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ABSTRACT

This paper describes how Information and Communication Technologies (ICT) are creating the knowledge society, which will impact on developing and transitional economies as well as developed nations. It argues that librarians have an important role to play in overcoming the digital divide and makes reference to the Global Knowledge Partnership. Highlights include: ways that ICT can help the disadvantaged; examples of community-based telecommunications; challenges related to developing appropriate skills and content; and the value of libraries' traditional contributions (e.g., providing access, working in partnership, structuring knowledge, imparting skills, preserving heritage, and inspiring trust) in the knowledge society. (Contains 14 references.) (MES)

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Global knowledge: a challenge for librarians

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This paper describes how the information and communication technologies are creating the knowledge society, which will impact upon developing and transitional economies as well as developed nations. It argues that librarians have an important role to play in overcoming the digital divide, and makes reference to the Global Knowledge Partnership.

The so-called law of IT which states that computers double in power each year, and halve in price is well known. What's essential, as Nicholas Negroponte has stressed, is that the growth is not linear but exponential, and in any exponential curve, most of the gain comes right at the end. After fifty years of innovation, the curve is almost vertical and we are in the midst of a revolution - or, if you are more optimistic, a renaissance - made possible by Information and Communications Technologies. What we couldn't imagine yesterday is possible today, and will probably be done tomorrow.

Defining a revolution-in-progress is like mapping the larva flow from an active volcano - well neigh impossible and extremely dangerous. Almost every aspect of our lives seems to be changing; and it does feel as if many of the familiar economic, political and social structures of the 20th century are being eroded, and reformed for the new millennium. It can be difficult to determine cause and effect, but I think it is plausible to say that the rapid development and convergence of communications, computing and digital content is enabling the globalization of production; stimulating enterprise and creativity. This is what is meant by the "knowledge driven economy", recently defined by the British government as "one in which the generation and exploitation of knowledge plays the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge; it is also about more effective use and exploitation of all types of knowledge in all manner of economic activity". [1] In fact, knowledge-based goods and services already make up over 60% of OECD countries' wealth production,

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and the knowledge economy - which includes information & communication technologies, publishing, media and research - is the fastest growing part of the global economy.

But the changes are not just economic. One reason for this is that we are also seeing the globalization of expectations. These can be material expectations, but they can also be political, cultural and educational, and these expectations are beginning to challenge the role and sovereignty of the nation state. So to does the fact that knowledge-based industries are highly mobile and distributed, and thus not easily regulated within national borders.

However, the shift of power is by no means all upwards. ICT also empowers local communities (and geographically distributed virtual communities, too): we see this most clearly in the UK right now, as the Westminster government cedes authority both to the European Union and to a new parliament in Scotland).

And the knowledge society enables (perhaps requires?) more participative democracy and stronger civil society institutions - for if the key commodity is knowledge, then such values as openness, trust and legitimacy are crucially important. I should, of course, include Library Asssociations amongst the fundamental civil society institutions.

This knowledge revolution - or renaissance - is not just a matter for the richest countries, for the fifth of the world's population which consumes 84% of its total income. The Information and Communication Technologies have the potential to improve the lot of the most disadvantaged. There is now wide recognition that information and knowledge are key in the fight against poverty. As Kofi Annan put it back in 1997:

> Information and knowledge are expanding in quantity and accessibility. In many fields future decision-makers will be presented with unprecedented new tools for development. In such fields as agriculture, health, education, human resources and environmental management, or transport and business development, the consequences really could be revolutionary. Communication and information technology has enormous potential, especially for developing countries and in furthering sustainable development.

How might this happen? The UN Human Development Report 1999 suggested three principal ways:

- Firstly, by providing information - that is to say, for example, by allowing doctors in isolated hospitals, teachers in under-funded universities to access a wide range of current and desperately-needed information and distance-learning materials without having to meet the huge infrastructure and running costs of traditional libraries.
- Secondly, by empowering small players to compete in the global marketplace. The internet gives small and medium sized enterprises the ability to cut administrative costs, respond quickly to changes in demand, and supply world markets - in other words, to begin to challenge the big corporations. The emergence of India as a world player in the software industry demonstrates this, and there are plenty of smaller, non-technical successes stories too - such as Tropical Whole Foods, as UK company selling fairly traded fruits from co-operatives and small businesses in Africa which has been transformed by the ability to co-ordinate marketing and production information using e-mail, thus preventing stockpiles and shortages in a way which not long ago would have only been feasible for multinational corporations with integrated data networks.

- Thirdly, in the political arena, the internet can empower poor countries. In 1990 more than 90% of the data and the debate about Africa was held in the US and Europe, largely inaccessible to African policy-makers and academics. The internet can change that - but not just for governments. Non-Governmetnal Organizations have gained increased power and influence over the last decade largely because they can quickly generate global campaigns using the web. And of course threatened minority groups world-wide - for example in Indonesia and Yugoslavia - have made very effective use of the net to ensure that their voice is heard. The Internet is a major factor in the political shift away from non-interference in other countries internal affairs, which has characterised global politics over the last decade.

So, we find James D. Wolfensohn, President of the World Bank said to the UN just last month:

> "Don't let people talk to you about Internet being a luxury. While it is not an alternative to bread, it gives us the opportunity of bringing knowledge and opportunity to people at all levels throughout the world. It is time to grasp that. It is time for us to pledge to each other in international institutions...the private sector, civil society and [government] to come together, and make sure that this new age, not the agricultural revolution, not the industrial revolution, but the digital revolution, gives equity to poor people throughout the world." [ii]

But realising this opportunity will, before anything else, require a huge investment in connectivity. Is it really going to happen?

In a bid to leapfrog stages of development, some transitional economies are investing heavily in building up information age infrastructures. Malaysia's 2020 vision, for example, is a clear attempt by its Government to create within the next twenty years an information rich society, which they hope will confer on the country the status of fully developed nation. [iii]

In fact, as far as IT infrastructure is concerned, there is some ground for optimism. Thanks to the rapidly declining cost of wireless and fibre-optic networks, and supportive government policies, huge investment in several key countries does mean that the gap between the most developed nations (which already have more than one phone line per household) and the rest is narrowing fast. China, in particular, is showing phenomenal growth in telecommunicationss. In the 60 countries which account for 90% of the global telecommunications markets, 400 million new subscribers were connected between 1998 and 1998 - twice as many as in the preceding three years. [iv] So dramatic is the change that, in 1998, the UN's Commission on Science and Technology for Development could say:

> "It is remarkable that...the rates of growth of the telecommunications infrastructure are sufficiently rapid that convergence is foreseeable for the majority for the world's population" [v]

Globally, we can see near exponential growth in Internet use, too. Accurate numbers are more difficult to obtain, but probably close to half a billion people are already connected, and the UN expects the figure to reach 700 million next year. And remember just how quickly the web has developed - radio took 38 years to gain 50 million users, and television 13 years, but the web took just four. [vi] And, whilst it's true that the typical web user has been a rich, highly educated, English-speaking white man, it is encouraging that 35% of users are now women

(up from 15% in 1994) and that by 2003 non-English material will account for over half the content on the web" [vii]

Of course, there remains a close correlation between connectivity and GNP per capita, and UN forecasts confirm that a developed world temecommunications infrastructure remains a dream for very many countries, particularly in Africa. However, we must factor in the added impact of community-based telecommunications. I don't need my own private line to make a call, or my own PC to access the web. I'd like to share with you a couple of inspiring stories:

- The Grameen Village Pay Phone scheme is bringing the information revolution to the rural people of Bangladesh and is generating a new breed of entrepreneurs: village women. The women, having first taken a loan from the Grameen Bank to set themselves up in business, make a living by providing a mobile phone service to their neighbours. This enables them to earn an income, which is usually higher than the national average. The scheme is also popular among local people who find that the new service is making their lives easier and more secure. [viii]
- People in remote and disadvantaged communities in South Africa are gaining access for the first time to the Internet and other information age services via telecentres. These outposts of the Information Society, often community-owned and run, support local economic and social development by providing a wide range of information goods and services such as e-mail, fax, telephones, information on markets, weather conditions, crops, and access to public services such as distance education, telemedicine etc. South Africa's strong commitment to increasing the availability of information and knowledge for its historically disadvantaged peoples has put its telecentre policy at the forefront of international good practice. [ix]

With initiatives like these, it is quite feasible that the majority of the world's population will have telecommunications access within the next 15-20 years, and that this will deliver data, as well as voice, at affordable cost.

The knowledge society, then, is upon us. It has the potential to be a powerful tool for development - perhaps the key tool. But there are formidable challenges. Developing the appropriate skills and content will be far more difficult than building the telecommunications infrastructure. There are real risks:

- Will there be wide and equitable access? Or a growing divide between the information rich and information poor - both between countries and within individual countries - and, overall, a worsening north-south information gap, possibly leading to political conflict?
- Will content be varied and appropriate? Or will it be controlled by a small number of monopolies, meaning that certain content is marginalised? Remember how much global consolidation there has been in the publishing and media industry over the last decade, and the fact that in 1996 there were 5,300 database vendors in the US, and just 8 in Africa. [x]
- Will all user communities have the necessary skills? Or will information illiteracy be the new sign of exclusion?
- Will the values of the knowledge society encourage participation by civil society, promote open access, and respect a multiplicity of cultures? Or will the values be determined entirely by business? Or will dominant ideologies restrict debate?
- And finally, the knowledge society will require partnerships between governments, the private sector and civil society. Will we have the right partnerships in place?

Put together, these risks - or challenges - constitute "The Digital Divide". Alongside debt relief, organised crime, GM foods, AIDS and the environment, the digital divide featured prominently on the list of topics discussed at the Okinawa G8 summit a few week ago. The leaders of the eight most industrialised democracies have pledged themselves to pursue the aspirations of the Okinawa Charter on the Global Information Society and to find ways to bridge the digital divide. [xi] A Digital Opportunities Task Force has been set up to develop recommendations for global action in this area. It is unfortunate that criticism of the G8 summit's policy on debt relief - for example the ritual buring of a laptop at a recent demonstration - has damaged its important message about the digital divide. [xii]

G8 is by no means the only body committed to ending the digital divide. A few years ago, the World Bank began exploring the complex relationship between knowledge and development and made a case for the need to address information problems as a way to eradicate poverty and improve people's lives. The findings, which were later published in the groundbreaking 1998/99 Knowledge for Development report, were the subject of an international conference in 1997 in Toronto.

The conference resulted in the establishment of the Global Knowledge Partnership, a grouping of over 60 international organisations, united in their commitment to ensure that developing countries benefit from appropriate and sustainable investment in ICTs. The membership is drawn from government, donor agencies, NGOs, the media and the private sector. Prominent members include the Government of Malaysia, the European Commission, USAID, UNDP, UNESCO, Cisco, Sun Microsystems and the British Council. The World Bank Institute in Washington currently hosts the secretariat. [xiii] The GKP defines its purpose as "to work in partnership to help people access knowledge and harness ICTs that will help them improve their lives". It plans to help communities:

- Acquire knowledge, information and technology that can improve their lives
- Obtain the tools of knowledge such as telephones, radio, television and computers
- Use modern technologies, especially computers and the Internet, to increase opportunity for sharing and learning together.

The Partnership is currently developing a plan of action, which will bring partner organisations together to work on a portfolio of projects. The plan comprises over twenty projects addressing the partnership's three priority themes - access, empowerment and governance - and four crosscutting issues - youth, the media, gender and local knowledge.

IFLA has recently submitted an application to join the Global Knowledge Partnership. This is a welcome development, one that will highlight the pivotal role the information sector - libraries, publishers, information providers and content creators - play in the Knowledge Society. It is also an opportunity for us to reflect on the opportunities and challenges which face us, the library and information profession, in this new age.

In talking about the Knowledge Society I have focused on the digital divide as an issue in world development. I've done this because I wanted to tell you about the Global Knowledge Partnership, and tempt you to get involved in its debates and projects. But I also wanted to stress that the knowledge society is not just an issue for librarians in California, Cambridge or Kuala Lumpur. The digital divide exists

within nations as well as between them, and the solutions must be global.

So, what can libraries and librarians offer?

Well, quite a lot. As it happens, our traditional contributions -

- Providing access
- Working in partnership
- Structuring knowledge
- Imparting skills
- Preserving heritage
- and inspiring trust

all remain crucial in the knowledge society.

Providing access to information has traditionally been about buildings, based around institutions offering services to on-site users. Building tomorrow's libraries will not simply be a matter of installing rows of computers with Internet access: our users will increasingly expect to be able to access material from where they live and work. Providing access will increasingly be about developing electronic information services such as Internet portals and acting as a broker between content providers and remote users. At the same time, I believe that even in the most wired communities there will still be a demand for physical spaces where people can not just access knowledge but can discuss, learn from and support each other. In less advantaged communities, the knowledge society simply won't happen without public access.

Librarians have been surprisingly good at working in partnerships. We have a strong communitarian instinct. In the past we have needed to work co-operatively because no one library could have everything. That is less true in a digital world: in the future our key partners won't be other libraries but content providers and ICT companies. And we shall need to think of our users or customers as our partners too, because we shall be in the business of creating knowledge as well as providing information. For example, in universities we could be acting as electronic publishers; in companies we should certainly be acting as knowledge managers, capturing and sharing internal as much as external content; and in public libraries I believe our greatest value will be in strengthening communities by providing learning and networking opportunities.

The need to structure knowledge is as important now as it ever has been. Accessing the web today is like entering a large library, where there is no catalogue but where a deranged janitor has assembled in the lobby a few pages torn from the indexes of randomly selected volumes. We know, as information professionals, that this just won't do. Of course, we also know that traditional catalogues are not the answer. BrightPlanet estimates that, when all the content stored in databases in taken into account, the web is more than 500 times larger than the pages which can be found by popular search engines. [xiv] Highly sophisticated retrieval software using language pattern recognition can offer users a dynamic and personalised view of networked content. We'll need to understand and apply these technologies - and be aware of their limitations and dangers. My guess is that despite the application of Artificial Intelligence to content management, real users in the real world are going to find the librarian's skills in selection and quality assurance invaluable for some years yet.

In this context, imparting information skills might well emerge as our most valuable role. Information illiteracy will be a key threat to prosperity and social inclusion in the knowledge society. Helping our communities to become critical

consumers, confident learners and accomplished creators of knowledge will be a crucial task.

We will continue to be custodians of our cultural heritage, a role we share with archivists and museum curators. Our preservation role has already extended beyond paper-based materials to cover a multitude of different media, all with their own conservation problems. There is now a real danger that vast quantities of our history, recorded electronically, will be lost forever. Solutions to the preservation of digital content must be at the top of our agenda.

Finally, the matter of trust. It is perhaps naive to talk of a professional code of conduct for librarians - we work in various cultures, for public and private employers each with their own values and objectives. But what we do have in common is our role as intermediaries working on behalf of the consumer. The trust we have earned doing this will be difficult to retain, as we get more involved in complex dealings with content providers and in the manipulation of increasingly fragmented information. But if we can succeed, then the librarian brand will be in world-wide demand.

This paper has been nothing more than an overview. Our conference programme is ample evidence that librarians everywhere are actively engaged in finding practicable solutions to the challenges of the digital age. Yet most will admit that our role the knowledge society is neither fully recognised nor understood. All too often major initiatives bypass the library sector, and the skills we have developed over generations are marginalised. It is time for librarians to stand up. We need major public relations campaigns to raise awareness of what we can offer, and we need to have a voice in the debate about the digital divide at community, national and global level. IFLA's involvement in the Global Knowledge Partnership is a major step towards that goal and I wish it every success.

[i]United Kingdom Department of Trade and Industry, 1999

[ii]Janes D. Wolfensohn Statement made at the United Nations 2000 Economic and Social Council on 5 July 2000

[ii]http://www.wawasan2020.com/vision/

[iv]Carl Dahlman et al Republic of Korea: Transition to a Knowledge-based economy Washington: The World Bank, 29 June 2000 (Report No. 20346-KO) p22

[v]Robin Mansell and Uta Wehn Knowledge Societies: Information Technology for Sustainable Development Oxford University Press for The United Nations, 1998 p25

[vi]The Economist, 1998

[vii] http://www.techserver.com

[viii]http://www.grameen.org

[ix] http://www.centratel.com

[x] Bill Wresch Haves and Have Nots in the Information Age Rutgers University Press, 1996

[xi] http://www.g8kyushu-okinawa.go.jp

[xii] http://www.summitwatch.net/ story.php3?type=ok&id=10

[xiii] http://www.globalknowledge.org
[xiv] http://www.completeplanet.com/Tutorials/DeepWeb/index.asp

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