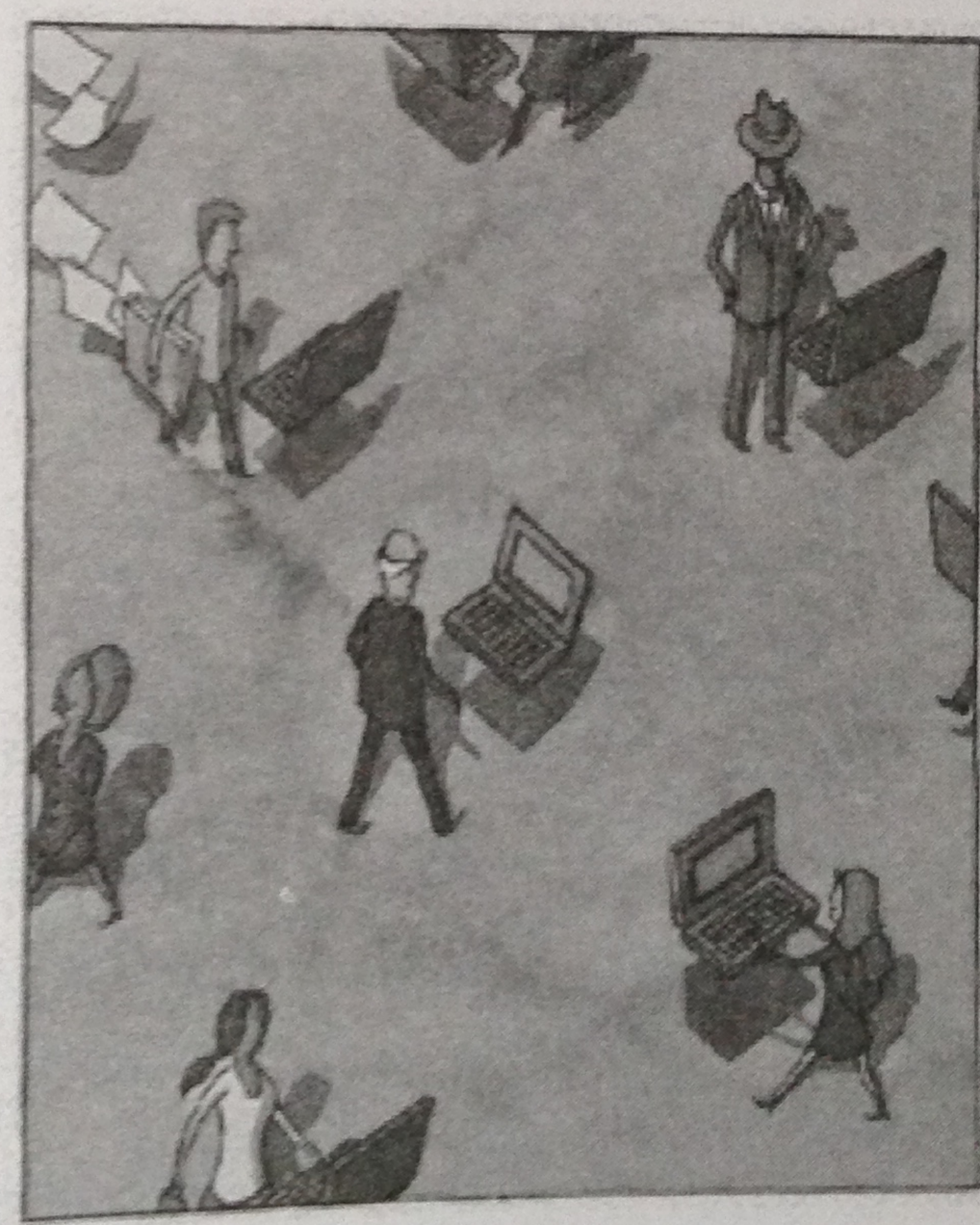
THE CLUB OF ROME

Towards a New Age of Information and Knowledge for All



Statement of the Club of Rome
to the World Summit on the Information Society
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FOREWORD

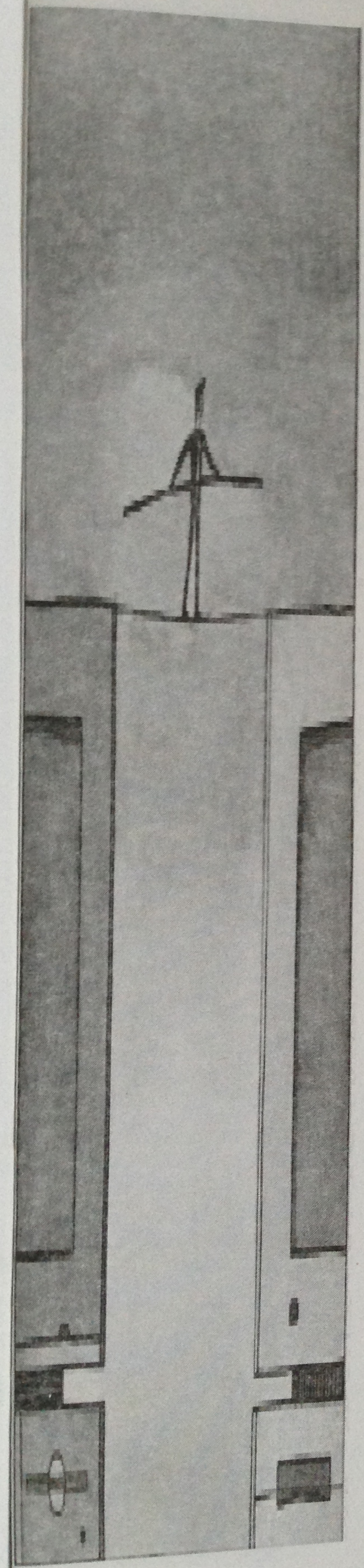
The **emergence of a networked knowledge society** in the next twenty to thirty years is a major paradigm shift from the industrial model of the nineteenth and twentieth century. This transition is of crucial importance in opening up new opportunities for education, social inclusion, and more efficient use of resources. Information and communication technologies are the effective tools of this transition.

They are a **"tool for development"**, not a "reward for development". They have the potential to empower billions of people; to enable sustainable development, and enhance human dignity. They can offer new access to education for and by the people even in the most remote regions; bring improved health care; help eradicate poverty, empower women and build sustainable communities. They can enable self-expression, new knowledge creation and cultural diversity, and continued and sustainable economic growth. They must be harnessed to the goal of globally sustainable development.

Since the debate on the first report commissioned by the Club of Rome, *Limits to Growth,* in the 1970s and the **Earth Summit in Rio** in 1992, the deterioration of the earth's environment has been of growing concern. In the 1990s, the challenges of **poverty and governance** have risen to the top of the political agenda. The integration of these concerns in international debates on world trade and finance now constitutes the **agenda for sustainable development**. It has been developed through the adoption of the Millennium Development Goals in 2000, through the launching of the Doha Development Agenda in 2001, and at the World Summit on Sustainable development in 2002.

The **World Summit on the Information Society** must be the next step. The **transition to a networked knowledge society**, based on wide use of information and communication technologies, cannot be a separate process driven by our fascination with technology for its own sake or for short-term competitive advantage.

Prince El Hassan bin Talal
President of the Club of Rome



Executive Summary

The Millennium Declaration of the UN General Assembly has highlighted the major challenges facing mankind. They have to be tackled in the next decades for the benefit of all. At the World Summit on Sustainable Development in Johannesburg, the world community has set the objectives and action plans to reach a sustainable world. The present World Summit on the Information Society (WSIS) must be the next step.

The networked knowledge society is nothing less than a **paradigm-shift** form the industrial model of the two past centuries. It can introduce new patterns of social structure and behavior, of public and private organization, of production and trade. It can re-define the links and relationships between people, nations and religions. Low-cost access to networks –fiber, cable, wireless and satellite- can empower creativity, innovation and local entrepreneurship, as well as strengthen local communities, and improve resource-productivity: getting more value from less.

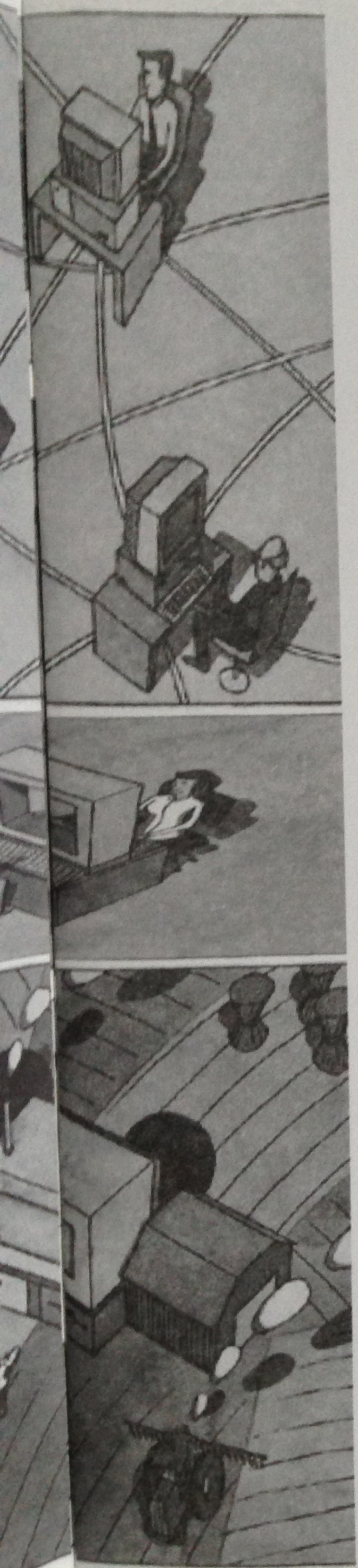
The reduction of the **'digital divide'** is therefore rightly a world priority. This requires appropriate **technology development,** and **education** in use of technologies, as well as effective use of technologies for education and capacity building. These technologies and programs must fit a wide range of skills, native languages, local traditions and indigenous knowledge. When they do, the transition to a networked knowledge society can be a real step towards the **alleviation of poverty** and therefore a substantial contribution towards a **sustainable world society.**

The full benefit from use of ICT for development cannot be realized without addressing the need to preserve and enhance **cultural diversity**. The potential richness of the emerging knowledge society depends on safeguarding humanity's cultural heritage and diversity in creativity.

ICT can also play a crucial role in protecting and managing our environment. It can help monitor natural resources; natural disasters; climate change, fresh water depletion, desert

extension and forest depletion, and many others. A **systemic approach** for **monitoring** and **early warning** must be supported by the international community and urgently implemented.

Effective and collaborative world governance is the next major **challenge for mankind:** in health, environment, safeguarding bio- and cultural diversity and sustainable development. The emerging knowledge society adds new challenges: ensuring rights of access to and creation of knowledge; re-defining and protecting the 'commons', especially related to knowledge and intellectual property rights; assuring privacy; addressing the coherency and simultaneity of the infrastructure developments and the educational processes, and finally caring for stability and security in the transition towards a sustainable world society.



Recommended Actions

Redefine the **common goods** of mankind in regard of the emerging knowledge society in which a large part of knowledge can be regarded as public goods.

Enhance the **Universal Declaration of Human Rights** in which the right to access and creation of information must be explicitly addressed and protect the **private sphere** of all participants in Cyberspace.

Reduce the **'digital divide'** and **empower women** through education.

Encourage the use of **"open-source"** software especially in developing countries, to facilitate the reduction of the 'digital divide'.

Connect all the World's universities and high-schools in the same sort of high-speed network for research, education and collaborative development as is available in Europe and the US.

Develop a global structure and management facility for **global monitoring for the environment** to enable the acquisition of structured data and the improvement of environmental management and development;

Elaborate new analytical tools for risk analysis and mechanisms **to dampen financial and political instabilities. Stability and security** are conditions for sustainable development.

Bridging of the 'Digital Divide' requires a **simultaneous development** of **infrastructure** of ICT networks and – when necessary - of local electrical power, and the **training of future teachers**.

Involve and broaden the involvement of **Civil Society** with its many **NGOs** and other organisations, **in the implementation processes of Plans of Action agreed upon in World Summits and International Conferences.**

A New World Frame for Sustainable Development

1

The agenda for Sustainable Development has been developed through a series of major UN conferences in the 90s, starting with the Conference on Environment and Development in Rio in 1992. In the last three years, progress has accelerated in five important meetings:

The **United Nations Millennium Declaration** was adopted in September 2000. In it, Heads of State and Governments repeated their commitment to the fundamental values of freedom, equality, solidarity, tolerance, respect for nature and shared responsibility. It was accompanied by the **Millennium Development Goals:** including halving extreme poverty and hunger; to achieve universal primary education; empower women and promote equality between women and men; ensure environmental sustainability; and create a global partnership for development -with targets for aid, trade and debt relief.

The **Brussels Declaration** in May 2001 reaffirmed the critical role played by the official development assistance for the Least Developed Countries (LDCs), and the speedy implementation of the Heavily Indebted Poor Countries initiative. It emphasized that improving the welfare of people is indispensable to sustainable development.

The **Doha Ministerial Declaration** in November 2001 at the WTO Ministerial Conference recognized the need for a new multi-lateral trade framework for further economic development and alleviation of poverty. It recognized that LDCs are vulnerable and must be helped to secure beneficial and meaningful integration into the global economy. It recognized that enhanced market access, balanced rules, and well targeted, sustainable financed technical assistance and capacity-building programs are needed.

The fourth, the **Monterrey Consensus**, adopted in March 2002 recognized that in an increasingly interdependent world economy, a holistic approach to financing sustainable, gender-

sensitive, people-centered development -in all parts of the world- is essential. It defined **Leading Actions**, including stimulation of foreign direct investment, increasing international trade, financial and technical cooperation, relieving external debt, stimulating good governance and fighting corruption.

The fifth, the **Johannesburg Summit Declaration** and **Implementation Plan** of September 2002 recognized that poverty eradication, changing unsustainable consumption and production patterns, and protecting and managing the natural resource base are essential requirements for economic and social development. It recognized that the increasing gap between the rich and the poor, as well as between developed and developing countries, pose major threats to global security and stability, and that continued degradation of the global environment is a major hindrance to sustainable prosperity.

All these conferences have created a real new framework for action and reflection on world developments. Their Declarations provide specific goals and timeframes. **The present World Summit on the Information Society (WSIS) must be the sixth step in this process**. The emergence of new information and communication technologies are creating a new paradigm: **"the networked knowledge society"**.

ICT and Innovation for Sustainable Development

2

2.1 Creating the Conditions for Sustainable Development through use of ICT

Sustainable development depends on the involvement of everyone and their willingness to take responsibility for our collective future. Everyone will need relevant information in forms that they can understand and use, as well as skills and motivation which will facilitate change. Therefore raising awareness through access to knowledge is most important. Reducing the "Digital Divide" is therefore rightly a world-wide priority. Without determined action, uneven growth of the networked knowledge economy will increase inequity, its visibility and its social consequences. Frustrated young people see the huge difference between the lifestyles in the US and Europe and their own, with migration to these wealthy regions as their only alternative to continued poverty.

While attention naturally focuses on the most disadvantaged – the one billion poorest in rural and most remote areas, a high priority must be to establish market frameworks in which access can be broadened to the "next 2 billion". These are predominantly young people (12-30) living in rapidly growing urban environments. This is the population most likely to gain immediate benefit; which has the curiosity and enthusiasm to drive the social and entrepreneurial innovations; with the greatest need for knowledge and with sufficient aggregate financial resources to provide an adequate return on investment.

Technologies are not a solution to development problems on their own. They can be valuable contributions to development in combination with a full range of other measures.

2.2 Network and Power Infrastructure

The liberalization of information and communication network infrastructure and service provision - particularly at the local level (for W-LAN and inter-connection to mobile telephone networks)- has to be implemented. PC-based access to the internet is not necessarily the best "technology package", for many development purposes: much more may be possible with voice communications (mobile telephone or VoIP/W-LAN systems); or with digital radio and TV at the local community level.

The generalization of wireless and satellite communication provides access of local and remote communities to information and empowers the preservation and sharing of indigenous knowledge.

Numerous experiments and initiatives in rural and remote places as well as in urban areas are underway today in Africa, Asia, the Middle East and elsewhere. They have in common the determination of people to share of new facilities, and to achieve a better life for the present and coming generations. Several examples show the possibility to improve local health care and medical services, to increase local agriculture production and trade, to empower women, to organize education at all levels, to build local indigenous knowledge centres and to start to provide e-government services.

Taking advantage of the wireless communication facilities necessitates the provision of decentralized electricity facilities. Today, a variety of technologies are applicable to these conditions. However, in the long run, sustainable renewable energy sources such as biomass, solar cells, etc. must make an increased contribution.

2.3 Education for Knowledge Sharing and Capacity Building

The 'digital divide' is but one element of a broad gap that separates the rich from the poor. Development of appropriate ICT has the potential to narrow that the gap. However, the broadening of participation in and responsible engagements with the information society must also focus much more on education and entrepreneurship. The efforts must also go far beyond simple provision of access to infrastructure and affordable terminals and services. Education and innovation are linked to the creation and dissemination of knowledge, and as a global public good, through its sharing and integration into the chain of value creation.

Basic education for most people is not sufficient to achieve a sustainable knowledge society, worldwide. It will be necessary to move beyond the Millennium Development Goals in a huge effort to develop educational systems on all levels.

Education for ICT

People need skills and knowledge in order to handle the information flows they will be confronted with. Education for ICT is necessary to promote the use of local knowledge with new technologies. To allow the emergence of "multiple modernities", indigenous knowledge has to be fully integrated into the new social reality. Cultural and linguistic diversity is to be fostered as an element of global cohesion. In the process of deepening democracy and participation, people also need to be able to contribute to the knowledge circulating in society. Ownership of content by society is of enormous importance when technologies and infrastructure are produced by distant global companies.

ICT for Education

As education is necessary in order to develop knowledge societies, ICT has to be used to develop education systems. It empowers society to develop new learning methods, to promote distance learning, to create virtual libraries and universities and to assist with innovation and training. ICT can be particularly helpful in research and development where fast communication and knowledge access facilitate the creation of research communities. In the domain of social innovations in education and health-care, ICT allows greater peer-support between pupils and teachers, at the local and community-level. Much more emphasis is needed on this peer-to-peer support: teachers helping teachers; pupils helping pupils. This may help to avoid a new cultural colonialism through imposition of multi-media educational curricula and content from US and European companies and commercially-oriented institutions. We must connect all the World's universities and high-schools in the same sort of high-speed network for research, education and collaborative development as is available in Europe and the US.

ICT for Capacity Building

Equity and social cohesion are prerequisites for attaining a sustainable communities and societies. Capacity building is people-centred development deeply embedded in this social, economic and political environment. Capacity building has to be designed to promote change, to reduce vulnerabilities and to motivate local populations and implies a long-term investment in people. Training for professional skills, by and for local people, at all levels of assimilation, provides the necessary long-term perspective for local entrepreneur-ship and craftsmanship as well as for social integration. Its implementation has to be a joint effort by technical schools and universities as well as through business-support networks.

Public authorities have the responsibility to take the lead to encourage and invest and in all forms of education, having to their side that basic education is a fundamental right. Basic education, respecting local languages, integrating indigenous knowledge and embedded in local traditions fulfill the prerequisites for the

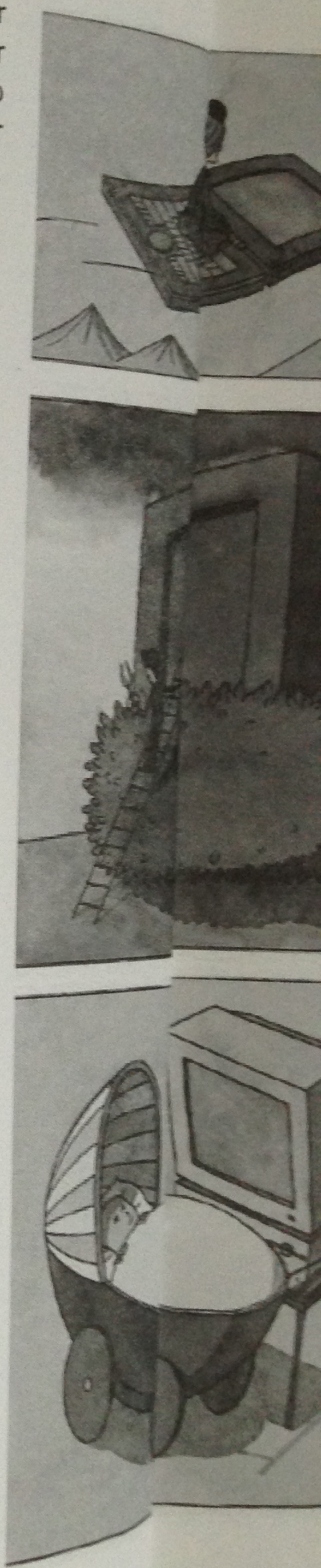
alleviation of poverty and the reduction of the 'digital divide' of their citizens and is the ultimate condition for the empowerment of gender equality, democracy and human dignity. ICT offers new possibilities to accelerate the learning processes for basic education as well as for enhanced skills training in many domains.

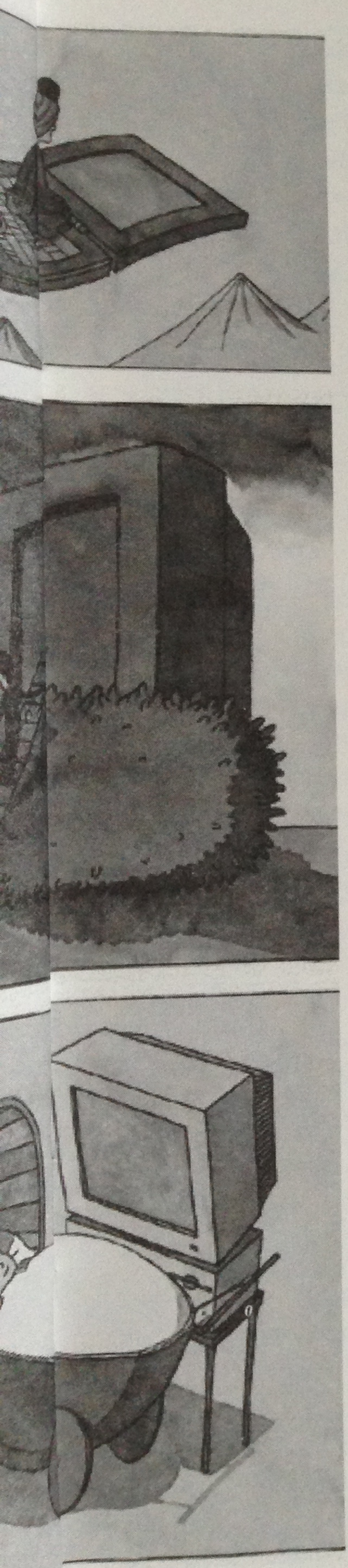
At world level a new ethics of human solidarity should accompany these processes towards to a sustainable society.

2.4 Monitoring Environmental Targets

Information systems have an essential role to play in reaching **environmental targets** for sustainable development. In the WSSD in Johannesburg, the Plan of Implementation lists numerous actions on environmental preservation and climate change which cannot be realized without the support of ICT. These technologies can enable systematic and comprehensive **monitoring** for the protection and conservation of Earth's ecosystem: the protection of forests from uncontrolled exploitation, the protection of oceans and coastal areas from large scale pollution, and of the marine environment from land-based activities. We also need such a **monitoring system** to mitigate the effects of desertification, drought and floods, to measure climate change; to monitor land and natural resource use, and to manage rescue efforts after large-scale disasters. The accumulation of very large amounts of data; their effective use and archiving for the far future, requires a global structure and management facilities.

The recent Conference on the Digital Earth in Brno has taken the first steps; the implementation of the joint initiative of the European Commission and the European Space Agency, the Global Monitoring for Environment and Security system (GMES) as well as the joint initiative of UN Environmental Program and International Telecommunication Union, the Global e-Sustainability Initiative (GESI) are other key steps enhancing the acquisition of structured data and the improvement of environmental management, development and sharing of best practices. The availability and use of data about the **Earth's co-evolution with humanity** will allow the modeling of future scenarios, and provide national and world leaders with the necessary tools for decisions.





2.5 Cultural Diversity and Creativity. The Impact of the Media

Richness of Cultural Diversity

The implementation of sustainable communities implies a shift of values, attitudes and approaches. To prevent a catastrophic **"clash of civilisations"** in a multi-cultural world, both cultural identity and diversity must be accepted as legitimate goals in themselves, alongside respect for fundamental human rights and identification with a common set of universal human values. Loss of cultural diversity increases political and economic instability.

We must develop culturally diverse, tolerant and vibrant societies in which individuals have the opportunity actively to pursue and fulfil their primary need for a sense of identity and a sense of belonging. **We need a world of "multiple modernities", with communities rather than ideologies,** in which different **cultures peacefully co-exist:** a world of **"learning communities"** in which no culture imposes its **values** on others, and where **"indigenising modernity"** and **"learning from each other" are values in themselves.** The networked knowledge society has to integrate the **richness of indigenous knowledge** as well as to assimilate eco-centric and anthropo-centric visions of a sustainable world society.

To reflect this need, more attention needs to be given to voice-communications -with a new spectrum of possibilities from cheaper mobile telephony and to voice over the Internet; and to development of interactive digital TV, as a **platform for peer-to-peer and "community" communication,** as well as broadcasting: both could do much to respect and protect cultural diversity.

The Role of the Mass-Media

The local and regional authorities have to be aware of the role the **mass-media** can play in the construction of more sustainable societies. These media must be re-oriented from systematic promotion of unsustainable consumerism towards the creation of

awareness about sustainability and environmental issues, about social cohesion and local values and traditions. They must be harnessed to enhance literacy, basic education and technical skills. In fact, the mass-media should become major players in **empowering people and communities** by making them more conscious about their own cultural identity, instead of being simply a marketing instrument for stereotyped consumer patterns. This requires a radical change in licensing regimes.

2.6 Empowering Productivity and Entrepreneurship

Local Level

The availability of appropriate technical infrastructures for education and skill training provide the sound basis for better social integration as well as to facilitate **local entrepreneurship**, particularly by **women and youngsters**. The re-valuing of local indigenous knowledge and traditions, enhanced through partnerships for the transfer of technology innovation, opens new ways for genuine and sustainable market development. The **recognition of property rights, land-ownwership, IPR, business ownership, etc.** is a necessary step in reaching sustainable societies, as is recognition of the value of people's knowledge and "social capital" in the attribution of micro-credits and micro-loans.

Major efforts are also necessary to get frameworks right for the **accountability of local authorities**, employees, investors and shareholders, and for more effective empowering of socially-responsible local development.

Global Level

There must be major efforts, at the global level, to get the market and **accountability frameworks** right. We must create frameworks, at the global level, which support "green entrepreneur-ship". **Corporate Social Responsibility (CSR)** must become a **ubiquitous requirement**. The « **triple-bottom line** » reporting, including on natural, social and human capital development, completed with a reporting on partnerships for investment and development, should be normal practice for all publicly-quoted companies.

3 Governance and Recommendations

In the next 30 to 50 years the emergence of mature information and knowledge world society poses new challenges to its governance at all levels of society: local, regional and world. The new space created by the wired and wireless net of communication, the world wide web of information, the knowledge shell around the earth will be an integral of part of human society. All this needs appropriate governance institutions with specific legislative frameworks as well as monitoring and control mechanisms.

The knowledge society is nothing less than the prolongation of the physical society we have known since the appearance of mankind on earth. This society is by definition the most human in the history of the earth. It is also a totally new situation for mankind. The first challenge is to get all communities connected: The "knowledge shell" is the knowledge of all humanity. The second challenge is to enable everyone to be able to use, and add to, this common resource.

In the frame of the present World Summit on the Information Society the following recommendations are suggested:

3.1 Protecting the "Commons". Enhancing The Universal Declaration of Human Rights

World society has to redefine and agree upon the **common goods** of mankind. These are not only nature and the ecological system of which our species is part of. In the emerging networked knowledge society, a large part of our knowledge can be regarded as public goods to which any citizen of this world can freely use and add to. Since these rights are not enshrined in the **Universal Declaration of Human Rights**, an enhanced text has to address explicitly these new common goods.

To facilitate the emergence of new entrepreneurial networks and peer-to-peer educational support, new initiatives must also be taken at international level to recognise, protect and encourage collective knowledge creation: **"free and open source"** software;

knowledge in the "public domain"; "traditional knowledge" and "open content" such as artistic (including music) and scientific knowledge that the creators wish to contribute to an open pool, but nevertheless wish to see recognised as theirs.

3.2 Stability and Security

The stronger (and faster) interactions between people in a more intensely networked society and economy will generate **new risks of instability**, as well as new growth and creativity. These risks of instability from positive feedback and "fashionable" over-enthusiasms or recessions, whether in financial markets, in internet "virus" propagation, or in social movements, must be addressed. They must be addressed at the international level. New mechanisms must be found **to dampen "run-away" trends**, to contain them, and to re-channel them. The analytical tools for risk analysis in complex systems are becoming available, but the institutional arrangements to mitigate risks are not yet in place.

3.3 Simultaneity in the Implementation of Infrastructures

The successful bridging of the 'digital divide' requires a simultaneous development of infrastructure of ICT networks, eventually accompanied by the installation of local electrical power, and the training of future teachers. Governments insist too frequently on their efforts to install infrastructure and overlook the problem of the training of the teachers and conditions for acceptance. It is important to stress that ICT is only a tool and not an end in itself. New contents and teaching instruments using ICT, have to be developed and it is to be expected that such initiatives would be developed by appropriate international institutions. In the absence of a simultaneous implementation of the human, technical as well as the financial investments by governments, the risk is real that they miss the objectives and expectations ICT can offers for further development, especially in the reduction of the 'digital divide'.

3.4 Protecting Privacy

The new communication and information infrastructures bear the **potential threat** to the **private sphere** of all participants. This threat is already present in today's networks. The normal functioning of any society and democracy in particular requires tools and rules to prevent the abuse of information about private matters of its members. In view of the importance of this matter, it has to be addressed **urgently** by the political and civil society including the business leadership at **world level**.

3.5 Participation of the Civil Society and NGOs in Plans of Implementation

The implementation of the Plan of Action of this and past World Summits as well as other large conferences of the last thirty years will be difficult. Political commitments are agreed on the spot. However, their implementation risks to fall short, by far, of the expectations of the concerned populations. The difficulty lies in the fact that political decisions are essentially top-down measures. However, their successful implementation is a bottom-up process, driven by local communities and authorities. The greater involvement of Civil Society with its many NGOs and other organisations, which have considerable expertise in specific fields, is increasingly essential in implementation processes. **NGOs and civil-society organisations should be empowered to play an increased role**.

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