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Introduction and seminar overview

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As a librarian and President of IFLA, the International Federation for Library Associations and Institutions, it is a great honour and pleasure for me to open this seminar, which, given the almost 500 applications received for 250 places, already seems a great success. With 30 nationalities, of which 19 European, we had to refuse many applications. However, we have organised the broadcast of the event on the Internet, with the help of the webcast service of the IN2P3 research laboratory. In addition, I would like to thank the various sponsors of this event, in particular the Ministry for Research, INSERM, the CNRS, INIST, ICSTI, CODATA and ICSU.

The purpose of our meeting is to bring together producers, disseminators and users of scientific information to exchange points of view and discuss solutions. Although we are aware that this seminar will not provide rapid solutions to all the issues concerning free access to scientific information, it is essential to organise these kind of meetings to promote dialogue. The meeting should not just reiterate existing positions. Instead, it should allow us to listen to the opinion of others. Furthermore, this meeting should aim to advance the different philosophies concerning publishing. As a result of our consultations, we should seek to provide solutions that are acceptable and advantageous to all the scientific community. In this regard, the community of librarians supports you and hopes to find a balanced solution to providing information to users when they require it and at a reasonable cost.

The advent of the Internet and new technologies have allowed the emergence of new players who are not always capable of taking stock of new sectors in which they become involved. Equally, they have spawned new concepts, such as metadata. Unfortunately, librarians are often excluded from discussions related to the access to information in this field. In our view, this reveals a wider current trend of excluding information professionals in favour of tools directed at end users.

Over the past few years, IFLA has been negotiating with the International Publishers Association (IPA) to produce a number of joint declarations on electronic publishing and archiving and on copyright. These can be found on the IFLA website. In addition, we have been working on a joint IFLA-IPA declaration on Open Access. Our goal remains access to quality information from any location at a reasonable cost as well as long-terms access within existing standards. Although many OA initiatives present new models, it would be illusionary to completely replace the existing system. Much remains to be done to facilitate access and to develop new methods that can support existing structures of information dissemination. In this regard, during the coming two days, we will hear of diverse experiences.

Public research organisations have an important role in discerning the feasibility of potential projects and the circulation of information in this area. In particular, they must study the cost of access to information in developing countries. Tomorrow's round table discussion should allow us to hear points of view of players involved in communication of information between the North and South.

A report by Jack Franklin on the state of the art of Open Access has been distributed to the participants. This report is designed to establish a number of basic concepts, it is completed by a list of definitions included in your delegate pack. Finally, I would like to wish you the best of luck for this seminar.

Kurt Molholm
President, International Council for Scientific and Technical Information (ICSTI), 51 boulevard de Montmorency, 75016 Paris, France

It is wonderful to see such a crowd assembled to discuss the topic of OA to scientific and technical information. I would like to thank INIST and INSERM for organising this event. My organisation, the International Council for Scientific and Technical Information, ICSTI, offers a unique forum for interaction between organisations that create, disseminate and use scientific and technical information. No other organisation includes members from the entire spectrum of scientific communications. Our mission cuts across scientific disciplines and international borders to form a truly global community. ICSTI's aims are the provision of leadership in the promotion of the value of scientific and technical information to ensure economic and social progress and to enhance access and delivery of information to industry and business. Moreover, we offer a point of information exchange for our international peers and provide a forum for international participation in information flow.

For the past seven years, we have sought to increase awareness in the scientific, publishing, archive and library communities of the critical need to preserve scientific work. In this regard, we have received the co-operation of all international bodies, including UNESCO. Through ICSTI conferences, we have gathered key stakeholders to promote better understanding of the many issues involved, aid the transfer of knowledge and strengthen the necessary collaboration between scientists, publishers, archivists, librarians and data managers. Last September, in Washington DC, the US National Academy of Scientists hosted a forum to discuss various issues concerning scientific and technical information in the public domain. In March, UNESCO will host a follow-on international symposium of OA and public domain scientific data.

Today, the role of free-flowing scientific and technical information and its importance in scientific discovery is being greatly impacted by the Internet and intellectual property rights. A few weeks ago, the US National Academy and the Centre for Strategic International Studies co-sponsored a public meeting in Washington DC. The goal of this meeting was to encourage scientists and policy makers to commence a dialogue on whether current publication policies and practice in the life sciences could allow future misuses against society in general. Thanks to the Internet, it has become obvious that copyright and privacy concerns have become essential concerns of many communities.

Today's seminar aims to discuss economic and technical aspects and initiatives on OA, by providing an overview of the situation concerning access to scientific and technical information. As well as providing information and planning data for sponsoring bodies, today's outcome is intended to provide input to the ITU/UNESCO activities surrounding the World Summit on the Information Society at the end of this year. Again, I welcome you and hope that you enjoy these two days.

Pierre Oudet
Professor, STM Advisor, INSERM, 101 rue de Tolbiac, 75654 Paris Cedex 13, Paris, France

In my presentation, I would like to cover the set of reflections conducted over 10 years, leading to a pilot operation at INSERM. This pilot is aimed at solving a large number of problems that were identified by INSERM, the biology and medicine research community and by discussion with EU and US

colleagues. Among the problems identified that could be solved through an interactive and open information access system, are the current limits on biomedical information access not encountered during the 1970s and 1980s.

Firstly, the costs associated with placing all research information on the Internet are prohibitive. These cost include the cost of stocking the results of all scientific research, which features a much broader volume of data than publications alone. Secondly, the current refereeing and selection system places serious limitation on the research community. We must clarify if the peer review process is suited to the efficient collection and dissemination of biomedical information.

Before trying to solve these limitations, we need to study several points. Firstly, with the increasing number of journals, researchers and results, we must seek a method of managing this high throughput of creating and maintaining dynamic links between pieces of information. We have indeed extreme difficulties to develop and maintain acceptability to, as well as methods to analyze and evaluate, rough data that are contained in texts, images, sound, etc. Secondly, I would like to highlight the problem of peer review and the validity of the present system. Prior to publication, we are no longer capable of checking the validity of all published results. At present, we can only verify the quality of techniques and necessary controls before publishing the results. Scientific publication is only valuable with a peer review. However, no current real time evaluation system is proposed for increased throughput. We cannot accept a situation where, six months after publication, published work is withdrawn due to evaluation problems. Now is the time to think about an improved mode of assessment.

Furthermore, without wishing to repeat points to be discussed in later presentations, I would just like to underline the importance of the role of bio-information engineers, or managers of factual databases. This speciality profession should represent a new use of librarian's expertise, where the person in question enjoys a complete and open access to all information in a given domain. Amongst the range of data and sources available, there are different types of databases. Until today, the bibliographical reference database has experienced the greatest popularity. However, a lot of information, such as full text and subchapters, were missing from this facility. Lately, ancillary data, which is essential to thorough research, has only been available on the publishers' or researchers' sites. Therefore, the need to search the bibliography, the integral text, complementary documents and the ability to use all required software tools created a complex trail of information research. The complexity involved in such a search has spawned a new job description that librarians and others should recognise.

Concerning factual databases, the NCBI in Washington DC is researching a wonderful idea of providing access to all databases (sequences, structures, ...), based on a single interface, with links to PubMed-Medline as well as to online textbooks. For those unaware of this development, I would recommend logging onto their website to see all the useful links between bibliographical references and full texts.

Returning to the pilot project organised at INSERM, we are trying to identify the points that are solvable and the methods that could be applied to this end. Globally, we decided to set up a centralised structure in which all published texts by INSERM supported research groups are brought together under one roof, allowing complete and free access to the INSERM community. Once the selected work is complete, we link the raw data plus ancillary data. Consequently, we can monitor the development of knowledge, locate expertise within the institute and analyse different collaborations. Simultaneously, it represents a useful tool for research management and streamlining. Basically, we decided to archive researchers' full text, pictures and associated documents.

In practice, the researcher connects to the site where he finds a model and deposits his text with no style constraints. The material is put under world wide accepted DTDs or XML formats and is thereafter

fully searchable, linked to related information and bibliographic references. Using a standard software tool for statistical professionals, the article is structured and indexed. This tool searches terms that are statistically relevant to a given question before proposing a range of articles and the most common relevant researchers found on the database. Once the information is stored under the responsibility of the institute, we ensure maintenance and availability. The development of this system facilitates European and trans-Atlantic collaboration. In addition, the user can access articles and scalable diagrams and the articles are interactive.

In summary, for an institute financing research, the "pre-print" database concept makes it possible to stock available production in a structured form. Obviously, this work is done within the framework of international agreements and links with publishers' websites are authorised. Moreover, in the future, we plan access to all information generating links with other databases. We have to assemble or develop necessary computer tools to interact with the different nature of data and knowledge. I hope you appreciate the urgent need to develop such initiatives. Gradually, these ongoing projects in Europe and the US should lead to improved collaborative work.

Dominique Wolton
CNRS Research Director, Sociologist, Writer

My presentation will move away from the previous focus to a more political science perspective, focusing on communications, politic, technology and society.

Recently, we have witnessed two major revolutions. Firstly, during the 20th Century, the status of information changed dramatically. While it has always been an important cultural good, reflected in democratic expansion, information's commercial value has grown in importance. Today, it has become more valued, circulates faster and has become an economic good. Thanks to the second change, the technical revolution, the arrival of mass communication the Internet means a shift from scarce information to an information overload. With information more available than in the past, our main challenge consists of distinguishing between information and communication. As contemporaries to this revolution, we are constantly in awe of technical advances.

In the past, information was considered as a means of ensuring understanding and peace: the more people communicated, the less likely war became. Indeed, for three centuries, this became the cornerstone of Western philosophy. Now that it has become an industry and access has grown significantly, this guarantee is no longer valid. The scientific community has always promoted the ideas of sharing and progress. Although science and technology values economic stakes and have become an essential weapon in international economic battles, the sciences traditionally supported an idealistic view on the usage of information. When the Internet emerged, it was presumed that, since scientists used it, all other end users would adopt a similar disinterest in commercial gains. However, regarding our position on information, we are currently in an ambiguous situation. Consequently, seminars and discussion are essential. Thankfully, the international economic and scientific communities are moving from fascination to reflection. Besides the economic issues, social and cultural issues remain complex: at the end of the pipes, the end users are still people, societies and cultures with less rationale than the information systems.

We dream that social organisations are as rational as the information system. However, there is a discrepancy between information and communication. While information only concerns the transfer of data, communication has to consider the end user as a human being. Within the use if IT systems, we need a closer look at words. In this regard, the concept of the knowledge economy needs closer examination. When we use the terms "economic globalisation" or "information globalisation", it is important to distinguish between the two concepts. In many respects, the cultural and political implications of these terms

differ and we need to take old words that have enabled us to wage political and social battles for centuries. Once we move the concept of universality from a traditional domain to the information technology domain, we need to reflect much more profoundly on the consequences.

In my opinion, the battle for world education will prove the most important battle of our age. Although e-business will always find the means to self-regulate, if we manage knowledge from an economic perspective, there will be serious social and political repercussions. To defend our positions, we need to base ourselves on the concepts of the public domain. Secondly, the information revolution is forcing us to think about the concept of information. For example, I have identified three classes of information where the intellectual process differs. Firstly, press information has nothing to do with 95% of network information. Moreover, journalists are still unaware of this disconnection. Secondly, knowledge information does not form a great part of the information economy. Despite the scope of knowledge in this area, it is identified with the press's situation. Thirdly, the myriad of service information is experiencing a boom. The values of this sector are different from the first two.

Paradoxically, humanity has spent three centuries fighting for freedom of information only to see the price of information rise.

In the future development of information, three professional groups will have the key functions. Of course, archivists and information professionals have an essential role. As scientists and journalists, we use information but do not value them nor are we aware of all the services they can offer us. I do not understand why all communities have failed to access the value of these information navigators.

Secondly, journalists play essential an role in globalisation of information. In many respects press information is unique. Let me remind you that about 6 000 agency journalists provide 95% of press information. The rest is duplicated. Moreover, the four largest international companies are communication companies that control a vast flow of information. In France, we are fascinated by globalisation and the guarantee of democracy. During 150 years, we thought that diversity would guarantee freedom of speech. However, today, we seem to think that concentration guarantees freedom of speech. Clearly, recent events, such as the Vivendi crisis, have proven this idea to be false.

The third group with great responsibilities is the community of researchers and the academic world. Our values transcend the purely economic approach. These three groups are responsible and need to work together.

The first key to progress in the place of information systems remains the reduction of conflicts between the old and new media. If the technologies are new, the problems are old. In this regard, we have to emerge from our technical fascination. Instead of opposing economics and politics, we should reconsider their relationship. To this end, we should prioritise the general interest and, as scientific and technological communities, we are of real economic value. Therefore, we have an essential balancing role to play.

Without the simple idea of intermediates, there is no universal access to knowledge. In the sea of information, no individual has access to all. Consequently, he must use the established hierarchy. We have to work as scientists to promote the idea of emancipation in OA. However, the more information we have the more intermediaries we need.

In conclusion, I would like to state three points. Firstly, in the future, information will form a major political debate. At the moment, we are still fascinated by the speed of development. Secondly, scientists have to assume their responsibilities. Over the last 50 years, we thought scientists would play a major role provided we did not get caught up in the corporate aspects. In this regard, our best hope consists of thinking as freely as possible and participating in open and honest exchanges. Let us think together and provide our own experience.

The most complex areas are not natural or life sciences but social sciences. After all, it is people who fight and argue. In any information debate, we have to keep this in mind. In social sciences, we encounter the problems of cultural diversity and diversity of languages. We all dream in our own language, display distinct cultural differences, and the ideologies of men and women differ. Any potential co-operation in this field must consider these aspects. In my experience, our problems cannot be solved by Biology, Physics or Chemistry alone: all the sciences need to communicate. In this respect, the CNRS has a key role.

Discussions

Christine Deschamps: As we are 10 minutes ahead of schedule, we can take some questions.

Jean-Paul Ducasse, Lyon University: Why do you want to retain all your information for your own communities? Why do you not open access to the rest of the scientific community?

Pierre Oudet: We did this because we have to start somewhere.

Bernard Lang, INRIA: I liked the presentations. It is clear that exchanges must occur between the players and creation can only take place in an existing context. However, despite the possibilities created by the Internet, it is worrying to note an extremely violent reaction to the issue of intellectual properties. Linked to the aggressive reaction to patents is the fact that one can now patent almost everything. Unfortunately, the Ministry is also participating in this reaction without the existence of a way of assessing the risk of this reaction. As we are on the verge of patenting method software do the speakers agree that this will form an obstacle to learning and know how?

Pierre Oudet: Concerning free access to information, given that we are organising discussions to structure OA, it is interesting that we do not enjoy complete OA. Consequently, we are targeting total OA. Regarding patents, I am less pessimistic. A patent is only useful if it is used. For example, we have seen the fall in the stock value of companies involved in the sale of genetically modified organisms. Equally, following initiatives by American colleagues, they succeeded in patenting the human genome. American and European institutions competed to obtain this information. A lot of developments are under way in this area and we need to increase investments.

Dominique Wolton: The political battle for OA is positive. Even if it is idealistic, it promotes discussion and remains worthwhile. If scientists were able to wage this battle it would be useful. However, it also involves other sectors. Finally, we have identified common interests. Secondly, in the WTO, important discussions on patenting are ongoing. In addition, the EU directive is unclear and fails to focus on socio-cultural issues. They have trouble making people understand the cultural aspects. Since its inception, the European economic project has achieved a great deal but now a new discussion on the cultural dimension is essential.

Within the WTO, the US has a certain vision and wants as little regulation as possible. In this regard, Europe has yet to define a single policy. Equally, as a player and a tool, the scientific community faces a complex task and threats. As a result, we need as many social groups as possible to share knowledge on a common problem. The overriding concept should remain the general interest. Yet, we can draw on past experience: this is not the first time the world has faced a global crisis.

Christine Deschamps: Over the last few months, IFLA has been in discussions with the WTO on costs and barriers on free circulation.

Kurt Molholm: We have to realise that today's virtual world is much different to the paper one we have known for many centuries. In this regard, we are beginning a new journey. We have only been here for five or 10 years and the Internet is bringing a new range of information and knowledge to all. As relationships change on this journey, experience has taught me that patience will prove essential.