

Global Information - Access Challenges



An International Workshop “Creating the Information Commons for e-Science: Toward Institutional Policies and Guidelines for Action”, UNESCO Headquarters, Paris, 1-2 September 2005

**Elizabeth Longworth, Director, Information Society Division,
UNESCO**



Structure of presentation

- Global challenges of the Information Age and Knowledge Divide
- Access challenges in the WSIS Plan of Action and UNESCO's response
- Access challenges for e-science

The Information Age

ICT advances are exponential:

- Digital storage and processing of information
 - ▶ Doubling of microprocessor power every 18 months (Moore's law)
 - ▶ Nanotechnology
- Transmission of information
 - ▶ Doubling of communication power every 6 months (Gilder's law)
 - ▶ Wireless links
- Useability and access to information
 - ▶ Ubiquitous Net, convergence of technologies
 - ▶ Global information flows
- New dynamics ("social physics")
 - ▶ Networks that mimic the biological world
 - ▶ Intelligent computing

The Digital Divide

From the UN Millenium Indicators Database

	World	Developing regions	Developed regions
Number of telephone lines and cellular subscribers per 100 population (2003)	40.5	25.0	124.7
Number of personal computers per 100 population (2003)	10.1	3.4	44.9
Number of internet users per 100 population (2003)	11.1	5.1	44.8

The Digital Divide

From <http://www.people.virginia.edu/~rjb3v/digitaldivide.html> (2001)

- Internet access costs as a percentage of average monthly income
 - USA 1-2%
 - Uganda over 100%
 - Bangladesh 191%
- In Bangladesh a computer costs the equivalent of eight years average pay
- In the entire continent of Africa, there are 14 million phone lines, fewer than in either Manhattan or Tokyo
- More Internet accounts in London than all of Africa
- One in two Americans is online, compared with only one in 250 Africans
- Of all the Internet users worldwide, 60% reside in North America, where 5% of the world's population reside

The Knowledge Divide

From the UN Millenium Indicators Database

	Least Developed Countries	Developing regions	Developed regions
Literacy rate (2000-2004)	64.2	84.9	99.7
Percentage of students enrolled in the final grade of primary school (2001-2002)	50.1	83.0	99.8
Ratio of literate women to men of 15-24 years old (2000-2004)	0.80	0.91	1
Infant mortality rate: deaths per 1000 live births (2003)		60	6
Estimated percentage of adult HIV/AIDS prevalence (2004)		1.26	0.5

WSIS Plan of Action on access to information and knowledge

Challenges and strategies:

- Public domain information
- Research and development in ICT
- Public access points
- Software models
- Capacity-building
- Research on the Information Society
- Digital libraries and archives
- Access to scientific information

Ensuring the right policy environment

Promote public domain information

- 2003 - Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace
- 2004 - Policy guidelines for the development and promotion of governmental public domain information

Ensuring the right legislative framework

Advocacy of media legislation

- Introduction of national Freedom of Information laws
- Transborder data flows

Staying innovative on access

Promote research and development to facilitate accessibility of ICT for all

- ICT for disabilities - Establishment of the Adaptive Technology Centre for the Blind in Ethiopia, a computer training centre to assist the blind and visually impaired members of the community to gain access to information and communication technologies
- Innovative solutions – eg in multilingualism, ICT in education, community access

Helping ordinary people to gain access

Establish sustainable public access points to communication resources



- The UNESCO Community Multimedia Centres (CMC) combines community radio by local people in local languages with community telecentre facilities (computers, Internet, phone, fax and photocopying services).
- The radio not only informs, educates and entertains, but it also empowers the community by giving a strong public voice to the voiceless, and thus encouraging greater accountability in public affairs.

Helping ordinary people to gain access

Establish sustainable public access points to communication resources



- UNESCO launched a sixth community telecentre in Ethiopia on 22 August 2005. The center offers 5 Internet connected PCs, access to digital photography, scanning and printing equipment with ICT and ICT-based training course.

Encouraging the development of appropriate tools

Promote different software models

- Development of the Free and Open Source Software (FOSS) Portal, a gateway to resources related to Free Software and Open Source Technology movement
- Promotion of open source software (Greenstone)
- Supporting the use of Moodle, an open-source learning management system, in the Arab Open University
- Cooperation agreements with IT industry – eg GIS mapping software, maths apps

Developing the human resources and infrastructure

Build capacities to access knowledge

- The Space for Science initiative with ESA, Alcatel, IBM and C2 Consultants on using satellite technology to network scientists in Eastern Europe

Knowing how we are doing

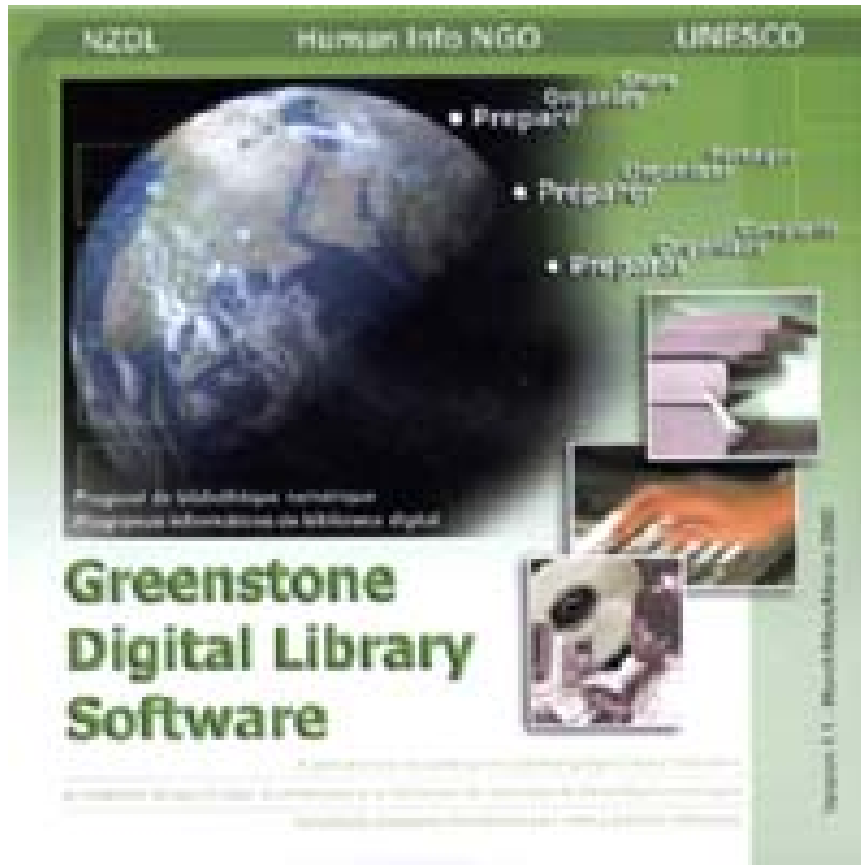
Encourage research on the Information Society

WebWorld	Communication/Information Portals	
Observatory on the Information Society		
<ul style="list-style-type: none"> Communication and Information 	<h3>UNESCO Observatory on the Information Society</h3> <p>Monitoring the Development of the Information Society towards Knowledge Societies</p>	
<ul style="list-style-type: none"> Information Society Observatory <ul style="list-style-type: none"> About Regional Observatories: <ul style="list-style-type: none"> -Africa -Arab States -Asia/Pacific -Latin America/Caribbean -Portuguese Speaking Countries News Archive: <ul style="list-style-type: none"> -2004 -2003 	<p>Directory Categories</p> <p>Access to Information and Knowledge Access to Communication Resources E-Governance Intellectual Property Rights Public Domain Information Scientific Information</p> <p>Capacity Building E-Literacy ICT in Education Training of Communication and Information Professionals</p> <p>Cultural Diversity and Multilingualism Local Content Multilingual Tools and Products Standardisation and Adaptation of Computer Systems Translation</p> <p>Enabling Environment Cyber-Crime and Misuse of ICT Ethical Issues Frameworks for Online Communication General Human Rights and Universal Values Internet Governance Privacy Tariffs</p> <p>Information and Communication Infrastructure Community Access Information Processing Tools Libraries' and Archives' Initiatives National, Regional and International Networks Telecommunication</p> <p>Measuring the Information Society Research Statistics</p> <p>Special Focus Children Developing Countries and LDCs Disadvantaged and Vulnerable Groups Older People People with Disabilities Remote Areas Women Youth</p> <p>Towards Knowledge Societies ICT for All Aspects of Society ICT for Development</p>	<p>Directory Tools</p> <ul style="list-style-type: none"> Add link Modify link Newsletter New links added this week <p>Directory Search</p> <p>By keyword <input type="text"/> <input type="button" value="GO"/></p> <p>Advanced Search</p> <p>By region</p>  <ul style="list-style-type: none"> Africa Arab States Asia/Pacific Europe Latin America/Caribbean North America International
<p>WebWorld Portals</p> <ul style="list-style-type: none"> Libraries Archives Free & Open Source Software Information Society 		

- The UNESCO Observatory is an Internet-based gateway to online resources on ethical, legal, socio-cultural and policy issues of the Information Society.

Organizing the digital world

Support the development of digital libraries and archives



- The Greenstone software empowers users, particularly in universities, libraries, and other public service institutions, to build their own digital libraries.

Ensuring vision and leadership

- Ministerial Round Table on “Towards Knowledge Societies”, UNESCO Headquarters, October 2003

“The public sector, as well as the private sector, in all countries should invest in building science and technology capacities [...]. Affordable access to scientific and technological content, such as publications and databases, is a critical development priority. There is also a need to identify and preserve traditional knowledge, to apply ICT to make it available to all, and to establish appropriate links with modern science.”

Encourage initiatives to facilitate access to scientific information

- Koïchiro Matsuura, Director-General of UNESCO, speaking on the importance of Open Access

“UNESCO’s policy is to encourage and assist member states to promote access to information and knowledge for the progress of science and the diffusion of education.”

(March 2003, International Symposium on
“Open Access and the Public Domain
in Digital Data and Information for Science”)

Access challenges of e-science

- Intellectual Property Rights framework

How to reconcile the need to share knowledge but protect interests ?

- Information on the Internet as “public goods”
- The ethics and protocols within the science profession
- Funding models of universities and research institutes
- Impact on publishing and purchasing