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Access and document supply: a comparative study of grey literature

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Abstract

The report addresses the different aspects of the accessibility and dissemination of grey literature in the digital age where the de-materialization of documents has led to a new paradigm that has superseded the intrinsic characteristics of printed material.

Based on the added value of grey literature for academic institutions, the report attempts to provide an analysis of the ongoing transformations, especially concerning the way in which research and development in the area of grey literature have become part of the open access movement.

In this context, we will analyse some of the major public supply services for the dissemination of grey literature: their typology, their strategic approach, and the special conditions and characteristics of their service. What are their projects with regard to grey literature and the open access movement? What is the impact of these projects on document supply, acquisition policy and the information system?
For the study, we selected five public institutions: the British Library (UK), the CISTI (Canada), INIST (France), KISTI (Korea) and the TIB Hannover (Germany). We excluded networks and corporate profit-based suppliers.

Introduction

One characteristic of grey literature is that it is “often difficult to […] acquire through normal bookselling channels” (British Library)\(^1\) because it lies “outside of commercial circuits of publication and dissemination” (AFNOR)\(^2\). For those professionals and scientists who are desirous of gaining more information, the search for and acquisition of this kind of “underground literature” can be a time-consuming, sometimes expensive and even frustrating experience (see for example Hartley 2004 for conference proceedings).

Because of the importance of grey resources for scientific research and teaching, all major public document suppliers invest in collections and delivery services for theses, conference proceedings, reports and unpublished working papers. Some of them offer additional help for the identification and localising of these often poorly recorded documents.

These special collections and their bibliographic controls induce significant costs to libraries, and “grey supply” is often more expensive than the traditional delivery of items from “white” publications.

Today, libraries and document supply services are confronted with the open archive (OA) movement and have had to adapt to it. The following paper gives an overview of the grey holdings and delivery services of five major document suppliers – the British Library (BL), the Canadian Institute of Scientific and Technical Information (CISTI), the French Institut de l’Information Scientifique et Technique (INIST), the Korean Institute of Scientific and Technical Information (KISTI) and the German National Library of Science and Technology of the University of Hannover (TIB) – and describes their reactions and projects in the OA environment. This overview is completed by an analysis of the position of the international lobby organisation of information services, the ICSTI.

Some remarks on OA and grey literature

The origins of the short history of open access are known: free peer-reviewed journals like Harnad’s *Psycholoquy* or Guédon’s *Surfaces* and article repositories such as Ginsparg’s *ArXiv* or Harnad’s *CogPrints* have started to challenge the traditional model of scientific communication since the early 90s. These and other initiatives were the scientists’ and academics’ reaction to the pricing policy implemented by the publishers of journals and reflected their intention to re-appropriate the channel of the communication of and to improve the dissemination of research results with the new information and communication technologies (see Crawford et al., 1996). The general impact on intellectual property and the “value chain” has been well documented by Roosendaal (2004); its effect on document delivery has already been conceptualised (see Rowse, 2003 or Brown, 2003).

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1. [http://www.bl.uk/]
2. [http://www.afnor.fr/portail.asp]
We won’t add another review to the rather abundant literature on the theory, history, structure and software of the open access movement. The reader will find comprehensive introductions to the European and more specifically to the French initiatives on the Southampton, URFIST Paris, CNRS or Max-Planck websites or through textbooks such as Grüttemeier & Mahon (2002) and Aubry & Janik (2005).

Yet, the conceptualisation of the relationship between OA and grey literature is just at the beginning stages (see for example Søndergaard et al., 2003, Banks, 2004 or Stock and Schöpfel, 2005). Do the “green” or “gold” roads (Guédon, 2004) transform white into grey documents because they leave the traditional commercial control and dissemination channels? Or, on the contrary, do open archives promote the shift from grey to white documents by increasing their availability and access? It is obvious that the boundary between white and grey is shifting, and that we need more empirical evidence on grey literature and open access systems in order to update our understanding of what is grey.

Compared to article repositories, open archives for grey literature are more recent and less numerous. One of the first, most important initiatives (if not the first) was the 1996 creation of the Networked Digital Library of Theses and Dissertations (NDLTD) by Virginia Tech. Other totally or partly grey realisations are the French-Canadian Cyberthèses developed by the Montreal and Lyon 2 universities (electronic theses and dissertations, ETDs), Grisemine from the University Lille 1 (see Claerebout 2004), Archimer from the French Research Institute for Exploitation of the Sea (IFREMER), the French national portal in mathematics Mathdoc (preprints, course material, proceedings and ETDs together with white resources and archives) and the open archives of the CNRS Centre of Direct Scientific Communication at Lyon (CCSD), such like ArchiveSIC and MemSIC (publications, dissertations and working papers in information and communication sciences) or TEL (ETDs, see Paillasard et al., 2005).

In spite of their great variety, all these archives and repositories have in common the increased value awarded to grey resources and the improvement of their availability and dissemination. Nevertheless, the majority of them are small-scale projects compared to the existing print holdings of grey literature. Another characteristic of these archives: up to now, reports, proceedings and other non-traditional types of grey literature (educational materials, working papers etc.) have been rather under-represented, compared to dissertations and preprints (cf. Banks 2006).

But what exactly is the impact of the OA movement on the former suppliers of theses, reports and proceedings? How are they reacting in response to the development of institutional repositories; how are they involved especially in the domain of grey literature? There is very little evidence on this topic (for the North American context and the role of the physics preprints archive, ArXiv.org, see Jackson, 2004), so we decided to undertake an empirical study based on information available on the Web or published elsewhere and on interviews with the leading managers of the cited institutions.

Questions and methodology

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3 http://www.eprint.org
4 http://www.ccr.jussieu.fr/urfist/ArchiveOuverte/OA.html#ou
5 http://openaccess.inist.fr
6 http://www.zim.mpg.de
The underlying questions are about the existing holdings of grey resources, supply conditions and pricing, involvement in digital and in more specific OA projects, and on approaches and attitudes towards the OA movement. Five major institutions were selected for this study:

The **British Library (BL)**\(^7\)
The **Canadian Institute of Scientific and Technical Information (CISTI)**\(^8\)
The **French Institut de l’Information Scientifique et Technique (INIST)**\(^9\)
The **Korean Institute of Scientific and Technical Information (KISTI)**\(^10\)
The **German National Library of Science and Technology of the University of Hannover (TIB)**\(^11\)

These “traditional suppliers” have in common a public mission to collect, preserve, archive and disseminate scientific information through a non-profit ILL and a document delivery service that is based on a mixed economic model with their income supplied both by public funding and their customers’ fees. In a certain way, they all share the “belief that collecting world knowledge and making it available for investigation generates new ideas and advances society” (The British Library, 2005).

ILL and document supply networks such as Subito, IMPALA or AutoDoc, were excluded because they have neither their own holdings nor a specific acquisition policy. For similar reasons, we excluded corporate, profit-based suppliers such as Infotrieve.

First we gathered information about collections and supply conditions – services, prices, activity reports etc. – from the web sites or from other sources. The information was organized in the following plan:

<table>
<thead>
<tr>
<th>Holdings</th>
<th>Services</th>
<th>Requests</th>
<th>Prices</th>
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<tr>
<td><strong>BL</strong></td>
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<td><strong>TIB</strong></td>
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</table>

Based on this information, we contacted the leading supply managers of the five institutions and proposed a survey on the following topics:

1. Figures on grey document supply and ILL in 2004.

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\(^7\) [http://www.bl.uk.com](http://www.bl.uk.com)
\(^8\) [http://icist.cnrc.gc.ca](http://icist.cnrc.gc.ca)
\(^9\) [http://www.inist.fr](http://www.inist.fr)
\(^10\) [http://www.kisti.re.kr](http://www.kisti.re.kr)
\(^11\) [http://www.tib.uni-hannover.de/](http://www.tib.uni-hannover.de/)
2. This area of their activities compared to the overall supply and ILL (%).
3. The recent evolution compared to the previous system.
4. Their projects in the area of grey literature (also together with other partners).
5. Their projects regarding the open access movement (also together with other partners).
6. The impact on the collection of grey literature.
7. The impact on document supply (service offer, pricing).
8. The impact on the bibliographic control of grey literature (cataloguing, record data).
9. The impact on the information system.

The original verbal contact taken up with the supply managers was followed by a written version of the survey and a semi-directive interview that potentially included other areas as well. The synthesis and interpretation of these responses will be communicated to the various institutions for comments and validation.

We’ll try to get additional information from the International Council for Scientific and Technical Information (ICSTI), a forum that “seeks to reduce or eliminate barriers to effective transfer of information by (…) enhancing access to and delivery of information to business, academia, government and the public”.

Our underlying assumption is that even if the impact of increased access to digital resources on document supply is relatively well documented, little is known about the specific effect on grey literature, especially in the sector of open access. Our hypotheses are:

- The portion of grey literature in overall supply activity is rather small.
- The “grey supply” follows the general trends of the overall activity.
- Due to their public mission, all institutions are strongly interested and more and more involved in open access projects.
- One part of these OA projects is related to traditional grey literature.
- This increased involvement has or will have various effects on the way they function and their activities, especially on the development of collections and supply services.
- This involvement may also impact bibliographic control (the shift from conventional cataloguing to metadata harvesting) and the information system (the shift from a central library management and/or supply system to a more distributed and OAI compatible structure).

During the 7th International Conference on Grey Literature held at Nancy, we presented the background, methodology and some preliminary results. The definitive results will be published in 2006.

In the following, we communicate the first (and incomplete) findings on the holdings, services and OA projects of the five institutions, without any results from the still ongoing survey. It is a work in progress, mentioned to inform others about our research project without any anticipation of future findings and conclusions.

The British Library

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12 http://www.icsti.org/about.html
The British Library is the world’s largest supplier of scientific information (Brindley, 2005). Its grey holdings – mainly dissertations, reports and conference proceedings – comprise about 4.9 million items from a wide variety of sources (UK theses, NASA and NTIS reports, proceedings from most of the international scientific events, but also maps, manuscripts, audio and music documents, etc.)\(^{13}\). The British Library was the most important national input centre in the European EAGLE network, providing more than 50% of the overall SIGLE records.

Nevertheless, since 1998/1999 the British Library has to cope with a significant decrease in the number of requests. Even if the exact number of requests is no longer published in the annual reports, the decline can be estimated at 5-10% per year (from 4 million in 1998/1999 to 2.4 million in 2004/2005).

In spite of this, the decrease in revenue from document supply does not affect its acquisition policy “which (is) seen as part of the public good” (Brown, 2003). The fundamental role of information collecting and preserving has been validated and reinforced by the report “Redefining the Library: The British Library’s strategy 2005-2008”\(^ {14}\) that places the end-user at the heart of its overall consideration. Their central credo is to “enrich the user’s experience”; their main objective: the creation of a digital library. In this new environment, document delivery is no longer a “stand-alone business” or “separate entity” but “one part of an integrated range of information services” (Brindley, 2005).

The British Library contributes to OA projects mainly through the Research Support Libraries Programme (RSLP), which indicates improved relationships with the UK higher education community (Law, 2004, Ceeney, 2004); one pilot project was the MAGiC cooperation with Cranfield University on scientific and technical reports (Needham, 2002). Other projects at the edge of grey and OA are the selective archiving of websites, the archival sound recordings (ASR) project and the digitalisation of selected collections in the context of the UK Digital Preservation Coalition (Millar, 2001). Some “Co-operation and Partnership Programmes” (Smith, 2001) are focused on the preserving, digitalisation and disclosure of national heritage resources and non-traditional items (legal materials, company reports, official publications etc.).

**CISTI**

The CISTI has a long history going back to 1929 (Krym and VanBuskirk, 2001). As one of the largest collections in North America, its mission is “to support the research and innovation communities by managing and disseminating high-value scientific, technical and medical information products and related services”.\(^ {15}\) The CISTI has become, over the years, the major provider of scientific information in Canada, making up about 36% of the Canadian market in the year 2000.

Apart from scientific periodicals (50,000+ titles), the CISTI collections include monographs, conference proceedings, technical reports and dissertations. For all types of documents the

\(^{13}\) [http://www.bl.uk/services/document/dsc.html](http://www.bl.uk/services/document/dsc.html)

\(^{14}\) [http://www.bl.uk/about/strategy.html](http://www.bl.uk/about/strategy.html)

\(^{15}\) [CISTI Strategic Plan 2000-2005](http://www.bl.uk/about/strategy.html)
CISTI outlines a specific acquisition plan, except those dissertations that are collected only in response to document supply requests\(^\text{16}\).

Since 2002, the CISTI has reported a decrease in revenue from its traditional activities, which is linked to the development of “concurrent” alternative access to scientific information – access to online journals (“big deals”), the availability of free resources on the Web, and open (free) journals and archives. This decrease in income from traditional document supply, considered to be a long-lasting reality, is at the origin of the redefinition of its economic model, especially of the charges for resource acquisition, and of its strategic development.

The strategic plan 2005 – 2010\(^\text{17}\) proposes a partnership strategy where CISTI creates, hosts and maintains an open access institutional repository for the publication of Canadian scientists and academics.

Another open access partnership is with the press of the CNRC that, since 1929, has published journals, monographs, and other types of grey literature. The online version of the 15 peer-reviewed CNRC journals is available to the Canadian scientific community for free through the CISTI web site. For other countries, the same access is based on a subscription that contributes to the economic viability of the CNRC press.

These projects are part of the “depository services program” (DSP) designed “to ensure that Canadians have ready and equal access to federal government information”, made possible by funding from the Treasury Board of Canada (VanBuskirk and Krym, 2003).

“This integrated, partnership-based approach to STM information will result in a Canadian science "infostructure" and a viable national STM publishing infrastructure. The competitive advantages offered by this investment will lead to better research and a more innovative economy”\(^\text{18}\).

The overall position of the OAI seems rather prudent – based on a realistic knowledge of national scientific production and the information requirements of their customers, the CISTI acknowledges that the number of supply requests will continue to decrease but that this is mainly linked to the online access of electronic periodicals and not to institutional repositories or other open archives.

**INIST**

Founded in 1988, the Institute for Scientific and Technical Information is a service unit of the French National Centre for Scientific Research (CNRS). Its mission is to collect, analyse and disseminate the results and findings of worldwide research in STM, social sciences and humanities. The supply of copies of scientific and technical documents is part of its traditional activities, whether or not the documents are held at INIST (Schöpfel, 2003).

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\(^{17}\) [http://cisti-icist.nrc-cnrc.gc.ca/about/stratplan05_f.pdf](http://cisti-icist.nrc-cnrc.gc.ca/about/stratplan05_f.pdf)

\(^{18}\) [http://cisti-icist.nrc-cnrc.gc.ca/about/stratplan_summary_e.html](http://cisti-icist.nrc-cnrc.gc.ca/about/stratplan_summary_e.html)
The legal background to this service is based on the French law on intellectual property as well as on an agreement with the French copyright agency (CFC).

The INIST grey collections are rather significant: 70,000 conference proceedings, 150,000 dissertations and theses and 70,000 scientific and technical reports. As the national centre of the European EAGLE network, INIST is a central part in the French landscape of the collection and dissemination of grey public research documents.

The CNRS and INIST have been particularly active in several ways in the European and French OA movement (Romary, 2005, Schöpfel, 2005, Grüttemeier, to be published). Some of these activities are:

- The signature of the Berlin Declaration on Open Access 2003.
- Institutional Membership of BiomedCentral (French host of the BMC archives).
- Contribution to a national common OA policy and the development of a central national repository for French public research, together with other public research organisations (INSERM, INRIA, INRA).
- The development of OA platforms for digital periodicals (“I-Revue”) and reports (“LARA”, see Stock et al., 2006).
- The organization of conferences and seminars on open access to scientific information and the creation of a Web site dedicated to OA issues with international news, reference texts and review articles.\(^{19}\)

The general evolution of the INIST supply activity is well documented (see Schöpfel, 2003, Bador et al., to be published). Since 2001, the downward trend is about 10% per year. INIST offers print and electronic delivery (ARIEL); secured document supply with digital rights management is under preparation.

Document supply and resource acquisition are not directly linked. INIST’s “historical” objective is to supply all requested documents, may they be part of its collections or not. In 2005, more than 20% of the items supplied were from other (French and foreign) libraries, and this percentage is steadily increasing. At the heart of the supply service is the identification and localisation of the requested items. As a result, the INIST supply service could become more and more independent of its own collections which would be “replaced” by remote resources (online resources, holdings from other libraries).

**KISTI**

The South Korean science and technology information centre, a non-profit affiliated organization of the Korean Research Council of Public Science and Technology under the control of the Prime Minister’s Office (Choi 2003), provides a nationwide information service to support industrial and technological development in Korea by facilitating the access to and utilization of information resources.

The KISTI collection contains a wide variety of resources, journals, monographs, R&D reports, conference proceedings, patent specifications etc. The document delivery service supplied more than 300,000 items in 2001, from the KISTI holdings or from other libraries.

\(^{19}\) [http://www.inist.fr/openaccess](http://www.inist.fr/openaccess)
(11%), especially foreign document service bodies such as the British Library (Shin and Oh, 2002).

KISTI has developed a Scientific Information Integrated System (SIIS), a portal system that gives access to databases and online resources. Grey literature is part of these digital information resources: access is provided to research and development reports (200,000 items), master and doctoral dissertations (700,000 items), Korean patents (2,100,000 items) and foreign patents (14,000,000 items), the science and technology factual database (1,400,000 items) and scientific materials and instruments (22,000 items) (Choi, 2003).

The OAI is discussed in Korea but up to now it seems unclear if it would become a national standard for the long-term preserving of and access to digital information (Choi 2003). Nevertheless, KISTI has been developing a multilingual electronic theses and dissertations (ETD) system since 1989 as a national digital library in South Korea and as part of the international effort to construct a networked digital library of theses and dissertations (Zhang, Lee and You, 2001). This database supports full-text searches in English, Korean, Chinese and Japanese, and provides access at individual page level. In September 2001, it contained already 23,368 ETDs; about 25% of the visits came from more than 20 foreign countries.

**TIB Hannover**

As one of the most important libraries in Germany since its foundation in 1959, the German National Library of Science and Technology of the University of Hannover (TIB) defines its task as the following: “to comprehensively acquire and archive literature from around the world pertaining to engineering and the natural sciences… Holdings (…) are available (…) through our document delivery service”. The library “places a particular emphasis” on the acquisition of grey literature. The TIB holdings comprise around 8.2 million items (print, microforms, CD-ROMs), a figure that includes conference proceedings, research reports, patents, norms and standards, and dissertations.

The TIB participates in a large number of projects, with a key focus on electronic publications and the development of a digital library. Some current projects are on grey literature and/or open access:

- CODATA: contribution to the publication and citation of scientific primary data through attribution of DOI/URNs.
- ELAN Niedersachsen: development of e-learning services (metadata model, content integration into online access systems, cross-linking with standard services, long-term preservation in an OA environment).
- Probado: development of a service (preservation, handling, search, delivery) for complex, non-textual data and documents (e-learning, music, 3-dimensional computer graphics).

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20 http://science.knowledge.go.kr
21 http://www.tib-hannover.de/en/about_us/overview
22 http://www.tib-hannover.de/en/about_us/projects/?p=on
Concluding remarks

This communication is limited to an overview of the focus of the study and of a global description of the general mission, holdings, acquisition policy and OA projects of the five institutions. Some preliminary results:

- All libraries place special emphasis on grey literature and have important grey collections, especially of conference proceedings, reports and dissertations.
- All structures are more or less involved in OA projects. Nevertheless, the significance and range of these projects depend on their specific mission and role in the national context. At least two structures – CISTI and INIST – participate actively in the development of national institutional repositories.
- Some of these projects are directly linked to grey literature, especially to ETDs and preprints but also to courseware, primary data and reports.

These first results are based on an analysis of web-based and published information. They will be amended and completed in the next months by the feedback on our survey on document supply and OA projects.

References


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