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‘ACADEMIC AND SCHOLARLY GREY’

GreyNet

The Grey Journal

An International Journal on Grey Literature

COLOPHON

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About TGJ

The Grey Journal is a flagship journal for the grey literature community. It crosses continents, disciplines, and sectors both public and private. The Grey Journal not only deals with the topic of grey literature but is itself a document type classified as grey literature. It is akin to other grey serial publications, such as conference proceedings, reports, working papers, etc.

The Grey Journal is geared to Colleges and Schools of Library and Information Studies, as well as, information professionals, who produce, publish, process, manage, disseminate, and use grey literature e.g. researchers, editors, librarians, documentalists, archivists, journalists, intermediaries, etc.

Grey Literature is defined as "information produced and distributed on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing i.e. where publishing is not the primary activity of the producing body."

About GreyNet, 1992-2007

The Grey Literature Network Service celebrates this year its 15th Anniversary. GreyNet was established in order to facilitate dialog, research, and communication between persons and organizations in the field of grey literature. GreyNet further seeks to identify and distribute information on and about grey literature in networked environments. Its main activities include the International Conference Series on Grey Literature, the creation and maintenance of web-based resources, a moderated Listserv, and The Grey Journal. Currently, GreyNet is engaged in the development of a distance learning course for graduate and post-graduate students.

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EDITOR'S NOTE

Since TGJ's launch in 2005, The Grey Journal has been geared to colleges and schools with programs in library and information science (LIS). Starting the coming academic year, 'grey literature' will be offered as a special topics course accredited within distance education settings. Towards this goal, a syllabus has been drafted and courseware has been compiled by the Grey Literature Network Service. GreyNet's course module focuses on upper-level undergraduate and graduate students and contains three component parts: assigned readings, case studies, and research proposals. The assigned readings rely in part on content from The Grey Journal as well as other resources online available via Library, Information Science & Technology Abstracts (LISTA-FT), a full text database. Negotiations are currently underway with LIS faculties and the initial results from this pilot enterprise will be presented during a panel session on 'Grey Literature and Education' at the Ninth International Conference on Grey Literature held this December in Antwerp, Belgium. In the section, 'On the New Front' and overview of the GL9 Conference Program and Timetable is available.

In this issue of TGJ titled "Academic and Scholarly Grey", the first three articles deal with theses and dissertations, belonging to the more traditional types of grey literature. However, even these document types have undergone significant change in format due to the electronic environments in which they are currently produced and archived. The next two articles in this thematic issue address models for archiving and publishing in the academic sector. And, the final article in this issue concludes with a research project that recently received a three-year grant from the Social Sciences and Humanities Research Council of Canada. This research project will no doubt serve as a model in the scientific and technical assessment of grey literature for policy and decision making in sectors of government, academics, as well as, business and industry.

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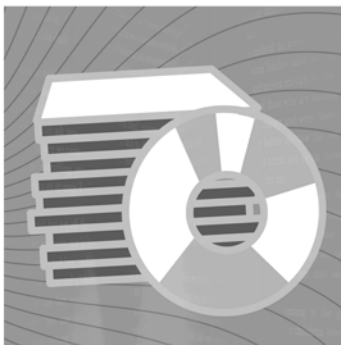
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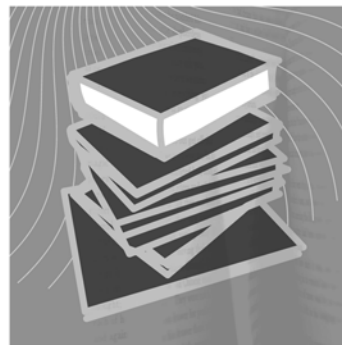
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Importance of doctoral theses and its access: a literature analysis

J. K. Vijayakumar (*Antigua*) and Manju Vijayakumar (*India*)

Abstract

Academic research is quantitatively and qualitatively considered as the foundation for furthering the future investigation in any field. At the same time, the results of doctoral research is not disseminated in public domain due to various reasons of policies such as copy right, IPR, time lag, publication procedures etc. Information Communication Technologies playing a major role in the drastic change of academic scholarship during the last decade, especially in creation, access and dissemination of information. Web publishing makes the Universities to alter and strengthen the process of creation and communication of academic research through reconsidering the ways and practices in scholarly publishing and archiving practices. We are fortunate that Universities and policy makers already started taking advantages of web publishing in this important area of scholarly communication.

Doctoral Research in Universities

In a global scenario, doctoral research programs are considered to be essential to the development of Higher Education, where Universities are the key players in carrying the major responsibility for molding good researchers at different stages in their career. In fact Universities are substantially investing in conducting of research, which leads to degrees like Ph Ds. It is also found that the number of students undertaking and completing higher degree theses has been growing rapidly, all over the world in recent years, and a country wise statistics of some potential countries are provided here. According to *National Science Foundation (NSF)* survey, during the 10-year interval between 1988 and 1998 the U.S. universities collectively awarded almost 400,000 doctorates, as compared to a total of 316,413 for the preceding 10-year period. They have awarded more than one million doctorates (1,174,442) over the last 40 years, of which 33.8 percent were granted during 1988-98 (*NSF, 1998*). The latest survey from *NSF* shows that 423 universities in the United States that conferred research degrees awarded 40,710 doctorates during the 2002-2003 academic year, that shows an increase of 1.9 percent from the 39,964 doctorates awarded in 2002, and a 4.5 percent decline from the all-time high of 42,645 in 1998 (*NSF, 2003*).

Between 1996 and 2000 there was a 27% increase in the number of doctorates awarded by UK institutions, which stood at 13,670 at the end of 2000 (*Beckett, 2002*). *Genoni and Cowan* estimated that the 19,254 enrolments in the year 1991 for higher degree by research programs in Australian universities rose to 37,374 by 2000. They also accounted that during the same period higher degree by research completions rose from 2491 to 5325. That means a total of 26,620 PhD theses were completed during the decade from 1991 to 2000 in Australia (*Genoni and Cowan, 2002*). *Lee, Kim and Hwang* say that in Korea approximately 3,500 doctoral degrees are awarded every year comprising all Universities (*Lee, Kim and Hwang, 2001*). Indian Higher Education system has around 320 Universities and other institutions of national importance offering Doctoral Programs (*UGC Website, 2005*). University Grants Commission, the apex body of Indian Higher Education provides the statistics of Doctorates awarded in India during 2000-01 as 11,534 and during 2001-02 as 11,899. (*UGC Website, 2005*). Again another statistics based on Ph D Theses Database received at Information and Library Network (INFLIBNET) shows that nearly 8000-10000 Ph Ds are awarding in India, every year (*Vijayakumar and Murthy, 2001*).

Importance of Doctoral Theses

The term PhD is short form for Doctor of Philosophy (Philosophiae Doctor), which is frequently referred to as a Doctorate. As a PhD scholar, one is expected to pursue structured, supervised research into one of the many related fields in which the Faculty has expertise. At the end of this period they are expected to write an extended thesis, demonstrating evidence of their capacity to pursue scholarly research. The results of this research should make an original contribution to knowledge and be of a standard appropriate for publication. Before pursuing for a Ph D one need to be sure that he/she has a keen personal interest in the topic to be researched - and an interest in the process of research along with a strong academic background with a good first degree (*Lancaster University Management School, 2005*).

Thomas, Nelson and Magill pointed out that although the dissertation is intended to be a vehicle for the publication of new research, its traditional five or six chapter format renders it unsuitable for publication without substantial revision to make it conform to the genre of the journal article. Due to the extensive revision, 1/3-1/2 of all dissertations remains unpublished (*Thomas, Nelson and Magill, 1986*).

It is a fact that a thesis or dissertation must be "an original contribution to scholarship". Another purpose of a thesis is to be the basis of a book that, when published, will become part of the scholar's documentation in his professional career and scholarship. There is no doubt about that Doctoral theses are contribution to the world of knowledge. Further the results, conclusions and recommendations invariably have impact towards the economical and social up-liftment. In addition, the thought content also paves way to new vistas of investigation and encourage inter-disciplinary approach, which will strengthen the fabric of life styles in the society. Thus this is an ongoing process in the higher education scenario.

Dissemination of Doctoral Research

Isaac and Stephen identified that its access have traditionally been quite limited as to what they can say and do, and even more restricted with regard to when, where, how and to whom they are accessible. They pointed out that these limitations are established and maintained in part, through policies set by committees, departments, graduate schools and libraries, which reflect the regulatory bodies' limited conceptualization of what the dissertation is and should be. They established that accessibility by the scholarly community to Dissertations has not historically been a priority, where as typically, only two copies of a print dissertation exist and are available without a fee—the archival copy, which remains a permanent part of the university library's collection, and the circulating copy, which may be available through inter-library loan in few countries (*Isaac and Stephen, 1992*).

Brace argued that the importance of published theses as a primary source for the scholars who are pursuing research at present varies by discipline. Humanities scholars regularly search through dissertation abstracts for finding out dissertations relevant to their topic. There are many disciplines in which the dissertation is not used often as a primary source where it will show up as a book or journal article. For these disciplines, the dissertation has another function that of a kind of proto-document that will be turned into a book or scaled down to articles in peer-reviewed journals. This practice reveals that there is an assumption that if the information is "good enough" it will show up somewhere else in a more "respectable" form. However we notice that the fact is about half of dissertations have never got published in another form. Could it really be the case that all of this information is irrelevant or unimportant? (*Brace, 2002*).

Urs identified the lacunas in publication, control and access theses information in India, where most unpublished theses are hard to get hold of, as they are filed only in the university library where the student has worked. The Indian doctoral literature is beset with many problems like Lack of Systematic acquisition, Lack of Access, Uncertain publication practice, Enormous Growth in the number of theses etc. Printed theses remain locked in the libraries and are consigned to be frozen assets. (*Urs, 1999*).

All such observations are relevant while dealing with the Doctoral theses, with considerable educational, social and economic value to the community at large, which form a rich information source of original research data enveloping the entire world of

subjects. Even a part of this research information is disseminated through journal articles or books, much of it unpublished or published in an abbreviated form. Now a days, the decrease in publication of academic monographs and the growing number of theses being awarded, where the full dissemination of this valuable information has become insufficient. Even the Universities and their libraries collecting, recording and providing access to printed copies of theses, the access to it suffers from the absence of a single, easily accessible bibliographic source which provides comprehensive coverage of completed theses, regional, national and international level.

Present Scenario of Ph D Theses Collection

Isaac and Quinlan identified the limitations of access and publications of doctoral theses as traditional because of the policies of regulatory bodies (*Isaac and Quinlan, 1992*). *Edminster* supports this finding in the doctoral research (*Edminster, 2002*). *Mathews and Wiggins* opine that graduate schools and university libraries take great pains to ensure that theses documents are prepared according to accepted standards and are preserved for future scholars to examine, because of its valuable information content (*Mathews and Wiggins, 2001*).

Ives and McLean describe the problem of keeping only paper copies of dissertations, without reliable back-up in different medias to avoid its loss due to theft, fire and decay and to save valuable shelf space. They also give the example of USA where, Pro Quest is the designated "national repository" by the Library of Congress, who deems the Pro Quest dissertations as a remotely held collection. The Library was interested in having their retrospective titles placed in this collection since microfilming and digitizing an institution's dissertations and master's theses are important ways to showcase its research and academic history, provide access for students and researchers from a single entry point and enhance the institution's standing in the international academic arena (*Ives and McLean, 2004*).

In NDLTD website, *Fox and McMillan* admit that due to the services provided by UMI access to dissertations has increased in recent decades at International level. With a database containing about 1.5 million abstracts, UMI microform archive allows printing on demand of microform or paper copies. But they point out that even though this service is useful, the high cost of copies and other concerns lead to relatively few purchases, almost never more than 7 per year for any one title. Their study of circulation data from the Virginia Tech library indicates that the average number of times a thesis or dissertation is checked out per year is small (2 or 3, respectively, during the first 6 years after completion. They also agree that theses may be locked up --- the only method of restricting access --- but it is important only when there are issues of security or proprietary information or pending patents (*Fox and McMillan, 1997*). *Young* informs the latest service of U M I from 1997 by making new dissertations available in an electronic form, which can be ordered, for about \$20, over the Internet (*Young, 1998*).

Weisser and Walker point out that traditional method of archiving and storing theses and dissertations are inefficient and unwieldy. They also point out that print forms have limitations: they cannot include multimedia elements, they cannot include interactive elements, and accessing them through interlibrary loans or repositories such as UMI can be time consuming, expensive, and limiting. They for see the changes in electronic publishing of theses by changing how scholarship was produced and disseminated, where technological innovations are having an impact on our conceptions of reading, writing, research, and publication (*Weisser and Walker, 1997*).

Friend outlines the scenario from U K and identifies that even when a good indexing tool to theses exists in a particular country, such as the *Aslib Index to Theses* in the UK, there is a time-lag between the completion of the thesis and its appearance in the indexing publication. He says that if universities were commercial organisations they would want a potential market to know quickly about their achievements, but so often within universities the completion of the thesis is seen as sufficient in itself, without any need to make the results of the research available to anybody else (*Friend, 1998*). It is true that the best research is often published soon after the completion of the thesis in commercial publications like academic journals, but what happens to the thousands of theses that are completed and are not published? The answer is that they languish on library shelves, taking up valuable space and are rarely consulted. UK

Theses Online Group conducted a survey in UK Universities and identified that Theses are used in libraries rather than in departments and found that consulting theses is difficult because of the physical constraint of consulting in a particular place, a library building (*Roberts, 1997*).

From Australia, *Bate* reports the lack of easy access and lack of usage of theses literature due to a number of factors: lack of knowledge that the thesis exists; lack of information about the contents of the thesis; lack of ready availability. She advocates that electronic theses are easily located as well as easily and readily accessible if delivered over the web (*Bate, 1999*). *Cowan and Genoni* admit that it is an issue of considerable importance that theses are adequately recorded in easily accessible and searchable bibliographic sources. They also admit that despite the work done by libraries in collecting and recording theses, access to this material currently suffers from the absence of a single, easily accessible bibliographic source providing comprehensive coverage of completed theses (*Genoni and Cowan, 2002*).

Things are not different in other parts of the world. *Ubogu* says that the unavailability of information on T&Ds in most African countries has been a source of challenge to many librarians. There have been various efforts at some form of bibliographic control of T&Ds produced in some countries through the compilation of bibliographies or abstracts of theses and dissertations, some at national levels and others at institutional level. These compilations rarely leave the borders of the institutions/countries where they were compiled (*Ubogu, 2001*). DATD (Database of African Theses and Dissertations) Project website says that access to theses literature is not easy, even within the institutions where they are submitted. In Africa particularly, they are an under-utilised information resource, because the nature their production is very limited and the only copy available for public access is usually in print and can only be consulted physically in a university library (*DATD Website, 2005*). In China also even though Theses and dissertations have long been regarded as the basis to researchers, most of them languish in obscurity in university libraries and archives (*Jin, 2004*).

Bibliographic Control of Doctoral Theses

Since the Doctoral Theses constitute an important part of scholarly information, there were initiatives in several countries and at international level to have a sufficient mechanism for its bibliographic control, through printed indexes or online databases. *Dissertation Abstracts International*, *Dissertation Abstracts On disc* and *ProQuest Digital Dissertations* (all are from ProQuest / UMI), *Index to Theses* by ASLIB, *The BRITS Index* from British Library, *American Doctoral Dissertations and Comprehensive Dissertation Index* from USA, *Union List of Higher Degree Theses in Australian University Libraries*, *TESEO Database* and *Catalog of Spanish Theses* from Spanish Universities, *TESIUNAM* from Mexico, *SITE-Theses System* of Brazil, *DATD* of African Universities and *SUDOC* of French Academic libraries, *TESI ONLINE* from Italy, *Die Deutsche Bibliothek Online Catalogue* from Germany, *DissertationDataBank* from Austria, *TESIS EUROPEAS SOBRE AMERICA LATINA* from Latin America, *Catalogue of Norwegian Libraries* from Norway are the few examples to cite. There are discipline wise Indexes like *Doctoral Dissertations in Musicology (DDM-Online)*, which is an international database of bibliographic records for completed dissertations and new dissertation topics in the fields of musicology, music theory, and ethnomusicology, as well as in related musical, scientific, and humanistic disciplines (*DDM-Online, 2005*).

In India, Association of Indian Universities started publishing of Doctoral Bibliographies in all subjects and Theses of the Month column through its weekly publication *University News (AIU Website, 2005)*. In 1994, INFLIBNET hosted a regularly updated free online union database of Ph D theses submitted to Indian universities. At present it is freely available for searching at INFLIBNET website and contains around 1,52,000 of unique bibliographical records covering all subjects and all universities. Being the data supplied by the Universities themselves, it is considered as the only authoritative online-tool available to find-out the research output of Indian Universities. (*Vijayakumar, Hosamani and Murthy*). Earlier with the support of NISSAT and later from Ford Foundation, University of Mysore initiated a project called "Vidyanithi" to host individual full-text doctoral theses from various universities who are willing to become a member of this venture (*Vidyanidhi Website, 2005*). Apart from these initiatives, there are lots of publications and journals features Doctorate awardings in

India. The major role played by INFLIBNET in Bibliographic Control of Indian Doctoral Theses is narrated in Annexure III at page 137. National Social Science Documentation Centre (NASSDOC), ICSSR has a library of Ph.D Theses in social sciences (approved by the Indian universities) form a part of its core collection. As a national institution, NASSDOC aims to build a truly representative collection of Ph.D. theses in each of the areas that make up the social sciences (*NASSDOC Website, 2005*).

From TDs to ETDs

The emergence of electronic publishing and digital technologies changed the campuses worldwide, and it is more visible in digital publishing of institutional scholarships such as theses. Lots of projects started at Institutional, Regional and National level along with ETD Consortia during recent few years. A few and important initiatives selected from different regions are identified here.

The concept of electronic theses and dissertations (ETDs) was first openly discussed at a 1987 meeting in Ann Arbor arranged by UMI, and attended by representatives of Virginia Tech, University of Michigan, SoftQuad, and Arbor Text. After lots of workshops and meetings, the Networked Digital Library of Theses and Dissertation (NDLTD), which was originally called the National Digital Library of Theses and Dissertations, was established at Virginia Tech in 1996 with the initial funding of Southeastern Universities Research Association (SURA). Its mission was to coordinate ETD-related activities in terms of diffusion of the ETD-DL and support for adoption and implementation of the innovation. NDLTD is a voluntary international federation of universities and other institutions who have an ETD-DL or are interested in learning more about ETD-DLs. It has 174 members as on March 2005 worldwide, which includes 30 effective members who contribute content and 154 Universities from various countries (*NDLTD Website, 2005*).

The formation regional consortium like the Appalachian Regional ETD Consortium (AR-ETD) and Ohio Link are also underway in various countries. In 1999, the Ohio graduate deans' group in USA, the Regents Advisory Committee on Graduate Study (RACGS), asked Ohio LINK to create a single, commonly shared ETD site to represent the work of Ohio's scholars. The ETD Center launched in 2001, as a joint project of OhioLINK and the Regents Advisory Committee on Graduate Study (*OhioLink ETD Website, 2005*). Issue number 7 of *Transforming Libraries*, published by Association of Research Libraries (ARL) summarizing the current state of electronic theses and dissertations (ETDs) by reporting on efforts in 13 institutions in USA and Canada, including NDLTD and UMI. (*Transforming Libraries, Issue 7, 2001*). UMI's ProQuest Digital Dissertations™ (PQDD), a key part of the ProQuest® line of research databases since 1997, has renamed to ProQuest Dissertations & Theses (PQDT) and the project will be functional by the year 2005. The system developed by Berkeley Press supports the users to submit their Theses. (*ProQuest Website, 2005*).

UNESCO is also playing an important role in promoting ETDs at international level and developed an ETD Guide, as a resource for graduate students who are writing theses or dissertations, for graduate faculty who want to mentor ETD authors, for graduate deans who want to initiate ETD programs, and for IT administrators at universities. (*UNESCO ETD Guide Website, 2004*). UNESCO also established an ETD Clearing House in collaboration with Humboldt University, Germany (*UNESCO ETD Clearing House Website, 2005*).

The Brazilian Digital Library (BDL), as a Brazilian gateway try to integrate electronic full-text journals, electronic full-text proceedings, Internet interesting resources for science and technology, various university OPACs, some ETD data banks, the Brazilian National Library OPAC and various electronic archives. The first attempt to integrate Brazilian theses and dissertations in a unified database was the SITE-Theses System, coordinated by Institute of Brazil for Information Communication Technologies (IBICT) in 1996 and today integrates more than 140 000 records of theses and dissertations from 15 universities. (*Ciência da Informação Journal, 2001*). Southwick and Pavani update us about this project that to date, approximately 50 universities have received software and training for implementing an ETD system. With the support of UNESCO, the project has also reached universities in other countries from Argentina, Colombia

and Uruguay, who started pilot-projects using the technology supplied by IBICT (*Southwick and Pavani, 2004*).

In 1997, Canada started "Theses Canada Portal", as a follower of National Library of Canada's Canadian Theses on Microfiche Service launched in 1965. This aims to acquire and preserve a comprehensive collection of Canadian theses at Libraries and Archives of Canada and to provide free access to this valuable research within the country and around the world, through partnership with the many Canadian universities (*Theses Canada Website, 2005*). Apart from this various individual Universities also started their ETD Programmes and the universities already involved in ETD projects have strengthened their initiatives, and serve as a pilot in the national process (*Bonnelly, 2003*). French Universities are also initiated several ETD Programmes and a *Multi Disciplinary Theses Server* is hosted with limited content and access.

MacColl reports that the ETD movement has not yet taken root in the UK up to 2000. Theses *Alive* is one of three projects in electronic theses funded by JISC. The others are *DAEDALUS*, led by Glasgow, and *E-theses in the UK*, led by the Robert Gordon University. *Theses Alive* will work with both of these, and will share an advisory structure with the latter. (*MacColl, 2002*). National Library of Portugal initiated a project in 1999 and re-started in 2001 called DiTeD which is open to 14 public and 10 private universities existing in Portugal, as also to the several hundreds of polytechnic schools and similar (*Borbinha and others, 2004*).

The DiVA -project (Academic Archive On-line) was initiated at Uppsala University in Sweden and has evolved from being a project at one university to a joint project with partners from seven universities in three different countries (Denmark, Norway and Sweden). *Moe and Muller* underline that taking part in a joint project offers several advantages both financially and when it comes to implementation and further development and it has already produced a system for submitting, retrieving and archiving ETDs and reports (*Moe and Muller, 2004*). The Online Doctoral Thesis Server (TDX) is a digital collection of doctoral theses presented at some Spanish universities. It allows for remote consultation of the complete text of theses over the Internet, additionally allowing the user to construct searches by author, title, knowledge area, university of publication, etc. This service, coordinated by the Consortium of University Libraries of Catalonia (CBUC) and the Supercomputing Centre of Catalonia (CESCA), and sponsored by the Department of Universities, Research and the Information Society of the Generalitat (government) of Catalonia (*TDX Site, 2005*).

In Africa, Rhodes University mounted its digital thesis on the World Wide Web in 1998 and became the first institution in Africa to do so, and made it mandatory for students to submit digital files of their theses and dissertations. *Ubogu* foreseen that the joining of universities in the Southern African region would lead to the building of a digital library of theses and dissertations in the region. In addition, the South East Academic Libraries (SEALS), a library consortium of tertiary institutions in the Eastern Province of South Africa, is considering an ETD programme (*Ubogu, 2001*). University of Namibia developed ETD using Green Stone software for the entire country (*Namibian Theses Website, 2005*).

In Egypt, all theses and dissertations are available on the Ain Shams University Network (ASUNET), including theses and dissertations of Egyptians who graduate from any other international universities are also recorded. The database entries contain bibliographical data as well as the abstract on each thesis. The University Information Network (UIN), which is headquartered at Ain Shams University in Cairo, serves as a national clearing house for theses and dissertations completed in Egypt, which carries out a set of activities very similar to those of UMI (*ASUNET Website*). In Venezuela, a group of universities and research institutions created the National Network of Digital Libraries for Electronic Theses in October 2003 and Venezuelan Association of Public and Academic Libraries (ANABISAI) is the leading agency (*Rosales and Bauste, 2004*).

Australian Digital Theses (ADT) program under the auspices of Council of Australian University Librarians (CAUL) is designed to improve access to, and enhance transfer of, the research information contained in theses by providing a full text version available from the desktop via the web. 26 Australian Universities are part of this programme (*ADT Website*). *Genoni and Cowan* report that the program is based on a distributed database, with member institutions undertaking to load deposited theses

onto local servers in PDF format, and load the metadata which provides bibliographic access to the theses on a server at the University of New South Wales (*Genoni and Cowan, 2002*). Apart from various Universities in Germany (See Annexure IV at Page 142) Humboldt University at Berlin started Dissertation Online project and later on it is undertaken by the Co-ordination Agency at the German National Library (Die Deutsche Bibliothek) since September 18, 2002 (*Dissertation Online Website*).

Chinese universities have realized the importance of ETDs, and some local ETD programs have been carried out. Later on China Networked Digital Library of Theses and Dissertations (CNDLTD) project has been carried out by CALIS (China Academic Library and Information System) to improve the accessibility of local ETD collections. CALIS is a federation of academic libraries in China, and has more than 152 members and seven local centers (*Jin, 2004*). Korea Institute of Science and Technology Information (KISTI) has developed a digital library for Electronic Theses and Dissertations (ETDs) as a web-based multilingual full-text system, since 1998 known as KIST ETD (*Zhang and Lee, 2001*).

Indian academic institutions are also started ETD projects in recent years. *Indian Institute of Technology* in Mumbai, Chennai and Kharagpur have their ETD collections made available on campus network. *Indian Institute of Science*, Bangalore and *National Chemical Laboratory*, Pune have recently established ETD project using DSpace software. *Vidyanidhi* Initiative at Mysore University tries to evolve as a national level repository of Indian Doctoral Theses. Few Indian Universities already made policies and rule for collecting e-format of PhD theses from their students.

It is a fact that, the ever rapidly developing networking and digital library technologies are the reasons for ETDs (Electronic Theses and Dissertations) gaining momentum on university campuses worldwide. ETDs allow more adventurous students to express their research results in creative and flexible ways that would not be possible if they were limited to paper based output. 'Born digital' theses may include audio and visual material and may not even be in a traditional linear format. There is some variation between countries in the use of terminology e.g. some universities refer to doctoral theses and some to doctoral dissertations. The term ETD accommodates these differences and is becoming used internationally. Digital libraries of electronic theses and dissertations (ETDs) offer an alternative to the waste of valuable academic scholarship in the form of Theses and Dissertations (TDs) and offer researchers and University Libraries opportunities to explore the possibilities of electronic publishing trend in academic sector.

CONCLUSION

In the twenty first century the Society is becoming more information conscious and millions of life is embedded with quality-based data and information to compete with each other. Academics play a very significant role in molding and creating new generation of scholars, researchers and better situations to meet these challenges at national and international level. Undoubtedly, higher education system contributes to the majority of this component. The most important ingredient of this happens to be that of Doctoral theses, which are the intellectual properties of the individuals in a particular domain, or subject, or a faculty, thus directly or indirectly contributing to the growth and development of individual and society. Unfortunately, there is no uniform standard followed even at twenty first century, where the information and communication technology is dominating and paving the way for easy and multi-user access with exhaustive information through computer based networks in an Open Access mode. However, the sporadic efforts are made in some parts of the world like; USA, UK, Germany, Australia and few other advanced countries in addressing the issues relating to making full text of this valuable information source to reach its intellectual component across the world and save time and duplication of the efforts for enriching multi-disciplinary projects.

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mémoires de 3^e cycle en Science de l'Information et de la Communication

mémSIC – <http://memsic.ccsd.cnrs.fr/>

mémSIC is a repository created by the INIST-CNRS¹ and URFIST PacaC² in collaboration with the CCSD/CNRS³.

mémSIC is a self-archiving server for French-speaking master theses in the field of the Communication and Information Sciences:

http://memsic.ccsd.cnrs.fr/view_ROOT.html.

Some schools may decide to make only the best works available. mémSIC gives free access to the full-text of more than 100 documents by several university institutions: http://memsic.ccsd.cnrs.fr/univ_en.html

Its goal is to make these documents freely available to all on the web and consequently to increase their visibilities. It contributes to the free dissemination of knowledge and supports the OAI protocol for metadata harvesting.

mémSIC uses the *eprints.org* open archive software.

The user interface is in English and French, while additional information is in French only.

A RSS feed is available for anyone interested in keeping up-to-date with newly added materials.

Contact information: coordoMEM@ccsd.cnrs.fr

1 The **Institute for Scientific and Technical Information** (INstitut de l'Information Scientifique et Technique - INIST) of the French National Center for Scientific Research (CNRS) has been designing and developing services to facilitate access to and valorization of scientific information produced by international basic and applied research communities.

2 **L'Urfist** (Unité Régionale de Formation à l'Information Scientifique et Technique) **de Nice (Urfist PacaC)** trains librarians, teachers, researchers or students in the use of digital information and retrieval technology for education and research.

3 **CCSD** (Centre pour la Communication Scientifique Directe), the **Center for direct scholarly communication** of CNRS maintains the platform HAL: <http://hal.archives-ouvertes.fr>. It's a digital repository of scholarly documents in all academic fields. HAL is connected to archives of different scholarly communities worldwide (arXiv.org, PubMed Central archive, ...)

Dissemination and preservation of French print and electronic theses *

Pierrette Paillassard, Joachim Schöpfel, and Christiane Stock (France)

Abstract

How do you discover and locate a French thesis, how do you get hold of a paper copy and how do you access the full text of electronic theses and dissertations (ETDS)? What are the catalogues and databases referencing theses? Where are the archives, and are they open? What is the legal environment that rules the emerging structures and tools?

This paper presents the former database for print theses "Téléthèses" that merged with the national academic union catalogue "Sudoc", and gives an overview on initiatives for open archives and repositories for electronic theses and dissertations as well as the national program for these documents (STAR). Practical council is provided for the search of French theses, legal and metadata aspects are discussed, seven OAI-projects are presented in detail (CITHER, Cyberthèses, IRIS, INRIA, Mathdoc, PASTEL, TEL-HAL), and a glossary is added for some French acronyms.

The following article is an updated and revised version of our communication presented at the GL6 conference in 2004: Paillassard, P., Schöpfel, J. & Stock, C.: "How to get a French doctoral thesis, especially when you aren't French". - In: Farace, D. & Frantzen, J. (ed.): GL6 Conference Proceedings. Sixth International Conference on Grey Literature: Work on Grey in Progress. New York, 6-7 December 2004. - Amsterdam: TextRelease 2005.

Introduction: What is a French doctoral thesis?

Considered as scientific publications, French doctoral theses constitute an important part of scholarly communication. Following scientometrics, they represent 10-20% of indexed academic research in STM (OST* 2002).

Theses are often the result of 3-4 years of research. At the same time they are an administrative document necessary to obtain the doctoral degree. In some disciplines they are regarded as a result of teamwork and appear in the list of publications of the research laboratory (Mermet et al. 1998).

French universities are autonomous; each one delivers its own degrees and preserves the theses in its library. In the past, before 1985, the graduate student had to deposit a certain number of copies that varied according to local rules (30-180) for library interlending and exchange purposes. There are more than 100 universities in France, each one with one or more catalogues and with a specific logic of preservation and supply. Furthermore, academic communities – sciences, humanities, medicine, law etc. – hold different views and have different practices and traditions. And last but not least, local autonomy and responsibility are "counterbalanced" by a national framework structure, the French interlibrary loan network.

So, how to find a French thesis? And once found, how to get it? The following communication tries to give some practical hints and perspectives, imbedded in a larger description of the development of the production, processing and preservation of French doctoral theses and an overview of the principal actors, catalogues and databases.

Dissemination and preservation of French print theses (1985-2000)

The French government published in 1985 a decree that regulated and improved the deposit and dissemination of doctoral theses. Its main purpose was to guarantee the deposit of the doctoral thesis, to harmonize the number of copies to submit, to facilitate the identification and availability of the documents, and to move the format

* Revised and expanded version, first published in the GL6 Conference Proceedings, January 2005

of preservation and dissemination from paper to microfiche in order to gain shelf-space, ensure long-term conservation and provide easier access.

Subsequent to the 1985 decree, the French Ministry of Education created a four-level national network for theses:

1. Registration: each university had to create a special service for doctoral theses ("service de doctorat").
2. Editing and reproduction: two public institutions (ANRT*) in Lille and Grenoble transformed the print originals into microfiches.
3. Recording: three public input centres (INIST* for sciences and technology) centralized the creation of bibliographic records from the registration form.
4. Dissemination: all records were loaded into a national online database called "Téléthèses".

(a) Deposit, registration and dissemination

Three weeks before the date of defense the candidate fills in two copies of a registration form and submits several print copies of his thesis at the "service de doctorat": one copy for each member of the jury, and three copies for the library.

The registration form contains personal, administrative and bibliographic data (including a French abstract, French keywords and, in later years, an English translation of title and abstract) and is used for the examination process as well as for the input into the national database.

The jury may ask for modifications of the thesis to be finished within three months after the date of defense. Once the final official version submitted, the university president authorizes its reproduction and dissemination.

The print copies and registration forms are transmitted to the university library. Depending on the scientific domain (social sciences and humanities, including economics and law; medicine; and sciences), the registration form is sent to one of the three input centres.

If authorized for reproduction, a print copy is shipped to one of the national theses reproduction services (ANRT) that produces a microform version. All university libraries and some other academic institutions receive a copy on microfiche. The students' guide mentions an average dissemination of 200 microform copies per thesis (Ministère 1994).

If the thesis has been published, the graduate student must deposit 10 sample issues of the publication at the university library (30 if the student received public funding for the publication). In this case, the thesis is not converted into a microform.

French theses are not deposited at the National library (BNF*), and they are not included in its national bibliography.

(b) Referencing – from print bibliography to online catalogue

Up to 1996, the Ministry published an annual print bibliography "Inventaire des thèses". This catalogue was divided into three sections, "social sciences and humanities", "medical sciences" and "sciences". In 1986, a national database called "Téléthèses" was created, hosted on a university server and accessible through "Minitel", a very popular Videotex online service launched in France in 1982 but inaccessible from foreign countries.

Records in the online database referred to theses going back to 1972 for sciences, social sciences and humanities, to 1983 for medical sciences and pharmacology and 1990 for veterinary sciences. Each record contained minimal bibliographic data, an abstract and keywords in French and later also in English. Authority lists were used for the university, type of degree and scientific domain. From 1986 on the university based "services de doctorat" attributed a unique identifier (national identification number) that was included in the database record. An ISBN was only attributed if the thesis had been published.

Between 1995 and 2003 the Téléthèses database was also published in a CD-Rom version called "Docthèses", making the database available to foreign countries. The

following table contains the number of French doctoral theses referenced by "Docthèses":

Table 1:
Theses referenced in the "Docthèses" CD-Rom database (1993-2002)

Year	total	SS&H	Sciences	Medical Sc
1993	18813	2844	6335	9634
1994	19344	3307	6613	9424
1995	18449	3019	6422	9008
1996	19542	3460	7181	8901
1997	19886	3637	7083	9166
1998	18444	3398	6655	8391
1999	17826	3530	6011	8285
2000*	10662	3572	4977	2113
2001*	8922	2612	6310	?
2002*	10720	3209	7511	
total	162608	32588	65098	64922

(*) 2000-2002 are transition years and the number of theses is not complete

In 2000 the Téléthèses database moved from Videotex to a web server hosted by ABES*. At the same time, all records were uploaded into the new national academic union catalogue Sudoc*. Today, the all university libraries create their records directly in the Sudoc, and the online and CD-Rom databases of theses have disappeared together with the four-level national network. The Sudoc catalogue contains actually more than 530,000 theses and will be searchable through Google in 2007.

The most important former input centre, INIST, preserves more than 100,000 French STI theses in its collections. Most of them are searchable through its online database "Article@INIST"* and via the database "cat.inist" through Google and Google Scholar.

(c) Limits and critics

The 1985 decision facilitated recording and availability of French theses. These rules have been applied until 2001. Nevertheless, essential critics arose especially from academic librarians:

- Workload: initially, university libraries couldn't download the records from the database but had to key them again for their own catalogue.
- Incomplete information: especially in humanities and social sciences, librarians wanted to increase reference quality by adding national subject headings (RAMEAU*).
- Delay: the time between the date of defence and the integration of the record into the union catalogue was often rather long.
- Supply price: the cost of dissemination of theses through print copies from microforms was generally considered as too high.

Improvements were made since 1996, in particular as mentioned before through the development of the Sudoc functionalities. But it was above all the advancement of electronic theses and dissertations in France and other countries that lead from 1998 on to the creation of ETD repositories and moved the government to a change in national politics (see below).

Electronic theses: legal aspects and metadata

In the 1980's a thesis was considered as a university document that should be disseminated as widely as possible. According to their examination regulations, the universities considered the jury's authorization sufficient for dissemination.

With the appearance of ETDs and the evolution of the author's rights, a thesis is no longer seen as a "university document" but as a work subject to intellectual property rights.

Today the explicit authorization by the author of the thesis (= copyright holder) is necessary for the electronic dissemination, in addition to the jury's decision. This

authorization should be requested when the thesis is submitted (Jolly 2000). Furthermore, some universities ask for a declaration of conformity between electronic and print version and/or between the native deposit format and the XML version (Six&Dix 2004).

Some universities (Metz, for instance) already started to search for their former graduate students in order to obtain an authorization for retro-digitisation and online access of older theses.

Following the results of the Jolly report, AFNOR*, the French standardization organization charged an expert group to define the metadata required with the national deposit of ETDs. The recommendation was published in its extended version TEF* 2.0 in spring 2006 (TEF 2006).

Based initially on the Dublin Core, the new scheme TEF is far more detailed. In addition to the "traditional" bibliographic metadata, the scheme includes data for administrative needs as well as information related to the life cycle of ETDs and to the rights management (METS rights). Data of local interest (e.g. name of the research unit) are optional. TEF offers a match to Unimarc fields for the union catalogue Sudoc and is OAI-PMH compliant.

Electronic theses present new challenges: segmentation may be necessary to restrict access to confidential parts; it is necessary to distinguish archival versions and versions for dissemination. Therefore TEF includes metadata that will allow version management and migration.

For a detailed presentation of TEF see the papers of Boudia and Gomez de Regil presented at GL7 (Boudia 2006) and Nicolas at ETD 2006 (Nicolas 2006).

French ETD archives in 2007

The following chapter offers an overview of the seven most representative digital archives¹ that give free access to French ETDs. These archives were developed since 1997 and 1998 by French universities, engineering schools, national institutes and the CNRS*. Figures and data are from January, 2007. The appendix contains more detailed information for each of these ETD archives.²

(a) Physics, mathematics, chemistry and engineering sciences

- **CITHER:** produced by INSA* Lyon with 571 theses in the engineering field.
- **PASTEL:** produced by the Paris Institute of Technology (ParisTech with 11 independent engineering, management and business schools). PASTEL contains 968 theses with online access to the full text.
- **MathDoc*:** developed by the University of Grenoble-1 and the CNRS, MathDoc is one of the oldest French archives with more than 1000 theses in mathematics.
- **INRIA*:** the INRIA archive gives access to more than 600 theses in computer science and control between 1985 and 2005. Since 2005, students are encouraged to submit their document to TEL-HAL (about 300 deposits until January 2007)

(b) Multidisciplinary archives

- **Cyberthèses:** a common project between Canadian and French universities (Montreal, Lyon), gives for example access to 883 multidisciplinary ETDs for Lyon 2 University.
- **IRIS:** a multi-type institutional archive, produced by the University Library of Lille 1. It contains about 500 full-text digital theses submitted at Lille 1 (sciences, technology and social sciences). IRIS is a partial successor of Grisemine a multidisciplinary and multitype repository which was presented at GL'5 (Claerebout, 2003)
- **TEL - HAL:** created by the CCSD* and MathDoc*. It is today the most comprehensive French repository with 6028 ETDs in full text, covering all domains but mostly physics, mathematics and engineering sciences. TEL-HAL is also searchable through HAL, a repository including eprints and other document types.

¹ Digital archives does not necessarily mean open archive. By digital archive we understand platforms, institutional servers, repositories who give access to ETD full text in a permanent way.

² See a list with French ETD full text repositories: ABES (2006), Quelques sites pour trouver des thèses en texte intégral [Online]. - <<http://www.abes.fr/abes/page,430,sites-concernant-les-theses.html>>

(c) Typology of archives

Four different types of archives can be distinguished, even if these types are not exclusive:

- The **institutional archive** contains all theses of one (CITHER) or more than one structure (PASTEL).
- The **domain-specific archive** gives access to ETDs from different establishments but of the same scientific domain (MathDoc).
- The **collaborative or multi-side archive** offers facilities to different structures (International program Cyberthèses).
- The **multi-type archive** contains ETDs but also other academic literature - preprints, conference papers, courseware and so on (INRIA).

The most frequent type seems to be the collaborative or multi-side archive. The cooperation can be realized on different levels:

- Management and administration: Cyberthèses is co-managed mainly by the universities of Montreal and Lyon-2 and a French foundation for information highways (Fonds Francophone des Inforoutes).
- Coverage: Multilingual research interfaces are more and more frequent. TEL-HAL offers French, English and German versions. ETDs are in different languages and come from different European, African and American countries.

This willingness to cooperate is reinforced by the use of metadata harvesting through the OAI-PMH protocol and the use of open source software. PASTEL, TEL-HAL and Cyberthèses are declared OAI compliant.

(d) Other services and functionalities

Some archives offer more than full text access and include special and complementary services, for instance:

- Complete editorial chain: Cyberthèses proposes a complete editorial chain called "Cyberdocs" going from a document model to the conversion into a fully structured XML document using the TEI lite DTD. Discussion lists and downloadable tools complete the offer.
- Links to online services: MathDoc offers links to different special portals and online services such as the Zentralblatt-MATH (FIZ Karlsruhe), the MathSciNet (American mathematical society), or Springer Link.
- Online submission: TEL-HAL and PASTEL permit online submission by the author (self-archiving). Even so, in most cases the institution controls metadata and documents before making them available. Changes in the workflow may be possible with new national organisation.
- Technical progress: evolution of technical platforms includes multilingual user interfaces furthering still the access to ETD's. RSS feeds are added to numerous sites.
- Inclusion of course material : IRIS starts to cite course material following the LOMfr³ metadata scheme.

Up to now, we found no study on usage patterns of the different French archives and systems comparable to Zhang, Lee & You 2001 for the Korean KISTI system.

Detailed aspects can be found in the individual presentations of each archive (see appendix).

The national program for electronic theses and dissertations (1998-2007)

As mentioned above, motivated by the increasing number of electronic theses and dissertations, the French Ministry of Education published in 1998 the outlines of a national ETD server (Okret 1998). The project was meant to substitute the 1985 network, though preserving its underlying doctrine, a centralized structure based on the national academic union catalogue, the Sudoc, and similar software⁴ and procedures for all universities. Three other assumptions were made:

- Each ETD record in the Sudoc should be linked to the full-text (URL link from the 856 field).
- Each ETD should be archived on a local, campus-based server.
- A national backup server should contain part or all of French ETDs.

³ Educnet (2007), Métadonnées, normes et standards [Online]. -<
<http://www.educnet.education.fr/dossier/metadata/lom2.htm>>

⁴ "Cyberthèses" developed by the University Press of Montreal and the University of Lyon 2.

Between 1999 and 2000, a working group addressed the technical, organisational and financial features of this ambitious project (Jolly 2000). In spite of nationwide incentive action and promotion, the results were limited. Four years later, only 360 ETDs were compliant with the governmental guidelines, corresponding to hardly 0.5% of the theses recorded between 2001 and 2004 and only 8% of French ETDs in 2004. An audit ordered by the Ministry addressed some reasons for this situation (Six&Dix, 2004):

1. A unique ETD model was unrealistic and non-adapted to the heterogeneous needs, traditions and initiatives of scientific and academic communities that had started to develop their own and often less complicated ETD solutions.
2. The need for new technical knowledge and procedures, training of graduate students and investment for new soft- and hardware was underestimated. Generally, both academics and librarians considered the technical requirements as too complicated.
3. The Ministry's initial evaluation of human and budget resources was too optimistic, governmental funding was insufficient, and local investment by universities was often limited or inexistent.

The Six&Dix report recommended a modular network based on mixed deposit (print/native format), PDF/XML preservation and PDF/HTML supply and on a combination of centralized software (Sudoc and CINES* ETD archive) and campus- or community-based solutions.

Following these recommendations, the Ministry reconsidered its first project and elaborated a new and more realistic program. The related decisions were published 2005 and 2006 and can be summarized in four points:

1. **Deposit:** Print or electronic format, depending on the choice of each university.
2. **Recording:** Metadata TEF. Conversion into UNIMARC by ABES.
3. **Dissemination:** Conversion by the university into HTML and/or PDF.
4. **Preservation:** Conversion by the university into XML or PDF.

Each university decides which server to use or recommend for the preservation and dissemination of ETDs, for instance a campus-based server, the CNRS TEL-HAL open archive or the Sudoc portal, while the CINES guarantees the perennial preservation.

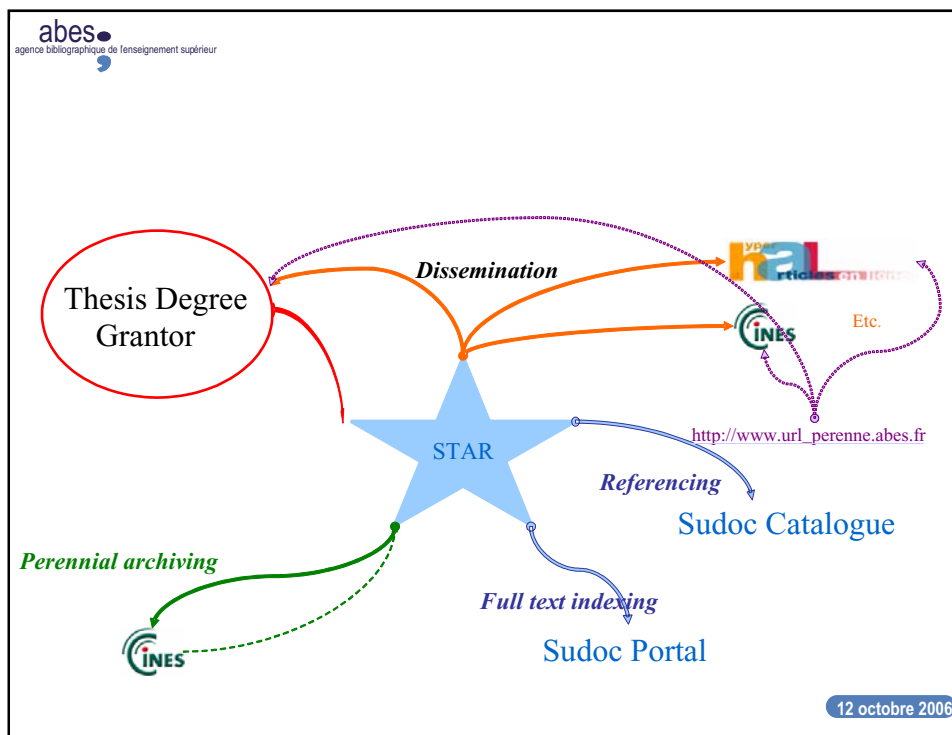
Since 2005 ABES and CINES prepare a new software tool to help with ETD logistics. STAR* (Signalement des thèses, archivage et recherche = referencing, archiving and retrieval of ETDs) (STAR 2007) is the new "hub" through which electronic theses must pass in transit before further dissemination. On the input side STAR allows universities who have not chosen their own platform to manage the workflows of deposit, metadata (using the TEF metadata scheme) and administrative validation of theses with different validation levels.

As an output STAR proposes the following services:

- conversion of metadata to the Unimarc format and integration into the Union catalog Sudoc and its related authority files (national bibliography for theses),
- creation of a unique persistent identifier for each thesis,
- export of the archive version of the document and appropriate metadata (bibliographic, preservation) to the perennial archive on the CINES host,
- dissemination of a public version (if parts of the theses are confidential). STAR can provide other archives and servers with a public version and metadata in different formats: Unimarc/XML, DC, ETD-MS, TEF.

A future version of STAR will allow the integration of data from local systems through the OAI metadata harvesting protocol. Keying in of metadata will no longer be necessary. A combination of different input modes will also be possible, offering interesting solutions for different cases.

Figure 1



Source : adapted from: STAR – introduction générale / ABES. Journée de lancement STAR, Montpellier, 12 octobre 2006. (STAR 2007)

Based on the OAIS concept, the CINES developed a platform for the long-term preservation of French ETDs called "PAC" with three different functionalities for the management of deposit, archiving and access.

The new ETD program started at the end of 2006. Since then, the input of electronic theses into the Sudoc increased steadily and attains nearly 2,500 ETDs in March 2007. Nevertheless, it is too early to make assumptions about the results.

Conclusion: some practical tips to search and order a French thesis

From a clearly structured network in the 80s and 90s with defined roles, actors and services, the French theses landscape has changed into a heterogeneous mixture of national structures and local initiatives with centralized tools emerging again (STAR, TEF). This may be characteristic for a transitional period from a traditional "print circuit" to a networked digital library of ETDs. In the meantime, searching for French theses has to adopt a double strategy, based on an interrogation of the academic union catalogue Sudoc and a web-based search in ETD archives and repositories.

How to find a thesis in the Sudoc catalogue:

Choose the "Extended Search" interface.

De-select all types of publication except for theses.

Choose or select a subject.

Limit the publication year or range.

Add keywords with the index "subject words".

For formal information select the index "thesis note". This index contains formal information about the type of theses, the domain, the university and the date.

Each bibliographic record in Sudoc is linked to a holding record that lists the university libraries in possession of the document, with details on loan/copy conditions (PEB*).

In some special cases it is difficult or impossible to obtain a thesis referenced in the Sudoc:

(1) Confidential theses are referenced in the databases or university catalogues, but are not available. The principal reasons for confidentiality are:

- The research has been conducted on a subject where patents have been submitted.
- The author plans to publish his work commercially.

If the confidentiality is time-limited, the document becomes available after this period.

(2) The jury/commission may ask the candidate to revise parts of his thesis. If this isn't done then the thesis may not be disseminated officially and be excluded from microform reproduction. Even if it could eventually be retrieved from a personal website, its scientific value should be considered with prudence.

(3) "Thèses d'exercice" in medicine normally are not reproduced in microform. They are available at the student's university and at the central library for medicine in Paris (BIUM*) where they can be retrieved through the BIUM catalogue.

Print copies from French theses can also be ordered directly via the INIST document supply service.

The Lille ANRT offers a service called "Thèse à la carte" where theses can be searched by subject or domain and ordered in book format; presently, the ANRT catalogue contains roughly 4500 theses.

Even if the Sudoc catalogue remains the point of access to all French theses in print format, ETDs should be searched in the different local and networked archives and databases to obtain full text access, since the Sudoc still offers a rather small number of records with hyperlinks to documents.

The search for a French ETD can start in some digital libraries or portals that offer updated selections of web links to repositories and archives.

Web links to ETD archive information:

Agence bibliographique de l'enseignement supérieur, Thèses [Online]. -
<<http://www.abes.fr/abes/DesktopDefault.aspx?Loupe=Moin>>

Bibliothèque Nationale de France, Thèses francophones en ligne [Online]. -
<http://signets.bnf.fr/html/categories/c_011theses_fra_ligne.html>

Ecole nationale supérieure des sciences de l'information et des bibliothèques (ENSSIB), Sibel. Thèses [Online]. -
<<http://sibel.enssib.fr/index.php?m=c&c=479>>

Maison des Sciences de l'Homme -Alpes, Thèses [Online]. -
<<http://www.msh-alpes.prd.fr/veille/actualitercherche.htm>>

Ministère de l'Education nationale, de l'Enseignement supérieur et de la Recherche, Thèses en ligne [Online]. -
<<http://www.educnet.education.fr/dossier/rechercher/these1.htm>>

Another way is to search directly in the ETD archives (see appendix) or on the universities' websites and catalogues. Nevertheless, in spite of these initiatives and services, searching French ETDs still remains a more or less difficult task.

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Glossary

ABES: Agence Bibliographique de l'Enseignement Supérieur (operating agent of the French academic union catalogue and ILL system): <http://www.abes.fr>

AFNOR: Association Française de Normalisation (French standardisation organisation): <http://www.afnor.fr/>

ANRT: Atelier National de Reproduction des Thèses (national service for the reproduction of theses). The Lille ANRT is hosted at the Charles de Gaulle university at Lille-3: <http://www.anrtheses.com.fr>

Article@INIST: Online database with over 8 million references of articles and monographs for document supply: <http://services.inist.fr/public/eng/constl.htm>

BIUM: Bibliothèque Interuniversitaire de Médecine (largest medical library in France and most important supplier in the academic sector): <http://www.bium.univ-paris5.fr/>

BNF: Bibliothèque Nationale de France (French national library): <http://www.bnf.fr/>

CCSD: Centre pour la Communication Scientifique Directe (CNRS Centre for Direct Scientific Communication): <http://ccsd.cnrs.fr/>

CINES: Centre Informatique National de l'Enseignement Supérieur (national academic computer and data-processing centre, called CNUSC until 1999): <http://www.cines.fr/>

CNRS: Centre National de la Recherche Scientifique (French National Research Organisation): <http://www.cnrs.fr/>

HAL: HAL - Hyper Article en Ligne (HAL - Hyper Article on Line): <http://hal.archives-ouvertes.fr/index.php?langue=en&halsid=13aa66ff4f10ccfb0298c0d5f4ef2860>

INIST: Institut de l'Information Scientifique et Technique (CNRS institute for scientific and technical information): <http://www.inist.fr>

INRIA: French national institute for research in computer science and control: <http://www.inria.fr>

INSA: Institut National des Sciences Appliquées de Lyon (one of the top French engineering universities): <http://www.insa-lyon.fr/>

MathDoc: French network for documentation in mathematics and server for the management of ETDs run by the university of Grenoble-1 and the CNRS: <http://math-doc.ujf-grenoble.fr/Theses>

OST: Observatoire des Sciences et des Techniques (Observatory for Science and Technology, production of quantitative indicators for S&T activity): <http://www.obs-ost.fr/fr/>

PEB: Prêt entre bibliothèques (French academic interlibrary loan)

RAMEAU: Répertoire d'autorité-matière encyclopédique et alphabétique unifié (academic subject headings authority list): <http://rameau.bnf.fr>

STAR: Signalement des thèses, archivage et recherche (referencing, archiving and retrieval of ETDs): <http://www.abes.fr/abes/page,428,star.html>

TEF: Thèses Electroniques Françaises (French Electronic Theses): <http://www.abes.fr/abes/documents/tef/index.html>

Sudoc: Système Universitaire de Documentation (academic union catalogue of serials and monographs): <http://www.sudoc.abes.fr/>

All websites visited in January 2007

Appendix

The following sheets contain for each ETD archive four sets of data:

- General information: content, domains, coverage (anteriority) and number of ETDs.
- Technical information: software and formats.
- Archiving: self-archiving and legal aspects.
- Institutional information: institution, website, contact, complementary information.

All data were collected in January 2007.

CITHER

General information

URL	http://csidoc.insa-lyon.fr/these/
Content	Theses from INSA
Type	Institutional
Language	French
Domains	Engineering sciences
Input	INSA Lyon
First release	1997
Number of theses	571
First thesis	1995

Technical information

Platform/software	CEN (DELPHI)
Deposit format	Word, Latex, PostScript, odt (OpenOffice.org)
Viewing format	PDF
Storage format	Word, PDF, odt (OpenOffice.org)

Archiving

Self-archiving	No
Dissemination	Authorization by author and university
Removal of thesis	Allowed

Institutional information

Institution	Centre de documentation scientifique Doc'INSA
Website	http://docinsa.insa-lyon.fr/
Contact	cither@insa-lyon.fr

CYBERTHESES

General information

URL	http://cyberdocs.univ-lyon2.fr/
Content	ETDs from Cyberthèses members
Type	Collaborative
Language	Website in French and in English
Domains	Multidisciplinary
Input	Universities of Lyon-2, Montreal, Chili and several institutions from other countries
First release	1998
Number of theses	883 (Lyon 2) 17130 ETDs from using Cyberthèses – 79 archives worldwide
First thesis	1996

Technical information

Platform/software	Cyberdocs (platformGPL), open source software
Editorial chain	Conversion of structured word documents in XML with the TEI Lite DTD
Metadata format	Dublin Core, Electronic Theses and Dissertations (ETD-MS)
OAI-PMH	Yes
Viewing format	HTML, XHTML, PDF
Storage format	XML
Other	RSS 2.0

Archiving

Self-archiving	No
Dissemination	Creative Commons licences, University agreement requested

Institutional information

Institutions	University of Montreal University of Lyon-2
Websites	http://www.umontreal.ca/ http://www.univ-lyon2.fr/
More information	CyberThèses, Agence Intergouvernementale de la Francophonie, FFI, Cyberdocs: structure and publish electronic documents [Online]. - http://sourcesup.cru.fr/cybertheses/ University of Lyon 2, Cyberthèses [Online]. – http://theses.univ-lyon2.fr/
Contact	Service Général des Publications : edition.electronique@univ-lyon2.fr

IRIS

General information

URL	http://iris.univ-lille1.fr/ Opening soon
Content	Theses from Lille 1
Type	Institutional, multi-type
Language	French
Domains	Sciences, technology and social sciences
Input	University of Lille-1
First release	2001
Number of theses	About 500
First thesis	1936
Others documents	Conference papers, digitized works in history of science
Total documents	750

Technical information

Platform/software	Dspace 1.3.2
Metadata format	Dublin Core and specific elements
Deposit format	PDF
Viewing format	PDF
Storage format	PDF

Archiving

Self-archiving	No
Dissemination	Authorization by author and university
Removal of thesis	Allowed

Institutional information

Institution	University of Lille-1
Website	http://www.univ-lille1.fr/bustl
Contact	iris@univ-lille1.fr

INRIA and HAL-INRIA

General information

URL	http://www.inria.fr/rrrt/index.fr.html
Content	Research reports, technical reports, thesis edited by INRIA
Type	Institutional, multi-type
Language	English, French
Domains	Communication and information science, computer science, automation
Input	INRIA
Number of theses	INRIA : about 600 (1985-2005) TEL : about 320
First thesis	1985

Technical information

Formats	See TEL-HAL
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Archiving

Self-archiving	Self-archiving via TEL-HAL
Dissemination	See TEL-HAL
Removal of thesis	Allowed

Institutional information

Institution	INRIA
Website	http://www.inria.fr/index.fr.html
More information	INRIA, Annual report 2005 [Online]. - < http://www.inria.fr/inria/rapportannuel/ran.fr.html >
Contact	webmaster@inria.fr

MATHDOC

General information

URL	http://math-doc.ujf-grenoble.fr/Theses
Content	Online access to resources in mathematics
Type	Collaborative, domain-specific
Language	Website in English and French, documents in different languages
Domain	Mathematics
Input	Universities (institutes of mathematics), CCSD
First release	1998
Number of theses	1000 (full text and abstracts)
First thesis	1990
Others documents	Preprints, journals, books, digital library of old documents

Technical information

Platform/software	Harvest, OpenResolver (Open URL), open source software
Formats	See TEL-HAL

Archiving

Self-archiving	Self-archiving via TEL-HAL
Dissemination	See TEL-HAL
Removal of thesis	Allowed

Institutional information

Institution	Cellule MathDoc CNRS University of Grenoble-1
Website	http://www-mathdoc.ujf-grenoble.fr/
More information	Cellule MathDoc, Rapport d'activité 2002-2005, comité de pilotage et d'évaluation:17 janvier 2006 [Online]. – < http://www.mathdoc.fr/Publications/Rapports/UMS5638_RA.pdf > INIST-CNRS, La Cellule MathDoc [Online]. - < http://www.inist.fr/openaccess/article.php3?id_article=30&var_recherche=mathdoc >
Contact	accueil@mathdoc.ujf-grenoble.fr

PASTEL

General information

URL	http://pastel.paristech.org/
Content	Theses from ParisTech
Type	Institutional, collaborative
Language	French
Domains	Engineering sciences, business and management, information sciences
Input	Paris Institute of Technology includes 11 engineering schools
First release	2002
Number of theses	968
First thesis	1987

Technical information

Platform/software	Eprint 2.2.1
OAI-PMH	Yes
Metadata format	Dublin Core and specific elements
Deposit format	PDF, PostScript, MS Word...
Viewing format	PDF, PostScript ...
Storage format	PDF, Text (ASCII)...

Archiving

Self-archiving	Yes
Dissemination	Authorization by author and university
Removal of thesis	Allowed

Institutional information

Institution	ParisTech
Website	http://www.paristech.org/index_en.php
Contact	admin@rilk.com

TEL - HAL

General information

URL	http://tel.ccsd.cnrs.fr
Content	Multidisciplinary theses server
Type	Collaborative
Language	Website in English, German and French, theses in different languages
Domains	Multidisciplinary but mostly physics, mathematics and engineering sciences
Institutions	French universities, universities from other countries
First release	2001
Number of theses	6028
First thesis	1940

Technical information

Platform/software	HAL 2.0
Editorial chain	No
OAI-PMH	Yes
Metadata format	DC and specific scheme
Deposit format	(La)TEX, RTF, Word, PostScript, EPS, JPEG, HTML, PDF
Viewing format	(La)TEX, Word, HTML, PostScript, PDF, XML
Storage format	(La)TEX, Word, XML
Other	RSS 2.0

Archiving

Self-archiving	Yes
Dissemination	Authorization by author, often also by university
Removal of thesis	Allowed

Institutional information

Institution	CCSD Cellule MathDoc
Website	http://www.ccsd.cnrs.fr http://www-mathdoc.ujf-grenoble.fr/
Contact	tel.support@ccsd.cnrs.fr

TEF: Metadata for French dissertations *

Dalia Boudia and Rosa María Gómez de Regil (France)

Abstract

Since 2000, universities and research institutions have been encouraged to promote and preserve scientific and technical productions by disseminating digital theses and dissertations. This national program implies that new practices and new tools impacting thesis identification are going to be established at different levels (administrative circuit, theses production mode, theses submission methods, document processing chain, dissemination platforms, digital preservation systems...). It is important to describe theses and dissertations using metadata in Internet shared formats to gain information visibility. TEF (Thèses Électroniques Françaises) standard objective is to permit quality metadata production, exchange and dissemination for French digital theses and dissertations. TEF defines a metadata set for French digital theses. It proposes two standardization levels: a metadata set and an XML schema (exchange format and validation tool). TEF will be composed of descriptive metadata (bibliographical data) and administrative metadata (administrative circuit, rights and preservation data). The XML schema explicitly defines valid XML documents structure. TEF standard has to facilitate metadata exchange at local level (universities) and at national level (SUDOC, CINES). At local level, it will manage theses production and validation, metadata production and full text access. The descriptive metadata set derives from Dublin Core standard, which guarantees a good interoperability with different kinds of documents or different dissemination environments (cf. OAI-OMH protocol). It is also compatible with NDLTD (Networked Digital Library of Theses and Dissertations) Dublin Core application profile, named ETD-MS (Interoperability Metadata Standard for Electronic Theses and Dissertations).

Introduction

The French national Department of Education and Research¹ desires to promote the development and long-time preservation of French theses² and dissertations, disseminating them in an electronic format³. This national position implies that new practices (theses production and validation) and new tools (publishing platforms, metadata management) are going to be established. The objective is to respond to digital environment stakes. This attitude will impact thesis referencing and identification.

Today, French theses are referenced in the SUDOC national catalog (Système Universitaire de DOcumentation), in library catalogs or in specialized bibliographical tools (subject databases, institutional databases, search engines). If we want to extend theses internet referencing they should be described following a shared metadata schema.

Metadata (any data defining or describing other data) facilitate information sharing, contribute to minimize data loss, help in the searching and data storage processes. There are several metadata models used to describe networked electronic resources. The Dublin Core metadata set is used to make a brief and basic description of an electronic resource through 15 elements. Nevertheless, theses (research official document) need to be described with some other detailed elements. TEF (Thèses Électroniques Françaises) standard will respond to specific thesis description and its administrative needs. A standardized approach is necessary to facilitate systems interoperability and data exchange.

TEF standard is formed of

- a vocabulary (metadata set) that defines description elements and,
- a XML schema, an exchange format and validation tool useful to process data in computer environments.

* First published in the GL7 Conference Proceedings, January 2006.

¹ Ministère de l'Éducation Nationale de l'Enseignement Supérieur et de la Recherche

² In this article we are going to refer to Doctoral thesis.

³ Cf. *Circulaire du 21 septembre 2000*.

TEF standard has been developed in two stages and as a consequence, it has two versions :

- TEF 1.0 proposes descriptive metadata (published on May 2005)
- TEF 2.0 is still under development and will propose administrative metadata (publication expected for January 2006).

Descriptive metadata have a bibliographical function in TEF. They include the Dublin Core metadata set. Administrative metadata will manage the administrative submission and publication thesis process (from subject submission to diploma attribution), the legal control associated to the document (copyright) and the long-time preservation.

This paper presents the TEF standard metadata set through descriptive and administrative metadata.

Descriptive metadata

French libraries have to reference theses defended in their institutions⁴. Theses are referenced and indexed in the national bibliographical SUDOC catalog. This catalog is structured in MARC format (MACHINE-Readable Cataloging).

It is important to increase national research value, so, theses have to be well referenced on the web. As a consequence TEF standard uses Dublin Core metadata as a basic/primary description.

TEF standard will allow to reference simultaneously the electronic version of the thesis on the web, and the paper and electronic versions in the SUDOC catalog. TEF associates Dublin Core elements with UNIMARC fields (DC – UNIMARC mapping).

With a DC-UNIMARC mapping TEF entries will be converted to SUDOC catalog entries without data loss. The goal is to reference them in the SUDOC catalog and to use them in a web environment avoiding a double data entry.

The Dublin Core metadata set is not enough to obtain a thesis complete bibliographical description for the thesis. Some elements were borrowed from other metadata schemas:

- elements with specific data about theses (discipline, granting institution, thesis degree type... or thesis.degree element children)⁵. These elements come from the Networked Digital Library of Theses and Dissertations - Electronic Theses and Dissertations Metadata Schema (ETD-MS).
- qualifiers of dc.contributor element (entity responsible for making contributions to the content of the thesis). Some of these qualifiers come from MARC 21 format (marc.thesisAdvisor, marc.opponent, dc.contributor child elements beginning by « marc »)⁶.
- new elements were declared to express all the specific French concepts, such as the elements « école doctorale » (ecoleDoctorale) and « numéro national de thèses »(NNT).
- authority data applying to legal entities or other entities mentioned in the bibliographical description can refer to external authority data entries. These external authority entries can be issued from a controlled vocabulary or an authority list (by default the SUDOC catalog authority entries). They can be linked to other schemas like MADS (Metadata Authority Description Schema).

The next table presents TEF 1.0 elements in a general approach (descriptive metadata)

⁴ Cf. Arrêté du 25 septembre 1985. Available at : <http://www.sup.adc.education.fr/bib/Acti/These/textregl.htm>

⁵ Table 1 presents TEF elements in an abridged and clear form.

⁶ TEF 2.0 will re-structure dc.contributor child elements.

Table 1 – TEF 1.0 descriptive metadata

DC Element	Sub-element (child)	Encoding schema	Status Occurrence	Name-space	UNIMARC Correspondences
ThesisRecord	All other elements		O, N R	TEF	UNIMARC entry
dc.Title	mainTitle dcterms.alternative		O, N R Fac	DC DC	Zone 200 \$a \$e Zone 541 \$a \$e \$z
dc.creator	name autoriteInterne autoriteExterne		O, N R N R	MADS	Zone 700, Zone 701, function code \$4070 (en zone 700 et 701)
thesisID	NNT nationalThesisPID		O N R N O, N R	TEF DC	Zone 029\$b Zone 856\$u
dc.subject	KeywordF KeywordOther indexationCTRL		O, R Fac, R Fac, R	DC	Zone 610\$a Zone 610\$a
IndexationCTRL	VedetteConstruite	Rameau, Fmesh,	Fac, R		
dc.description	abstractF abstractE abstractOther dcterms.tableOfContents		O, N R O, N R Fac, R Fac, N R	DC	Zone 330\$a Zone 330\$a Zone 330\$a Zone 327\$a + zones 463 or 488 for work theses
dc.contributor	marc.thesisAdvisor marc.opponent ecoleDoctorale marc.researcher		O, N R	DC	
marc.thesisAdvisor	name autoriteInterne/autoriteExterne		O, R O, N R	MARC 21	
marc.opponent	name autoriteInterne autoriteExterne		O, N R	MARC 21	Zone 314\$a
ecoleDoctorale	name autoriteInterne/autoriteExterne		O, N R	TEF	Zone 314\$a
marc.researcher	name autoriteInterne/autoriteExterne		O, N R	MARC 21	Zone 314\$a
dc.date	dcterms.accepted	W3C-DTF	O, N R	DC	Zone 328 (Ind. 2=0)\$d, Zone 100 \$a positions 9-12, Zone 210\$d
dc.type		DCT1	O, R	DC	Label pos. 6 (code : " a "), Zone 106 \$a position 0 = "s", Zone 105 \$a position 0-3
editionsGroupe	edition		O, N R		
edition	dcterms.medium dcterms.extent URI otherEditionID	IMT Selon type d'id	O, N R O, N R O, R	DC	Zone 856 \$q, Zone 135 position 0, Zone 230\$a for data type Zone 856 \$s Zone 856\$u Zone 856\$f
dc.publisher	name place autoriteInterne/ autoriteExterne		O, N R O, R	DC	210 \$c 210 \$a
dc.language		ISO 639-1	O, R	DC	Zone 101 \$a
dc.relation		URI	Fac, R	DC	Bloc 4XX
dc.coverage	dcterms.spatial dcterms.temporal	dcTERMS dcTERMS	Fac, R Fac, R	DC	Zone 610 \$a Zone 610 \$a
dc.rights			Fac, R	DC	Zone 300\$a, Zone 310\$a
thesis.degree	thesis.degree.discipline thesis.degree.grantor thesis.degree.level thesis.degree.name		O, N R	ETD-MS	Zone 328 (Ind.#2) \$c
thesis.degree.Grantor	name autoriteInterne/ autoriteExterne		O, N R		Zone 712 \$a
thesis.degree.level			O, N R	ETD-MS	Zone 328 (ind 2=0) \$b
thesis.degree.name			Fac, N R	ETD-MS	
	madsAuthority	personMADS	O, R	MADS	
	personMADS	MADS schema childs	O, N R		

Towards TEF 2.0

TEF 1.0 is not a complete version of the TEF standard, it contains only descriptive metadata; administrative metadata are not included. TEF 2.0 (expected at the beginning of 2006) will cover descriptive metadata and integrate administrative metadata.

Administrative metadata

Thesis administrative metadata section will describe thesis administrative follow-up (from subject submission to thesis status attribution), respect of legal obligations related to the document (copyright, university authorization for dissemination) and long-term preservation.

TEF 2.0 will use the METS schema⁷ (Metadata Encoding and Transmission Standard), providing a flexible mechanism for encoding descriptive, administrative, and structural metadata for a digital library object, and for expressing the complex links between these various forms of metadata. A XML schema will be associated to a Schematron schema permitting the validation of some technical constraints.

The METS standard is advantageous for TEF because its "structure map" is organized in a hierarchical way. So, it reflects the TEF's FRBR structure⁸. The modular organization of metadata allows managing metadata blocks independently.

Rights management metadata

Rights management metadata provide a way of declaring copyright information and controlling users' rights. TEF 2.0 will use METS Rights to encode rights management metadata (copyright, third rights, disseminating authorization ...). METSRights is an XML schema permitting to encode ownership of the intellectual content associated to a digital document.

Preservation metadata

TEF defines a set of preservation metadata that will permit long-term thesis preservation. These metadata will accompany theses that will be stored at CINES (Centre Informatique National de l'Enseignement Supérieur) or at other storage centers / servers. Preservation metadata will facilitate theses management at CINES (documentation of the preservation of physical conditions, management of resources, documentation of actions taken to preserve physical and digital versions of resources: data refreshing and migration).

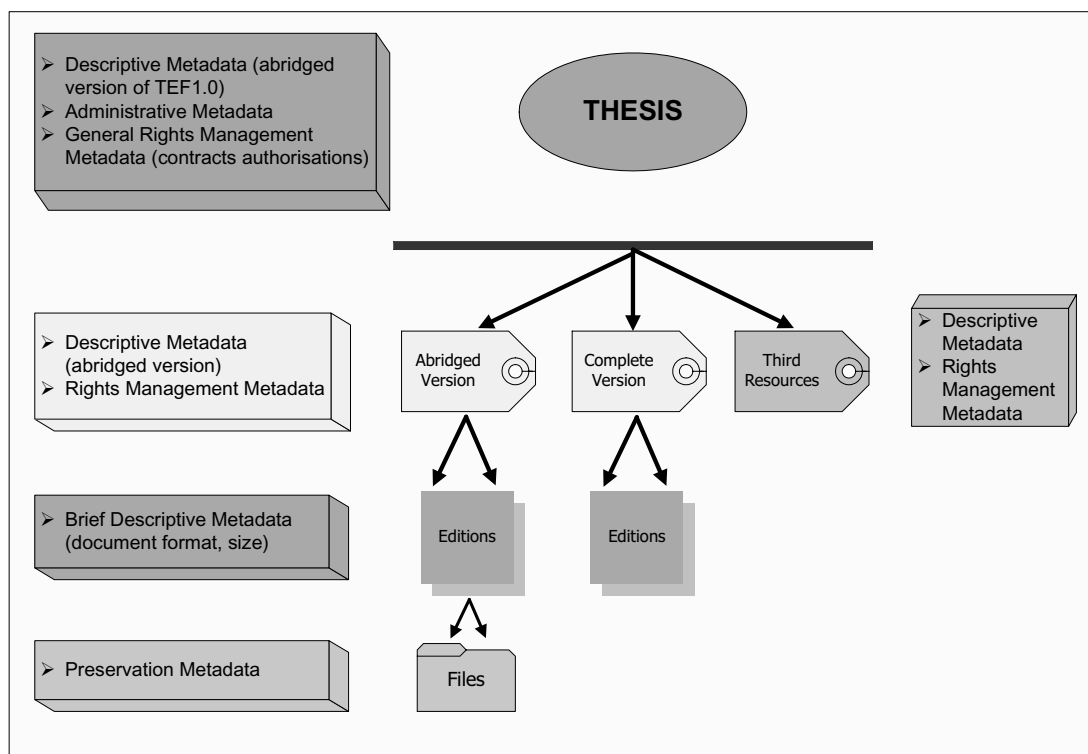
These metadata use some Dublin Core elements that are already defined in TEF 1.0 (dc.creator, dc.contributor ...). Some elements of preservation metadata have been taken from the MoReq (Model Requirements for the Management of Electronic Records) specification, such as preservation dates and storage lengths. CINES has created new preservation elements to manage their own data, e.g. CINES archives identifier,...

The next figure shows the structure of TEF 2.0 version. Metadata are organized by blocs (corresponding to different XML schemas) and according to the FRBR structure.

⁷ Cf. METS site : <http://www.loc.gov/standards/mets/>

⁸ TEF conception included a FRBR data representation. This is useful to express *work*, *expression*, *manifestation* and *item* concepts. Cf. <http://www.ifla.org/VII/s13/frbr/frbr.pdf>

Figure 1 – TEF 2.0 representation



Metadata exchange and OAI/PMH protocol

TEF standard offers a XML schema to facilitate metadata exchange between networks using the OAI/PMH protocol (Open Archives Initiative Protocol for Metadata Harvesting). This protocol defines rules to transfer metadata to different kinds of data repositories simplifying resource access in distributed architectures.

Dublin Core guarantees interoperability because it represents the "minimum required" to conform to OAI/PMH.

TEF metadata may be harvested and supply metadata to repositories. This action can ensure a larger theses referencing.

TEF standard will supply, in its second version (2.0), a subject classification permitting to assign one or more discipline subjects to published theses. This subject classification will facilitate metadata filtering for harvested theses by OAI/PMH protocol. This is also a way to create subject-based metadata repositories.

The classification is issued from a French theses context adaptation to Dewey Decimal Classification (22nd edition).

Conclusion

French theses are preserved in the libraries of the granting universities. They are referenced in local library catalogs and in the national SUDOC catalog.

Thesis referencing and discovering on the web are still limited. TEF work and a new legal national document (departmental order)⁹, about grey literature referencing and proposal, are essential elements to have better theses online access to theses and to promote French research.

ABES (Agence Bibliographique de l'Enseignement Supérieur) and CINES are going to propose new global software. The purpose is to help universities to implement TEF in a rapid way. The software is called STAR (Signalement des Thèses, Archivage et Recherche). STAR will manage theses files and will have submission forms for associated metadata (descriptive and administrative).

⁹ Expected for the beginning of 2006.

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Grey Literature archiving in Open universities: A model for India

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Abstract

Grey literature refers to an extensive range of materials that cannot be found easily through conventional channels such as publishers, but which is frequently original and usually recent. It is produced more quickly and has greater flexibility. Grey literature comprises newsletters, reports, bulletins and so on. It has tremendous importance in all fields of knowledge. In India, there are 12 open universities. These open Universities generate a voluminous amount of grey literature-Theses, dissertations, and working papers, technical reports, bulletins, self instructional material, audio, video material, radio broadcasts. Such documents contain very valuable and often detailed information like observations, conclusions, analyses and primary data, which constitute intellectual capital of the universities. These publications are not accessible to the scientists and academicians outside that particular university. The present study suggests a model for providing accessibility, thereby facilitating visibility, legitimacy to the grey literature, which is generated at open universities in India.

The Indira Gandhi National Open University (IGNOU) is a national university and an international center of excellence with a mission to take Higher Education to the masses. With its head quarters at New Delhi, the University serves its learners through a network of 46 regional centers 765 study centers across the nation. The University offers over 130 academic, vocational and continuing education programmes. IGNOU should initiative a program to acquire all self instructional material, project reports, dissertations, theses, working papers from all open universities and develop a national level repository because it has a mandate to set standards in Distance Education in the country.

The study highlights the role of library professionals in this regard. They ought to undertake an outreach campaign with the goal of imparting the importance of availability of grey literature at the right time to the researchers. It is estimated that every year an expenditure of 17,000 US\$ will be involved.

1. Introduction

Grey literature can be defined as information or material that is made available to the general public by public and private sector organizations whose function is not primarily publishing. It encompasses information resources that are not always easily available like brochures, pamphlets, company memoranda, market research, research reports, technical reports, pre-prints, fact sheets, working papers, committee reports, business documents,

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News letters, government documents, conference proceedings, white papers, symposia, bulletins, unpublished reports. These documents are not controlled through the usual bibliographic sources such as databases or indexes. Grey literature is found both in print and electronic format. Julia Gelfand has aptly remarked that science policy sites, scientific protocols and scientific journals are examples of grey literature available on the web (Gelfand, 1998). It is produced by government agencies, professional organizations, research centers, universities, public institutions, special interest groups and associations and societies whose sole aim is to disseminate current information to a wide audience.

The main difference between the grey literature and non grey literature or conventional literature is that the former is produced as part of a communication process and the latter is produced as part of a formal publishing/commercial undertaking.

1.1. Importance of Grey literature

Grey literature is an important source of information due to the primary nature of information it contains.. Because it is it is produced, generated by researchers and practitioners in the field, the scholarship is sound. It is produced more quickly and has an element of flexibility. It reinforces peer-reviewed findings. It has minute details of the primary research data. It helps scholars and lay readers, as it provides them with research summaries, facts, statistics, and other raw data that offer a more exhaustive, complete view of the topic of interest (Weintraub). With the rapid strides made in the information communication technologies, instant global communication has eliminated many of the obstacles of the information flow, and hence grey literature has gained more momentum.

1.2. Objective of the Paper

To suggest a working model of archiving Grey literature generated in the form of brochures, pamphlets, project reports, theses, dissertations etc., at the Indira Gandhi National Open University (IGNOU), India. This will enable effective capture, organization, preservation and dissemination of important information across the research and academic community.

2. Background information

Indira Gandhi National Open University, India was established through an Act of Parliament of India in 1985. It has its headquarters in New Delhi with national jurisdiction having 58 Regional Centres (RCs) and 1400 Study Centres (SCs) across the country. SCs are located in other conventional educational institutions like Universities, Colleges etc. The University has been a pioneer in the field of distance education in the country. The university offers 125 different programmes in Sciences, Social sciences and Humanities.

2.1. Collection of the Central Library, IGNOU

The library network of IGNOU operates through a three-tier hierarchical system having Central library at the headquarters at the IGNOU campus in New Delhi and the branch libraries at the regional and study centers. The Library and Documentation Division (L &DD) at the headquarters caters to the needs of over 1700 academic, administrative and support staff of the University. The Regional Centres' libraries meet the information requirements of their staff, academic counselors and academic coordinators. The Study Centres' libraries are meant exclusively to meet the requirements of the students and Academic Counselors.

The library is equipped with the following collection:

Books	Journals	Newspapers	Theses	Microforms/ CD-ROMs	Photographs	Pamphlets	Books at RCs and SCs
93814	365 (186 International)	23	44	17558/3200	499	94	241292

The system has many downsides. The catalogue provides limited access to the contents of the documents; these are not immediately accessible without the user visiting the library to browse the local holdings. Maintenance and upkeep of hard copies of documents and space management poses a challenge. Other academic and research institutions cannot access the central pool of grey literature generated at the University.

The inability to efficiently capture, organize, preserve and offer grey literature has serious repercussions for academicians, researchers and scientists (Tripathi, Prasad & Sonker, 2006). It is being suggested that visibility and accessibility to grey literature can be ensured by proper digitization and preservation of contents of reports, theses and dissertations.

3. Grey literature generated at open universities

Distance Education is the process of extending learning, or delivering instructional resource-sharing opportunities, to locations away from a classroom, building or site, to another classroom, building or site by using video, audio, computer, multimedia communications, or some combination of these with other traditional delivery methods. It aims at taking learning to the learner and the learning process is offered

at the convenience of the learner. The open universities generate lot of grey literature in the form of project reports, dissertation and theses. Often these are not accessible to researchers and academicians outside that particular organization where these are generated. Owing to this, large quantities of data and information remains hidden and unused. Knowledge is to be used and exploited for the betterment of mankind. The very purpose of creation and generation of knowledge is defeated if its proper dissemination cannot be ensured.

3.1. Initiatives made by Open Universities in India to capture and preserve grey literature

Initiatives made by open universities in India in controlling grey literature are summarized in table 1.

Table 1: Initiatives taken by the open universities in India to provide accessibility to grey literature

Yashwant Rao Chawan Maharashtra Open University http://www.ycmou.com	Dr.B.R.Ambedker Open University http://www.braou.ac.in	Vardhman Mahaveer Open University www.vmoukota.org	Indira Gandhi National Open University www.ignou.ac.in www.egyankosh.ac.in
News and events about the University Student services-results, prospectus, results of term end examination are provided	News Admission details, Information about Radio-Television Programmes	Information about different academic programmes Details about admission	Information about different programmes Results, forms of different examinations, question papers of past years are available egyankosh provides access to learning material of different programmes. Access is limited to faculty members only Efforts are afoot to develop and maintain an archive of educational programmes aired by the country

The table highlights efforts undertaken by the Open Universities in India to capture, organize and preserve grey literature are in the very initial stages. Plans are afoot in at least some of these institutions to organize and disseminate grey literature at a very significant scale.

Table 2: Initiatives taken by the open universities abroad to provide accessibility to grey literature

Open University UK library.open.ac.uk	ROUTES provides access to selected quality internet resources for open University courses Library holds e-print archive which has published journal articles, articles accepted for publication, conference papers, book chapters of faculty members of Open University OU in collaboration with BBC, Channel 4 and British Film Institute has launched Creative Archive. It provides access to moving images and recorded sound programmes held in the archive of these four organizations (http://creative.archive.bbc.co.uk) Library provides access to the internal reports of the University. The site provides links to databases which index reports and Grey literature. It also provides access to databases which provide full text of reports and grey literature
Athabasca University, Canada Library.athabascau.ca	DTPR AU Digital Theses Project Room provides researchers access to scholarly works-Dissertations and Theses of Graduate students

Hong Kong Open University Hong Kong www.lib.ouhk.edu.hk	Archival collection of the printed brochures, prospectus and other selected publications of the University OUHK Internal meeting documents are also available online for authorised University members only Electronic reserve collection has examination papers, reference materials, Theses& Dissertations of the students. 'Open link'-monthly Newsletter, Annual report of the University are fully accessible online -keep students, alumni, supporters up to date 'OUHK staff Publications' list the conference papers, journal articles and other publications of staff members. 'Chinese Management Review' of the University provides an online forum for scholars to share their latest research outcomes and insights- available full text and accessible to all. Video archive of public lectures and seminars "Learning OU Style" provides information about OU student life. "facts and figures" give information about past events, current developments of the University. Research areas of different schools are also highlighted
University of Philippines library.upon.org	Student handbook, Forms, Academic calendar, Policies of the University, Programs, Course Offerings, Counseling Provides information about the publications-books, papers, research projects undertaken by the faculty members of the University
Open University of Malaysia www.oum.edu.my	No such information about Grey sources available on its website
National Open University of Nigeria (NOUN) www.nou.edu.ng	Brochure, Pamphlets, Information about the major projects &activities undertaken by members of the staff

4. Model for developing archive at India Gandhi National Open University

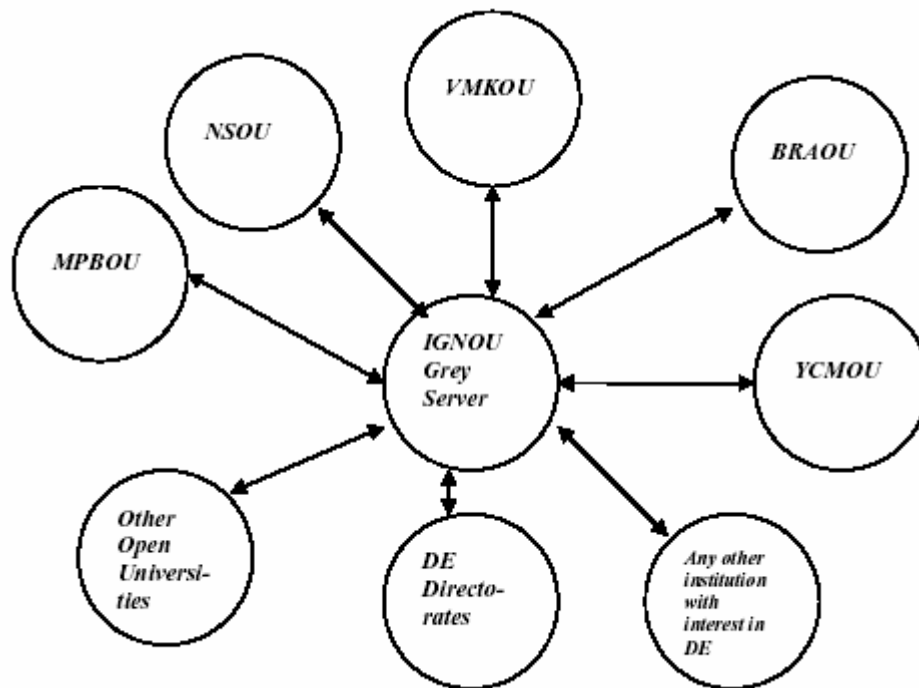
The different open universities and distance education providers are attached to different bodies and hence it is difficult to arrive at a cohesive model for all these institutions. IGNOU, which is the National Open University, is an autonomous body under Union Government where as State Open Universities are similar bodies under the respective State Governments. There are also very active Directorates of Distance Education under Conventional Universities, many of which fall under State Governments. Thus a highly flexible model satisfying the diverse stakeholders would work better than a very controlled and regulatory structure.

4.1. Option 1-Centralized Model

The Centralization would only concentrate on infrastructure required to maintain the grey literature archives and does not restrict the individual members from functioning. The individual members get full freedom to decide up on what content should go into the archives, whereas the Central body would only decide upon in which format it should be for the sake of easy operations.

They are 12 open Universities. The Open Universities should submit their selfinstructional material, project reports, and dissertations. Then IGNOU should digitize them and develop an online archive of such material. The individual universities are encouraged to supply the content as far as feasible in electronic format in order to reduce the time gap in making the contents available. They are also free to provide metadata for the content but if they cannot provide it, then IGNOU should prepare the same before uploading the content. A sketchy outline of this model is presented in Figure1. The inward arrow in the two-way arrow indicates the transfer of contents from different institutions to the IGNOU grey server and outward arrow indicates access of contents by these institutions. Metadata and content should reside at the Central Grey Server in IGNOU in this model.

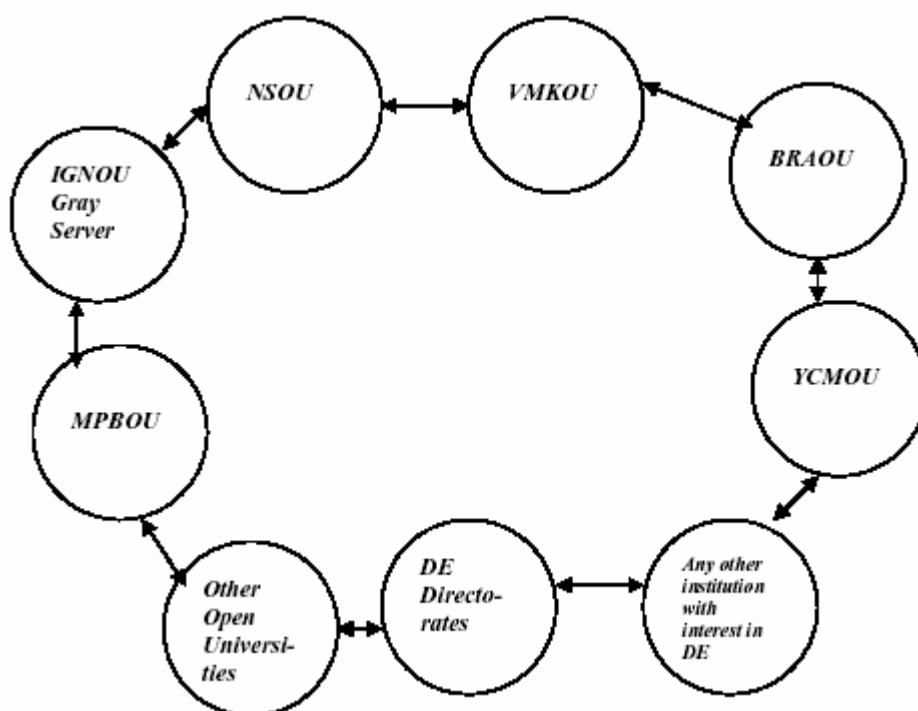
Figure 1: Centralized Model for Grey Literature Archiving in Open Universities of India



4.2. Option 2- Decentralised/Participative Model

The 12 open Universities can develop and maintain separate online archives of their own grey resources. In the event that some university is handicapped with shortage of funds, expertise, or infrastructure capabilities, IGNOU can create an archive for grey resources for that University too. Apart from the content of individual sites, each site also holds metadata records for the entire collection with links to resources at respective sites, making it easy for practitioners in each site to access and use the resources to the fullest extent possible.

Figure 2: Decentralized Model for Grey Literature Archiving in Open Universities of India



5. Purpose of the online archive

The purpose of the archive will be to capture, organize, preserve and disseminate grey literature generated at the open Universities. For this, the following steps will be executed: Registration of institutional users, User authentication, Profile set up, Document submission and formatting.

The collection of grey literature which is not in electronic form may be scanned and OCR-ed to facilitate full text search in these resources. The project reports, theses and dissertations submitted by the students should be digitized. The contents should be properly formatted and made cross browser compatible.

Archiving: It includes date stamping - unique number will be provided to each document. An exhaustive index supporting diverse access approaches needs to be prepared

Accessibility: Accessibility will be provided to the grey literature (including self instructional material) over the web. There will not be any user authentication for access of resources.

Administration and Maintenance: Administration and maintenance function will need to be supported too. The metadata of the contents need to be reviewed in order to maintain the quality of the records. Metadata can be shared among the archive.

6. Technology required

For **Model 1:** The server is to be made available only at the IGNOU site and other Institutions can access the resources and supply the required content in electronic format with the help of client PCs.

The server requirement proposed for the IGNOU site is as under:

- Dual Intel Xeon processor at frequencies up to 3.6 GHz with 1/2 MB L2 Cache
- Ultrafast Throughput with 800 MHz FSB
- Up to 8 GB of DDR2 RAM & 400 MHz Memory
- 5 I/O slots including PCI-e Slot
- 2 port SATA controller
- Dual Gigabit LAN
- Integrated RAID 0,1
- HDD 4 X 146 GB hot swappable ultra 320 wide SCSI HDD

Apart from the server, the network and software tools are also required:

- Red Hat Linux E.S. 3.0
- Open source DL/repository software: DSpace and its supporting software
- 2 MBPS leased line for internet connection

For **Model 2**, similar or servers of less specification is also required for the participating sites.

7. Cost of the project

Model 1:

- Server: Rs. 200000
- Internet connection: Rs. 50000
- 5 Client PCs for IGNOU site for R & D: Rs. 150000
- Two Project Assistants for 1 year @ Rs. 10000 per month: Rs. 240000
- Contingency: Rs. 100000
- Total: Approx. Rs. 740000 (17000 US \$)

Model 2:

Server at Main Institutions: Rs. 100000
 Internet connection: Rs. 50000
 2 Client PCs: Rs. 50000
 1 Project Assistant @ Rs. 6000 per month: Rs. 72000
 Contingency: Rs. 30000
 Approx. 3-4 such sites: Rs. 1057000
 Server at small Institutions: Rs. 60000
 Internet connection: Rs. 25000
 Client PC: Rs. 25000
 1 part time project staff @ Rs. 4000 per month: Rs. 48000
 Contingency: Rs. 20000
 Approx. 5-8 such sites: Rs. 1157000
 Overall cost: Rs. 2214000 (48000 US \$)

8. Suggestions for future

1. The Library and Information professionals have a significant role to play in disseminating grey information. They ought to undertake an awareness campaign for the academic community (researchers, scientists and teachers). They must impart the importance of availability of Grey literature at the right time to the right person and give utmost priority to disseminating this category of sources through the reference desk and other service points.
2. Different academic, Research and Development organizations should set up their own online archives and all technical reports, laboratory reports, project reports, theses, and dissertations should be archived and made available online
3. Digital archives should be OAI compliant; thereby making them available for metadata harvesting

9. Conclusion

The demand for Higher Education in India is increasing by 15% to 17% per year. But the capacity to increase the intake is a mere 7% per annum in conventional education systems. In this kind of a situation, open learning has emerged as a strong option for meeting the shortfall and also democratizing the whole process of teaching and learning. Though many institutions are active in the field of meeting this goal, so far the institutions are not waking up to the importance of preserving and disseminating grey literature for enhancing the impact of this mode of learning delivery. Perhaps libraries and librarians should make priorities for preserving grey information resources in their respective institutions as a first step in this endeavor. The Open learning system in India will indeed earn better dividends if this proposed model is implemented.

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A Cooperative Publishing Model for Sustainable Scholarship *

Robert Schroeder and Gretta E. Siegel (*Unites States*)

Abstract

Organizing scholarly publishing as a cooperative business has the promise of making journals more affordable and scholarly publishing more sustainable. The authors describe the development of the modern cooperative from its beginnings in England during the Industrial Revolution and highlight the great extent and diversity of business worldwide that is currently done cooperatively. Some of the current initiatives in scholarly publishing (SPARC, PLoS, German Academic Publishing, etc.) are analysed in light of cooperative business principles, and it is shown that, while these models often partially utilize cooperative business practices, none of them has adopted the cooperative model in totality.

A cooperative can be defined for practical purposes as a democratic association of persons organized to furnish themselves an economic service under a plan that eliminates entrepreneur profit and that provides for substantial equality in ownership and control.¹

The current state of scholarly publishing can best be defined as 'transitional.' For the past two decades we have been moving from print to electronic dissemination formats, from well-defined economic models that, for the most part, served the learned and research communities to wide-ranging models that span the spectrum from elitist to populist to everything in between. The past two years have been particularly interesting to anyone following the 'open access' trend, which, in varying ways (still ranging from elitist to populist), is attempting to broaden access to scholarly output while maintaining fiscal solvency, if not profit.

According to Association of Research Libraries (ARL) statistics, from 1986 to 2004 serials expenditures in ARL libraries have increased 273 per cent, while the Consumer Price Index went up only 73 per cent over the same period.² The current problem is that the 'circle of gifts' that Anne Okerson so elegantly described in her 1992 article, which she wishfully projected would embrace the digital wave and continue on as a circle, evolved in a way that has developed a weak link, that of egregious price setting and huge profit motives by commercial (and some society) publishers.³ Will the circle be unbroken? This is a question that can be answered only by the communities of scholars who are ready to take on ownership of the fruits of their labour. This article presents a tested model that, if applied to the current world of electronic scholarly publishing, could answer that question in the affirmative.

Scholarly journal publication has five major facets: product development, production, marketing, distribution, finance, and general administration.⁴ Most of these facets are similar in the traditional print journal realm and in the electronic realm, the only differences being that many processes take place more quickly in the digital environment. Product development for a new journal begins conceptually with the recognition of the need for a new publication and the development of a new publication's scope and niche. Next, an editorial board is commissioned and general editors, outside referees, and copy editors are found, all of whom will assure quality control. Articles are solicited from the scholarly community and the editing and vetting process begins. Once the requisite number of acceptable articles for an issue is produced, production commences. The authors' print and graphic components are

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reformatted to adhere to the design and computer standards of the publication, and the article is included in the journal's online version and, later, in its digital archive. Production may also include the abstracting and indexing of articles for future retrievability. Marketing and promotion of a new journal begins soon after a journal's conception and continues through a publication's run. Electronic distribution and order fulfilment begin as soon as subscription orders arrive.

The last two facets of journal publishing, finance and administration, are not part of the publication cycle per se but may be considered as overhead. The finance department sets the price of subscriptions and deals with accounting, legal, and tax matters. General administration oversees the publishing cycle and manages and coordinates the business operations.

Private businesses and scholarly communities have published scholarly journals for many years, but what would be the benefits of publishing them cooperatively? In order to answer that question, we must first understand what the cooperative business model is and where it comes from. Cooperatives are much more than neighbourhood natural food stores or grain elevators. While these are examples of cooperatives, we must understand what they have in common and how they came to exist.

The modern cooperative movement originated during the Industrial Revolution in Britain. The huge transformation of industry and the economy caused upheaval and great hardships among the workers in many occupations. Traditional individual craftsmen were losing their jobs to mechanized factories, while historically common lands were being privatized. In the north of England, by the early 1800s, 'life expectancy had dropped over recent decades from 35 years to 21 years,'⁵ and the wages of a handloom weaver dropped from thirty shillings per week in 1797 to five shillings and sixpence by 1830.⁶ Newly industrialized workers were forced to purchase goods at inflated prices at the company 'truck and badger' shops and were going deeper and deeper into debt. Philosophers and social reformers like Robert Owen began to see cooperation as a potential way to free the workers from their poverty. In the early 1800s Owen set up short-lived cooperative ventures in New Lanark and Orbiston in Scotland, and in New Harmony, Indiana. Dr William King, founder of a cooperative store, published the newspaper *The Cooperator* for two years, beginning in 1827, and gave a voice to the burgeoning cooperative movement.

On 15 August 1844 in Rochdale, England, a group of twenty-eight weavers and other tradesmen came together for what was to be a momentous event. In order to free themselves from their cycle of poverty, and in order to purchase affordable and unadulterated food, they formed the Rochdale Society of Equitable Pioneers. They had raised £28, and with it they rented a storefront and purchased twenty-eight pounds of butter, fifty-six pounds of sugar, 600 pounds of flour, a sack of oatmeal, and some candles. Their cooperative store was not the first of its kind even in Rochdale, but, because of the unique cooperative principles upon which it was founded, it was to be the most enduring and important one.

The original Rochdale Principles, as they have come to be known, were these: 'democratic control; one member one vote and equality of the sexes; open membership; pure unadulterated goods; no credit; profits to be divided on the amount of purchase made; a fixed rate of interest on investment; promotion of education; and political and religious neutrality.'⁷ These principles have been reviewed, revised, and affirmed over time, and the latest version, issued in 1995 by the International Cooperative Alliance, is as follows: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; education, training, and information; co-operation among cooperatives; and concern for community.⁸ These principles are at the core of what makes cooperative businesses unique, powerful, and successful. Control of the business is shared equally among the members of a cooperative, membership is voluntary and limited to the producers or consumers of a product or service, the economic benefits of cooperation return to the

members equitably, and because there is limited return on investment and the profit motive is non-existent, prices remain low.⁹

These unique principles have made cooperative businesses successful worldwide. In Britain in 1864 there were 100,000 members of cooperatives with £2.5 million in sales,¹⁰ and by 1993 there were eight million co-op members doing £7 billion in retail trade.¹¹ In 1993 in the European Union there were 45,000 worker cooperatives employing 750,000 people,¹² and worldwide there were estimated to be 800 million cooperative members and 100 million people employed in cooperatives.¹³

The cooperative movement has thrived in the United States as well. By 1985 there were 4.78 million members of farmer cooperatives,¹⁴ and in 1987 agricultural cooperatives had \$43 billion in sales of food and \$14 billion in sales of farm supplies.¹⁵ In 2000 mutual insurance companies accounted for almost 20 per cent of the life insurance in force in the United States (over \$3 billion),¹⁶ and, according to the *National Credit Union Administration Annual Report 2004*, there were 9012 credit unions in the United States with \$647 billion dollars in total assets.¹⁷ The range of cooperative business is huge. There are consumer co-ops, housing co-ops (including condominiums), credit unions, savings and loan associations, mutual insurance companies, marketing co-ops, utility co-ops, and agricultural co-ops. Some would even include trade associations and unions as cooperative associations.¹⁸ If all these different types of businesses can organize and flourish cooperatively, why not scholarly publishing?

Non-commercial dominance of the scholarly publishing arena has historical precedent. From the beginning of scholarly publishing in 1685 with the publication of the Royal Society of London's *Philosophical Transactions*, and for at least the first two hundred years, scholarly publication, to a great extent, remained in the hands of scholars. In the United States, until 1945, almost all of the technical and scholarly journals were published by professional societies.¹⁹ And while in Europe most of the scholarly publication is done by commercial firms, in 1995 commercial publishers accounted for only 40 per cent of scholarly scientific journals in the United States; 43 per cent continued to be published by university presses or by professional or learned societies.²⁰

To a great extent these non-commercial entities already understand the publishing business and publishing processes. There are many models for successful publication in existence, and the lack of technology or knowledge of the process is not the issue. The community of scholars knows full well that they are both producers and consumers of the output of their research; they just do not, at this time, control its dissemination. What is lacking is the collective will of the scholarly community to create a sustainable structure that will ensure access to fairly priced publications now and in the future. Cooperative university-supported publishing could accomplish this.

The cooperative business model would sustain publishing in a variety of ways. Democratic control and a limited return on investment would assure that prices rise only enough to cover expenses. Universities and their faculty are in a unique position in that we are the primary producers and consumers of scholarly work. It is in our best interest to keep all production and distribution costs down – the return on our investment will primarily come in continued lower prices for our quality scholarly product. Within the scholarly communities at most universities are experts who already perform, or know how to perform, many of the functions of electronic publishing. Faculty already edit, referee, index, and create online repositories for publications. They could work part time in the publishing cooperative alongside paid workers, thus further decreasing the cost of publication. There are many other faculty well versed in database creation and networking, as well as in marketing, sales, and accounting. For faculty in aligned disciplines – such as those in writing and publishing programs, business administration, and library science – there is a natural fit for engaging in publishing activities and even in the scholarship of publishing. Participating universities' recognition of this scholarship in the faculty evaluation process would

greatly facilitate participation by junior faculty members. While faculty in other fields – the sciences, humanities, and social sciences – are establishing and maintaining their intellectual presence in their respective fields of research, there will be some, generally senior, faculty who may choose, and could be encouraged, to take their prior experiences of writing, editing, and peer review a step further to actively engage with other activities in the publishing enterprise.

In these ways, not only could faculty contribute their talents, they could also disseminate new models and ideas of scholarly publishing to others. This task dovetails with the cooperative principle of 'education, training, and information.' The scholarship of publishing would also allow experts to teach new cooperative members how to start up and maintain their own new publications within the cooperative. This outreach and support aligns with the cooperative principle of 'cooperation among cooperatives'.

The current state of scholarly publishing is one of flux. The rallying cry over the past few years has been that the publishing models of the past decade or so have created an unsustainable environment. Experiments are being tried and new models tested. The following comments offer a brief look at some of these experiments and models in the context of established cooperative principles that have been successful in other arenas of enterprise and commerce. In Table 1, the far left column lists cooperative principles that seem appropriate to the area of publishing, as well as a few more related 'desirable' principles that would help to round out the picture of what an ideal cooperative model for publishing might look like. The rest of the table identifies which of these principles or characteristics are being met by some of the current 'en vogue' models. Discussion of these follows.

Table 1
Cooperative/desirable principles for publishing models

	SPARC	Open Access	Profit Driven	GAP
Basic co-op principles*				
Democratic member control				Partial
Voluntary and open membership	X			X
Member economic participation	X			X
Pure unadulterated goods (quality control)	X	X	X	X
Autonomy and independence	X			X
Limited return on Investment (no profit motive)	X	X		X
Benefit proportional to contribution				X
Promotion of education, training, and information	X			X
Cooperation among cooperatives				
Concern for community	X	X		X
Other related desirable principles for publishing models				
Appropriate and integrated application of diverse expertise				X
Sustainability (or the goal of same)	X	X	X	X
High visibility/access	X	X	X	X

* From the original Rochdale Principles or the 1995 International Cooperative Alliance

SPARC

The Scholarly Publishing and Academic Resources Coalition (SPARC) is an alliance of universities, research libraries, and organizations. Their agenda within the scholarly publishing arena is threefold: (1) 'Incubation of competitive alternatives to current

high-priced commercial journals and digital aggregations'; (2) 'Public advocacy of fundamental changes in the system and the culture of scholarly communication'; and (3) 'Education campaigns aimed at enhancing awareness of scholarly communication issues and supporting expanded institutional and scholarly community roles in and control over the scholarly communication.'²¹ In these efforts, the work of SPARC, while not exactly a co-op model, does acknowledge the cooperative values of care for the community, quality control, education and information, support for the non-profit sector, open membership, sustainability, and high visibility/access.

Open Access

Open access models, such as those put in place by the Public Library of Science (PLOS) or PubMed, are the types supported by SPARC. These differ somewhat in that PLoS is a commercial venture and PubMed is government based, but both share the approach that the results of scholarly research should be made freely available to the public. The definition of 'open access,' as drafted at the Bethesda Meeting of 2003 and adopted by PLoS, is as follows:

An Open Access Publication is one that meets the following two conditions:

The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.

A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving (for the biomedical sciences, PubMed Central is such a repository).²²

Implicit in this definition is the principle of care for the community, as the purpose of such a definition is to remove access barriers and allow the free flow of information. The requirement for immediate deposit into a digital repository demonstrates the lack of an ongoing profit motive, though of course there are costs to be covered in the initial publication of these works. Most journals that publish 'open access' articles are not member-based, so the principles of democratic control, member economic participation, and related other principles do not really apply to this model. An aggregator, such as BioMed Central, that specializes in the publication of open access journals could be in a position to adopt more of these member-oriented principles and possibly approach a true co-op model, should they be interested in exploring this route.

Profit Driven

Recently, premier scientific imprints such as Elsevier, Springer, and Kluwer have responded to market pressures by offering 'deals' to offset wholesale cancellations of journal subscriptions. They have offered libraries broader access to lists of titles in exchange for reduced cancellations of existing subscriptions and for transferring all existing subscriptions to electronic access only. There are variations on this theme, and while quality control and high visibility are maintained, and while the sustainability

of the publishing companies is improved, there is by no means any kind of commitment to any other cooperative principles.

GAP

As far as we are aware, the model most closely aligned with established cooperative principles to date is that of the German Academic Publishers Project (GAP).²³ GAP's purpose is to set up a cooperative consortium of academic presses, scholarly societies, universities, academic departments, and even individuals. The project's focus is on infrastructure rather than content. The stated goals are cooperation, sustainability, quality control (peer review), online publication (high visibility), and open access. Mostly for tax reasons, GAP has adopted a member-based model (in German, *eingetragener Verein*), with voluntary and mostly open membership (the project reserves the right to deny memberships).²⁴ While there is democratic involvement on some levels of operation and the benefits are proportional to the contribution made, GAP is not organized as a legal cooperative, which means that ongoing democratic control is not assured. The organization provides training workshops and information on electronic and scholarly publishing, as well as assistance to entities wanting to become members. The structure of the project involves a 'back office' (which provides technical services such as document storage, metadata transfer, support for universities wanting to start new presses, and the basic publication mechanisms) and multiple 'front offices,' which are the members utilizing the 'back office.' Members are able to contribute expertise on the various aspects of running the 'back office,' which makes the GAP model much closer to a true cooperative.

* * *

Historically, the society model of publishing came very close to the cooperative model, in that profit was not generally a motive and the academic producer/consumer engaged in all five of the major facets of production and distribution, especially if the society publication was based at an academic institution. When production and distribution became too burdensome, however, many societies turned these aspects over to commercial entities, and the model became much less cooperative. Now that all these processes can be carried out electronically, however, the time is ripe for a more radical paradigm shift than what is offered by many of the 'open access' models we are now seeing.

Many of the publishing models discussed above (SPARC, GAP, etc.) came about as a reaction to the economic burden placed on libraries over the past few decades by rising serials costs, and they have demonstrated that there are alternatives to for-profit publishing. The cursory analysis of the trends presented here makes it clear that there are basically two divergent approaches at work. One is the attempt to make for-profit models more sustainable, while the other puts the publication and dissemination of scholarship back into the hands of scholars. It is also clear that the latter approach can be successful only with the participation of many, thus leading to the promise of the more cooperative and democratic ventures being attempted. From the desperation of the Industrial Revolution, the weavers of Rochdale England found a way to supply themselves with the necessities of life. Millions of people have met needs – from electricity to housing, from banking to farming – through the thousands of cooperative societies and ventures that have since prospered. Should the scholarly communities of additional countries adopt the GAP model, or something similar, and from there form a global partnership of a 'cooperative of cooperatives,' there may be some hope for a truly sustainable model of scholarly publishing.

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From Science to Policy and Decision Making: Investigating the Use and Impact of Grey Literature of Governmental Agencies Focussed on the Environment A Research Project

Bertrum H. MacDonald and Peter G. Wells (*Canada*)

Publication is currently an extensive phenomenon because it is easily achieved with widely accessible digital technologies. Annually, many millions of publications are generated worldwide. However, distribution and access to these publications can be problematic, even in the presence of increasing open access systems, the Internet, and powerful search engines. Readers of *The Grey Journal* know that vast quantities of publications produced outside of the networks of mainstream commercial and academic publishers may languish unused even when the publications can be of great value. If unaware of the existence of important scientific and technical assessments found in this "grey" literature, policy-makers may make decisions in an untimely manner or overlook risks that could or should be managed more effectively or not act at all even when they should. Production of grey literature is central to the publishing practices of many organizations. But is that literature ever used to maximum efficiency? Are the extensive resources (in some instances upwards of \$1 million per title) devoted to the production of such publications justified?

In April 2007, we were awarded a three-year, CAN \$137,327 research grant from the Social Sciences and Humanities Research Council of Canada to study the use and impact of grey literature on environmental subjects produced by national and international governmental agencies. Building on previous work (MacDonald, Cordes & Wells, 2004; MacDonald, Cordes & Wells 2007) our research will focus on the Canadian federal department, Environment Canada, and two intergovernmental organizations, the Gulf of Maine Council on the Marine Environment, and the UN advisory body, the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). These three governmental bodies represent national, regional-international, and global settings where grey literature is prominent.

To develop a comprehensive understanding of the place of grey literature in knowledge diffusion, our research program will address four main questions: 1) Do publication characteristics of grey literature influence its discovery, use, and impact? In particular, what is the impact of scientific and technical grey literature produced by governmental and intergovernmental environmental organizations? 2) In public policy decision-making contexts are research reports published as grey literature perceived differently than research published as papers in scientific and technical journals (even when grey literature may undergo similar quality checks as journal papers)? 3) Since diffusion and use of information can be tracked in a number of ways, how should the impact of grey literature be measured and assessed? and 4) Given significant current developments in digital publications and search technologies, how should publications be designed for effective discovery and ultimately for impact?

Through the use of a suite of research methodologies (citation analysis, content analysis of public policy documents, interviews of key informants in public sector management, and surveys) we aim, with our team of graduate research students, to develop a thorough understanding of information and knowledge diffusion and use in public sector contexts. We anticipate that our findings will reveal the roles of grey literature in such settings and will highlight how scientific communication occurs in public policy decision-making where the dynamics of knowledge generation and use are different than in wholly research environments, a context currently missing in scientific information communication models. In addition to extending understanding of research communication and knowledge use, the findings of our research will offer insights relating to digital publication designs, diffusion mechanisms, and knowledge management for publishing bodies, for information systems designers (e.g., search designers), research scientists within either wholly research settings or public policy arenas, public sector managers, governmental bodies, and research funders. We believe that our research will be of importance to many organizations that communicate with audiences through grey literature.

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On the News Front

ABC-CLIO ONLINE HISTORY AWARD 2007

The 2007 ABC-CLIO Online History Award, sponsored by the History Section of the American Library Association Reference and User Services Association, was presented to Faith Jones of the New York Public Library for the design and creation of the Yizkor Books Project. The award is given to encourage, recognize and commend professional achievement in historical reference and research librarianship, and was initiated in 2005 as a bi-annual award. The History Section and ABC-CLIO, a publisher of reference materials in the field of history, seek to encourage the development of freely available, sustainable online history resources with this award by singling out innovative projects and the individuals who create them. An article about the Yizkor Book Project, co-authored by Ms. Jones and by Gretta Siegel, was first published in the GL7 Conference Proceedings, January 2006.



"This new award signifies a logical partnership between ALA's section for history librarians and the company that has done more than any other to foster history librarianship," said Jim Niessen, award committee chair. "Technology is helping researchers gain access to distant resources, but the ingenuity of librarians is key to bringing them together."

"We're very pleased to be working with the History Section of RUSA to sponsor this important new award," said Ron Boehm, CEO of ABC-CLIO. "For fifty years, history has been our only focus, our pride and our passion. Helping to recognize the achievements of others in the field is a natural extension of our mission."

Reference and User Services Association



Grey Foundations in Information Landscape

GL9

Conference Program

DAY ONE

9:00-10:30

OPENING SESSION

Chair, Dr. Geert Van Grootel, Department of Economy, Science and Innovation; Flemish Government (Belgium)

Welcome Address, Representative Flemish Government

Keynote Address, Prof. Dr. Claudia Lux, President-Elect IFLA and Director General ZLB (Germany)

Opening Paper, *Greyscape* by Keith G. Jeffery, CCLRC (United Kingdom) and Anne Asserson, UiB (Norway)

11:00-12:30

SESSION ONE - TOOLS FOR PUBLISHING, ARCHIVING, AND ACCESSING GREY LITERATURE

Chair, Julia Gelfand, University of California, Irvine Libraries (United States)

Accessing grey literature in an integrated environment of scientific research information

Elly Dijk, Royal Netherlands Academy of Arts and Sciences, KNAW Research Information, Netherlands

Enhancing Visibility: Integrating Grey Literature in the SOWIPORT Information Cycle

Maximilian Stempfhuber, Philipp Schaer, and Wei Shen, GESIS / Social Science Information Centre (IZ), Germany

Assessment and improvement of a corporate research information system

Maria Castriotta, ISPESL – Dept. of Documentation, Information and Training, Daniela Luzi, CNR – National Institute of Population Research and Social Policies, and Mariarosaria Manco, LINK s.r.l, Rome, Italy

Open access to full text and ETDs in Europe: improving accessibility through the choice of language?

Christiane Stock, INIST-CNRS, France

13:30-15:00

SESSION TWO – USE AND IMPACT OF GREY LITERATURE IN SCHOLARLY COMMUNICATION

Chair, Anne Asserson, University of Bergen (Norway)

The impact of Grey Literature in the web environment: A citation analysis using Google Scholar

Rosa Di Cesare, Daniela Luzi, Roberta Ruggieri, Istituto di Ricerche sulla Popolazione e le Politiche Sociali; CNR, Italy

Grey literature on bilingualism in Belgium Joachim Schöpfel, INIST-CNRS, France

The use of GL in historical journals and historical research: A bibliometric and qualitative approach

Cees de Blaaij, Public and Academic Library of Zeeland, Netherlands

Grey literature for development: Some case studies Bharati Sen, SNDT Women's University, Mumbai, India

15:30-17:00

INFORMATION WALK-THRU – PRODUCT & SERVICE REVIEWS, POSTER PRESENTATIONS

Opening presented by a Representative of OPOCE, Office for Official Publications of the European Communities.
See below for further details!

17:00-18:00

CONFERENCE RECEPTION

Delegates welcomed by a Representative of the City of Antwerp



Grey Foundations in Information Landscape

GL9

Conference Program

DAY TWO

09:00-10:30

SESSION THREE – GREY LITERATURE IN CENTRAL AND EASTERN EUROPE

Chair, Agnieszka Wenninger, *GESIS Service Agency Eastern Europe (Germany)*

Opening Paper: Digital Documents in Grey Literature: New Challenges

Aleksandr V. Starovoitov, *Centre of Information Technologies and Systems of Executive State Authorities*; Lev G. Titarev, *International Centre for Informatics and Electronics*; Yuri M. Bogdanov and Leonid P. Pavlov, *VNTIC, The Scientific and Technical Information Centre of Russia*

Some Types of Grey Literature – Polish specificity Marek Nahotko, *Jagiellonian University, Poland*

Grey Literature in Slovenia – Traditional is solved, what's next? Primož Juznic, *University of Ljubljana, Slovenia*

11:00-12:15

SESSION FOUR – NEW FORMS OF GREY LITERATURE IN ELECTRONIC FORMATS

Chair, Dr. Joachim Schöpfel, *INIST-CNRS (France)*

The Researchers' Social Network and Grey Literature

Patricia Erwin, *Institute for Information Infrastructure Protection/Dartmouth College, United States*

Virtual Reality and Establishing a Presence in Second Life: New Forms of Grey Literature?

Kristine Ferry, Julia Gelfand, Dana Peterman, and Holly Tomren, *University of California, Irvine, United States*

Finding the Grey in the Blue: Transparency and Disclosure in Policing

Paul Sturges and Louise Cooke, *Loughborough University, United Kingdom*

13:15-14:45

INFORMATION WALK-THRU – PRODUCT & SERVICE REVIEWS, POSTER PRESENTATIONS

(Continued from Day One)

13:15-14:45

PANEL SESSION – EDUCATION AND GREY LITERATURE

Chair, Prof. Dr. Michael Seadle, *Humboldt University in Berlin (Germany)* [to be confirmed]

Updating Grey Literature as Distance Education Matures

Julia Gelfand, *University of California, Irvine, United States*

Grey Literature in Library and Information Science Education: A survey of faculty, students and courses in North American LIS departments Debbie L. Rabina, *Pratt Institute, United States*

Grey Literature: A Pilot Course Program via Distance Education

Dominic J. Farace and Jerry Frantzen; *GreyNet, Netherlands*; Joachim Schöpfel and Christiane Stock; *INIST-CNRS, France*

15:00-16:00

CLOSING SESSION - REPORT FROM THE PANEL SESSION, CONFERENCE EVALUATION, AND FAREWELL

Chair, Daniela Luzi, *CNR-IRPPS (Italy)*

About the Authors

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