

Nuclear Libraries Networking

Sharing of resources and expertise

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Information is a critical resource and can count as a fifth factor of production, which is by no means inferior to land, labor, capital and entrepreneurship. Any form of social development presupposes access to information. However, there are a number of barriers and related challenges, which have been a stumbling block to enabling access to and sharing information and knowledge, particularly in the developing world. Hence, it is clear that sharing and strengthening global knowledge for development can be enhanced by removing these barriers to equitable access to information on economic, social, political, health, cultural, educational, and scientific activities by facilitating access to public domain knowledge.

The expression “digital divide” has become the most used term to describe the dichotomy of a country’s participation versus non-participation in the Information Society. At first, definitions of the digital divide were focused only on access to computers and the Internet, but access alone does not bridge the technology gap. As a result, there is a wider definition today encompassing three key points: access, training, and contents.

Information and Communication Technologies (ICTs) allow people anywhere in the world to access information and knowledge almost instantaneously. ICTs unlock content stores and, linking it to related information stored both within an organization and in other places, reveal previously unknown information. Organizations that put these technologies to use as part of their information strategy gain competitive advantage. Considering access, we can see that the Internet is expanding its territory rapidly and rather soon we might be able to get it anywhere. Governments are pushing for installation of computers in public spaces, such as libraries. The market also tries to respond to this new demand by the creation of Internet cafés and so on. These different approaches might well be part of the answer to bringing access for all.

We are aware, however, that ICTs should be regarded as tools and not as an end in themselves. Under favourable conditions, these technologies can be a powerful instrument, increasing productivity and generating economic growth. Many researches therefore clearly emphasized another factor, the necessary education and training to use ICTs. Users need training in order to participate in the Information Society. For many people, learning the potentialities of ICTs may be a bigger barrier than the lack of technical access. In recent years, technology has acted as an enabler: getting bits of information from one place to another both quickly and more flexibly. It has acted as a mechanism, an option for delivery, but today, the value of technology for content has become intrinsic. Moreover, the fantastic pace of evolution of information technology obliges any participant in the Information Society to continually improve one’s knowledge. Learning does not stop once one has completed a training course.

Individuals, organizations and communities are entitled to benefit from access to knowledge and information. For that they must have access to information, which is relevant for them. The contents, which can be found on the Web determine the success of use of ICT applications. There is an increasing demand for quality of content delivered within an ICT framework. Quality of content is often more important than quantity. Libraries are striving for more specialized information to support specific subject areas and unique research needs. Aggregated databases increasingly serve as pointers to full text sources residing elsewhere. As databases become commoditized starting points, the research process drives users to very specialized databases providing highly relevant results connected to unique content. Simplifying the research step in the decision-making cycle is a growing challenge. Changing the current workflow process may require a cultural shift in

organizations, but getting relevant information to users within the context of their work will reap productivity and bottom-line benefits.

Currently on the Web, the majority of websites are in English. English speakers were the first users of the Internet, so the predominance of their language was natural. But nowadays, the situation is changing. There is a necessity to have more information in other languages on the Web. Non-English speaking countries produce less local content, making the Internet less relevant to their users. It is necessary that more users become content creators and that more local websites are established. By doing that, non-English speakers also participate in the construction of the Web and produce sites that might interest others.

We shall focus our further consideration on how the international community is addressing the digital divide issues of training and content.

Heads of State and Governments of the Member States of the United Nations gathered at Headquarters of the United Nations in New York to participate in the Millennium Summit from 6-8 September 2000. The Summit was a historic opportunity to agree on a process for a fundamental review of the role of, and challenges facing, the United Nations in the new century.

The Secretary-General of the United Nations, in his Report to the Millennium Summit, outlined the priority areas in order to reduce extreme poverty by half, in every part of the world, before 2015. Building digital bridges was one of these areas. "New technology offers an unprecedented chance for developing countries to 'leapfrog' earlier stages of development. Everything must be done to maximize their peoples' access to new information networks".

The United Nations Millennium Declaration adopted by the General Assembly encourages Member States to ensure that the benefits of new technologies, especially information and communication technologies, are available to all.

The World Summit on the Information Society addressed this issue.

At the first phase of the World Summit on the Information Society in Geneva from 10-12 December 2003, the representatives of the peoples of the world declared their common desire and commitment to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge.

The World Summit declared its resolve in a quest to ensure that everyone can benefit from the opportunities that information and communication technologies can offer. Participants of the World Summit agreed that to meet these challenges, all stakeholders should work together to improve access to information and communication infrastructure and technologies as well as to information and knowledge; and to build the capacity needed.

The World Summit strived to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information, including open access initiatives for scientific publishing.

The Plan of Action, which was approved by the World Summit on the Information Society:

- Supports the creation and development of a digital public library and archive services, adapted to the Information Society, including developing a global understanding of the need for "hybrid libraries", and fostering worldwide cooperation between libraries;
- Encourages initiatives to facilitate free and affordable access to open access journals and books, and open archives for scientific information;
- Promotes long-term systematic and efficient collection, dissemination and preservation of essential scientific digital data;
- Promotes principles and metadata standards to facilitate cooperation and effective use of collected scientific information and data as appropriate to conduct scientific research.

The implementation of the UN Millennium Declaration and the Plan of Action, which was approved by the World Summit on the Information Society in Geneva in December 2003, can be illustrated by the following international projects:

Health InterNetwork

Spearheaded by the World Health Organization (WHO), the Health InterNetwork was created, bringing together international agencies, the private sector, foundations, non-governmental organizations and country partners under the principle of ensuring equitable access to health information.

The training component of Health InterNetwork concentrates on building the skills needed to put information into action: information access and use in daily work, basic computer and Internet skills, and hands-on training to use specialized public health information, literature and tools. A training advisory group is being established to guide the development and delivery of training courses, adapted to fit the needs of institutions with different information environments.

Within the framework of the Health InterNetwork, the Health InterNetwork Access to Research Initiative (HINARI) was launched in January 2002. Led by WHO, HINARI provided free or very low cost online access to the major journals from 6 major publishers in biomedical and related social sciences to local, non-profit institutions in developing countries. Twenty-two additional publishers joined in May 2002, bringing the total number of journals to over 2000. Since that time, the numbers of participating publishers of journals and other full-text resources have grown continuously. Country needs are the basis for content development and selection; for example, publishing local and regional public health information that is currently unavailable electronically is given special attention.

It has been described by WHO Director-General Dr Gro Harlem Brundtland as “perhaps the biggest step ever taken towards reducing the health information gap between rich and poor countries.”

Currently, the Health InterNetwork pilot phase is under way to test concept validity and feasibility. One of the major tasks during this phase includes building the Health InterNetwork portal, based on needs assessments and stressing priority public health programs. The portal will also make available information technology health applications such as geographical information systems and epidemiological tools, plus courses and training offered through distance learning.

Access to Global Online Research in Agriculture

Access to Global Online Research in Agriculture (AGORA) is another initiative to provide free or low-cost access to major scientific journals in agriculture and related biological, environmental and social sciences to public institutions in developing countries.

Led by the Food and Agriculture Organization of the United Nations, the goal of AGORA is to increase the quality and effectiveness of agricultural research, education and training in low-income countries. AGORA is available to students and researchers in qualifying not-for-profit institutions in eligible developing countries.

Launched in October 2003, AGORA provides currently access to over 500 journals produced by 17 publishers. The AGORA website has been developed in close cooperation between FAO and Cornell University, based on tools and systems developed by WHO for HINARI. Access to AGORA is password controlled, and potential users are required to register with FAO.

The second phase of the World Summit will take place in Tunis hosted by the Government of Tunisia, from 16 to 18 November 2005. Development themes will be a key focus in this phase, and it will assess progress that has been made, and adopt any further plan of action to be taken.

The key opportunity to contribute and be part of the World Summit is to actively participate in the preparatory process of the World Summit. This can be done, inter alia, by stimulating multi-actor cooperation and by building a constructive network.

In June 2002, the IAEA convened a high-level meeting of senior officials from academia, government, industry, the IAEA and other relevant organizations on the theme of “Managing Nuclear Knowledge”. A number of trends have drawn attention to the need for better management of nuclear knowledge: the nuclear workforce is aging, fewer young people are studying nuclear science and nuclear engineering at university level, and a growing number of universities are giving up their nuclear education programmes altogether.

Bridging the digital divide and preservation of nuclear knowledge are related issues

A relationship between these two items reveals itself in the need for easy access to nuclear data and information, and retention of valuable data and information (e.g. documentation, scientific and engineering studies, research results and related data) in countries where motivation and/or resources to preserve this material are not present.

Within the Agency's major programme on Nuclear Science and Technology, the subprogramme on Maintenance and Preservation of Knowledge is working to create an Agency Nuclear Information Resource System. This service would build on the Agency's existing databases of nuclear, scientific and technological documents, while networking with other libraries and electronic information centres, to provide an enhanced nuclear information resource.

The function of information resources management is a main one performed by all libraries. This includes selecting, acquiring and processing information sources in all formats. In recent years, the information business was affected by the difficult situation in the economy. This led to an explosion of costs of scientific journals.

Libraries responded to price increases for journals in the following manner:

- Libraries had no choice but to cancel a significant number of journal subscriptions and to reduce monographic purchasing. The effect has been that libraries have become more dependent on inter-lending and document delivery services in order to fulfill the requirements of their users. Libraries have directed a significant amount of energy toward improving document delivery models and interlibrary loan systems.
- Libraries have defined the best market place and acted as collective buyers of information products needed. The idea here is that more systematic purchasing on a local and national basis may provide savings and have more influence in the market place.

The situation of limited resources versus increasing needs will continue, no matter what the worldwide economy does in forthcoming years. Therefore, the institutions involved in information and documentation should work together more closely in order to ensure a sustainable supply of information. Co-operation between libraries themselves and between libraries and publishers, database producers, agents and other intermediaries should increase.

A number of publishers offer consortia access to the whole range of their journals. Consortium purchasing offers for the single library the opportunity either to get access to more journals than it currently has subscriptions to, thus, reducing costs of interlibrary lending operations and document delivery services, or to reduce the costs of acquisitions.

Given that no additional funding is available, libraries should establish partnerships and strategic alliances in order to fight the financial problems and at the same time take advantage of the new opportunities offered by scientific publishing and consortium licensing.

Trends toward nuclear knowledge management, in particular, call for new partnerships. Web standards and broad access to the Internet are creating a new, collaborative technological landscape. It is time for careful thought and tough-minded strategic responses.

A scenario for a strategic response of nuclear libraries to these challenges could be as follows.

Consortium of Nuclear Libraries

As a first step, the Consortium of Nuclear Libraries could be established. Activities of the Consortium of Nuclear Libraries could include:

- Acquisition/licensing of nuclear information resources required in support of the implementation of national nuclear Programmes;
- Inter-library lending of publications and document delivery services;
- Building up a united catalogue of nuclear information resources shared among Member States participating in the Consortium;
- Developing and maintaining a Consortium Website.

There are already many good examples of successfully operating consortia at the national level in countries of Africa, Asia, Europe, North and Latin America as well as at an international level.

The IAEA Library is a member of the Consortium of UN Libraries led by the UN Dag Hammarskjöld Library (UNDHL). In 2003 the Consortium had 54 participating agencies in 73 offices worldwide. The Consortium has a coordinator at the UNDHL and each participating library/organization has identified a liaison contact person.

Communication between UNDHL and the members is done either via email between the UNDHL coordinator and the individual member/liaison person or via a shared secure site on the Internet. All members have been provided with a set of IDs and passwords to access the site. This serves as a forum for consortium issues, but also as a site for broader inter-agency library concerns. The Consortium holds an annual meeting, the Knowledge Sharing and Information Management (KSIM) Meeting.

Through a Memorandum of Agreement the members agree to the terms and conditions for participating in the Consortium.

UNDHL or members may suggest new services for consortium purchases. If there is sufficient interest in a new service, UNDHL will investigate the terms of access for the service and, if possible, arrange for free trials of new services. UNDHL negotiates a subscription arrangement with the provider of the service on behalf of the consortium. UNDHL consults with the consortium members in negotiating such arrangements. The terms and conditions are communicated to the members and the members need to notify UNDHL in writing within 30 days whether it wishes to have access to the service or not.

A member may notify the UNDHL that it wishes to have access to an existing service at any time and the UNDHL shall, if possible, include the member in its subscription to such service.

The member is not obligated to participate in any service available to consortium members unless it has expressed an interest to participate.

Participation in the Consortium of UN Libraries helps to reduce the cost of acquisitions and to save staff time required for concluding license agreements.

The establishment of a Consortium of Nuclear Libraries could be a first step on the way to bridging the digital divide in the nuclear field.

International Nuclear Electronic Library

The Internet has completely changed the world of information over the last five years. This has led to many innovative digital library projects in many countries. Due to co-operation between the libraries, a virtual research library is gradually becoming a reality. For the end-user it means that the user can access a lot of information from the workplace, although we cannot yet speak of one-stop shopping for all kinds of information, that can be accessed in a reliable and cost effective way.

In an expanded digital environment, cooperation of nuclear libraries with other information holders could likewise be expanded. Synergy of the International Nuclear Information System and the IAEA Consortium of Nuclear Libraries could result in establishing an International Nuclear Electronic Library (INEL). Information resources of INIS and INEL would supplement each other and would further address the issue of the digital divide.

Information consumers are exhibiting three characteristics that need to be taken into consideration while developing the International Nuclear Electronic Library. Firstly, information consumers are spending nowadays more time online doing things for themselves. Secondly, these information consumers are generally satisfied with the results they get, whether from Google or from other Web services, even though the results may not be as authoritative, reliable, and accurate as librarians would like. Therefore, subject experts and information

professionals have to be employed to select and evaluate information sources to ensure sufficient credibility of INEL. Thirdly, information consumers, especially young adults, expect seamless access to whatever they want.

Future activities of the International Nuclear Electronic Library could include:

- Building up collections of information resources for nuclear knowledge preservation and maintenance purposes, including backward digitization of selected information materials;
- Developing new INIS-INEL information services which ensure seamless access to the whole of the INIS-INEL electronic resources;
- Providing a virtual Nuclear Reference Service to researchers through an international digital network of INIS National centres and nuclear libraries.

There are many virtual reference services in place in different countries. I shall give you only one example, which could be used as a model, if we wish. This is the Collaborative Digital Reference Services (CDRS), launched by the Library of Congress in the spring of 2000. CDRS provides a professional reference service to researchers through an international, digital network of libraries and related institutions.

The workflow looks like this: an end user sends the query through a CDRS member to the online Request Manager (RM), a software for processing and assigning. The RM searches a database of CDRS member institution profiles looking for the member institution best suited to answer the question. Matches are made on the basis of a set of data elements. Once a match on an institution has been made, the query is sent to that institution for answering. After the query has been answered, it is routed back to the original CDRS requesting library via the RM to allow for closing out the case and completing other administrative tasks. Further development of CDRS resulted in establishing the QuestionPoint – a virtual reference service with a growing membership of more than 300 libraries of all types.

This unique and innovative global network enables member institutions around the world to expand and enhance their information services through access to and delivery of materials owned by other institutions within the QuestionPoint service. This service also puts the collective expertise of libraries around the world at the service of an individual reference question.

The June 2002 meeting on Managing Nuclear Knowledge, which was mentioned earlier, came to the conclusion that urgent action throughout the nuclear community is needed to sustain the present level of deployment of nuclear technology. These actions should include, inter alia, the integration of existing nuclear databases in the form of an easily accessed “Nuclear Knowledge Portal”.

Synergy of INIS and the IAEA Consortium of Nuclear Libraries could result in creating a solid infrastructure for international co-operation in nuclear knowledge maintenance and preservation activities. Synergy of INIS and the IAEA Consortium of Nuclear Libraries is a necessary prerequisite for developing a worldwide “Nuclear Knowledge Portal”.

National INIS centres within INIS and the libraries participating in the IAEA Consortium should serve as the core institutions, but membership should be expanded by incorporating other stakeholders such as research institutions, academics, information centres of excellence which possess nuclear information resources.

All stakeholders would need to work on building strong links between library services and information systems and new developments in e-learning and scholarly communication. This means, for example, that libraries would need to be proactively involved in the development of institutional repositories and e-learning initiatives and would have to take a stronger role in the management of their institution’s intellectual assets. Libraries would also be required to devote more resources to digital content management and to think about preservation as part of the responsible stewardship of those resources.

Information and telecommunication technology is responding to the market requirements in science and economy quickly, flexibly, and intelligently. Information specialists and librarians also have to take proactive steps in order to anticipate future trends and requirements. Just reacting is not sufficient. Further developments would consider Web technologies and tools used by library users and would be adapted as much as possible to their working environment. The focus would be on solutions that support information and knowledge management and render work processes more efficient.

Conclusion

The development of information and communication networks, especially in specialized fields, is a necessity for many reasons:

To bridge the digital divide gap, thus, allowing all societies to participate in the vast amount of information available and to acquire the knowledge extracted from this information allowing to close the social and scientific gap more easily;

To make better use of the economic resources available while endeavoring to channel and distribute information on a more equal and relevant basis;

To collect, protect and preserve valuable resources of information and knowledge as a foundation and heritage of human efforts in science, culture and technology for future generations and to further development for all.

The idea of forming a consortium of nuclear libraries to encompass all the above-mentioned goals is a common sense one in view of the complex and sensitive area of nuclear energy and its applications. Action should to be taken by all members of the nuclear community to facilitate the networking of their respective libraries and information centres to further information and knowledge exchange and to have a reliable collection of resources to offer those, who want to join the nuclear community. The IAEA Library, as part of the IAEA Consortium of Nuclear Libraries, and INIS could play together an active role in building such a platform, which would form the foundation for a worldwide Nuclear Knowledge Portal.