THE PROJECT DEGREE
Dissemination of Electronic GREy files on Economics

by

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Abstract

Between July 1996 and July 1997 seven Dutch universities were involved in the project DEGREE (Dissemination of Electronic GREy files on Economics). Objectives of the project were: electronic production, disclosure and availability via WWW of full text working papers on economics and business economics.
Procedures and formats were analyzed, discussed and established.
This joint effort resulted in a national WWW homepage for working papers on economics, where the full text papers can be retrieved.
The URL of DEGREE is: http://cwis.kub.nl/~dbi/degree/
Structural continuation of the project is based on a gentlemen's agreement between the DEGREE participants.
In an international scope, cooperation with RePEc is established.
This paper will describe the way in which the project DEGREE was set up, carried out and build into an interesting WWW site.

Introduction

The distribution of working papers may change significant in a fully networked world. By taking full advantage of information technology, the flow of information can be improved. Since libraries are well equipped for this task, it figures to expand their traditional roles of intermediaries between authors of documents and users of documents to the electronic world. The DEGREE project has succeeded in realizing this for the Netherlands.

The project DEGREE

DEGREE is a Dutch project supported by IWI, a steering committee for Innovation in Scientific Information Provision. IWI is a committee of the SURF Foundation, a cooperative organisation for the advancement of computer services in higher education and scientific research in the Netherlands.

The project started in July 1996 and was successfully ended after one year.

Libraries from seven Dutch universities were involved: University of Amsterdam, Free University of Maastricht, University of Groningen, Erasmus University Rotterdam, University Maastricht and Tilburg University. The latter coordinated the project.

Every university library appointed a member of the project group. Besides meetings, an electronic discussion list was used to communicate within this group.

As a general objective DEGREE aims at optimizing the dissemination of working papers on economics and business economics. In order to achieve this goal, the following items had to be worked on:

1. Production and WWW availability of full text working papers on economics and business economics;

2. Cataloguing and subject indexing of electronic working papers;

3. Realization of the former two objectives in an "open model", in order to make it possible for other organizations to cooperate in the same way.

The developments and results for each part of the project DEGREE are as follows.

1. Production and WWW availability

First of all, it was determined that only serial working papers on economics and business economics, issued by an organization would be included in the project. Like this, the responsibility for quality and continuity of working papers remains in the hands of the institute/faculty.

Although matters of copyright for electronic papers are similar to printed working papers, there are scientists who fear the negative reaction of journal publishers. Especially in the field of business economics authors are reluctant to publish their working paper electronically. It is, therefore, good to be prepared for discussions on this matter both with authors and with publishers. Our experience on this point is very reassuring, since, during the course of the project, it only happened once that an author was told by the publisher of his journal article, not to make his working paper available via WWW.

It is realistic to assume that most of the current papers are produced by means of computer; economists generally use WordPerfect, Word, LaTEX , etc. In the DEGREE project these different files are made available on the Internet in PostScript and Acrobat PDF. Viewers for PostScript and PDF are available for free on the Internet. Very few authors submit their paper in HTML; hopefully their number will grow in time.
The electronic papers are stored on a (part of a) local WWW server.
The matter of storage period has not been dealt with in this project, but surely this problem must be handled in the future. Important questions like "where must older papers be stored, in every university or at a central location?", "what happens to outdated formats?", etc. still have to be answered.

There is no general procedure for the realisation of the above mentioned production of electronic working papers and their accessibility on the Internet. Due to a variety of organization structures in every university, matters of responsibilities and rules differ from place to place. It is essential to have a good view on one's own situation concerning regulations for the production and WWW availability of electronic papers.
Therefore on all seven universities, a working group was established in order to get things organized at home in a way that suits the local situation best.

As a result, the production of electronic working papers has developed in various ways for the DEGREE partners. This shows on the different WWW homepages, where, after one year, the amount of full text available papers was as follows:

Erasmus University Rotterdam: http://www.eur.nl/WebDOC/doc/	142 working papers
Tilburg University: http://greywww.kub.nl:2080/greyfiles/	319 working papers
University Groningen: http://docserver.ub.rug.nl/eldoc/som/index.html	66 working papers
University Maastricht: http://www-edocs.unimaas.nl/~document/fdewb.htm	186 working papers
University of Amsterdam: http://www.fee.uva.nl/bieb/edocs.htm	48 working papers
Free University of Amsterdam: http://pc038.ubvu.vu.nl/afdeling/economie/memoranda/	3 working papers
Nijenrode University:	2 working papers

http://www.nijenrode.nl/library/publications/nijenrode.html

In order to evaluate procedures and products, a number of authors, library users, library staff and faculty staff were interviewed. This resulted in some useful remarks which enabled us to improve the DEGREE website, local websites and local procedures.

2. Cataloguing and subject indexing of electronic working papers

It was very tempting to catalogue electronic working papers in the same way as printed versions are. But for a virtual collection of papers, it is more appropriate to use a virtual way of cataloguing. Advantages are: decentralization of cataloguing activities, sharing bibliographic data, possibility to use data in a local database. Based on international developments in this field, a DEGREE format for bibliographic data was decided upon and a DEGREE archive was established on a WWW server at Tilburg University Library. There, bibliographic records are converted into the DEGREE database, which is accessible for free via the DEGREE Internet homepage. All of these activities are executed without charging or paying anyone of the DEGREE partners; self-interest is the best motivation in this case.

As far as subject indexing by keywords is concerned, Tilburg University Library uses the "Attent Thesaurus", which is locally designed and maintained, and specialized in economics and business economics, including relevant mathematical keywords. Nijenrode University Library uses the "SCIMP/SCANP thesaurus", specialized in business economics. The other partners use uncontrolled keywords.

The bibliographic records contain abstracts as far as they are provided by authors. Since this is mostly the case and the DEGREE database can be searched by abstract words, this too is a fine way of retrieving working papers by subject.

There is no option for full text searching in the DEGREE database.

3. Open model

To prevent us from re-inventing the wheel, the Internet was scanned on comparable initiatives. The following Internet sites were examined: WoPEc, EconWPA, ERN. Soon it became clear that the organization behind WoPEc had the same objectives as DEGREE. In fact the two projects are complementary: DEGREE organizes a national archive which becomes part of the international RePEc archive in England. We contacted the initiator of WoPEc at University of Surrey, who was very pleased with the DEGREE project, since at that very moment he was studying on a better way of shared cataloguing for electronic working papers on economics and business economics. By mutual agreement, general procedures for the availability of bibliographic records in archives were established in the "Guildford Protocol". The idea is to create bibliographic record archives which can be mirrored by anyone who needs them for a database.

So far, the following archives, containing bibliographic data of electronic working papers on economics and business economics, are included in the RePEc archive:

- Boston College
- Bonn University
- London School of Economics, Centre for Economic Performance
- London School of Economics, Financial Markets Group
- Centre for Economic Policy Research
- DEGREE
- De Montfort University, School of Social Sciences
- Centre for Economic Learning and Social Evolution
- S-WoPEc, Swedish Working Papers in Economics
- Economic Working Paper Archive at University of Jena
- National Bureau of Economic Research
- Universidad de Valencia, Faculdad de Ciencas Economicas

Only two of the above listed archives are national archives (S-WoPEc and DEGREE). The rest are organizational archives.

National archives provide a solid structure to facilitate the dissemination of electronic working papers. In the Netherlands, this is set up according to the DEGREE model.

DEGREE model

The DEGREE model is designed for working papers on economics and business economics, but can be used in other disciplines or for other documents, provided that similar conditions apply.

Content:

1. Conditions for participation in DEGREE
2. Organization on a local level
3. Organization on a national level
4. Production of electronic working papers
5. Bibliographical description of electronic working papers
6. International cooperation
7. Checklist

1. Conditions for participation in DEGREE

Three conditions apply:

- There is a series of working papers on economics and/or business economics, published by an institution or faculty. Individual papers, not issues as a series, are not included.
  The set-up and peer review of such a series is taken for granted and only the electronic dissemination of the papers has to be organized.
- The working papers are copyright free; the institute or faculty gives permission to make the full text of the documents available on the Internet.
- A WWW (World Wide Web) server is available to store the full text documents.

2. Organization on a local level

Management level
The decision to make working papers available on the Internet has to be made by at the management level of both library and institute or faculty. Like this, the new service is fits in the organizational structure and can become a part of the regular tasks of the staff, after a plan of action is drawn up.

Library
Required working hours for this new library service are estimated. Tasks and responsibilities are assigned to the staff. Handling procedures for electronic working papers are set up.

Institute/Faculty
Authors are notified to submit their paper in electronic form, in a specific format. Since assistance may be requested, secretaries and computer staff also have to be instructed. Regular communication between library and institute/faculty to monitor the start-up problems of the production is advisable.

3. Organization on a national level

The DEGREE project aims at the decentralization of tasks and responsibilities as much as possible. The idea is that the most concerned party will make the most effort to carry out those tasks in the best way. According to this principle, DEGREE participants are responsible for the production, WWW availability and disclosure of their own working papers.
Full text electronic working papers are located on a local WWW server and made available via the Internet.
Bibliographic data, according to the DEGREE template, are kept in a specific WWW directory, which is accessible to the Tilburg University Library. This library mirrors the directories of all the DEGREE partners and, as such, collects the bibliographic records in an archive.
The Tilburg University Library converts the bibliographic DEGREE records to the "DEGREE database", which is accessible at no charge via the DEGREE home page. The Tilburg University library maintains the DEGREE home page, as well as the DEGREE database.

4. Procedures for the production of working papers

It is realistic to assume that working papers are already produced electronically, albeit with different word processing systems.

Format
Original files, besides HTML documents, have to be converted into a page documentation language like PostScript or Acrobat PDF (Portable Document Format). In order to be prepared for this, an inventory of the different word processing systems which are used for the production of working papers in the institution/faculty has to be made. One must be aware that choosing a format entails providing adequate software and hardware, and relevant instructions to one's own (library) users.

Submission of papers
The author can submit his/her electronic working paper in various ways to the person responsible for storing it on the WWW server: e-mail, floppy, FTP (File Transport Protocol). When making a choice, it is important that the documents and related information (read me files) are transferred undamaged.
Automatic software to create PostScript or PDF file from original documents must be available.

Problems
Authors sometimes dislike the fact that they aren't allowed to deliver their document in the original format. However, it would be too cumbersome for the library to convert every original document into PostScript or PDF. As it is in the author's own interest to have his/her document distributed via the Internet, he/she may be expected to make this extra effort.

When authors use (SWP) Scientific WorkPlace to produce a paper, problems may occur during conversion to PostScript, due to the use of fonts which are not recognized by PostScript. No adequate solution for this problem has yet been found. Tilburg University has proposed a make-shift solution.
(see: http://cwis.kub.nl/~dbi/cwis/elib/greyfile/guide/tex_pdfu.htm#WWP).

5. Procedures for the bibliographical description of working papers

Similar to the production, DEGREE partners are responsible for the cataloguing and subject indexing of their own electronic working papers. These bibliographic records, collected in the DEGREE archive, are available to the world. The DEGREE format for bibliographic records contains the following fields (Tilburg University paper as an example):

Template-type: ReDIF-Paper 1.0
Author-Name: Aalbers,R
Author-Email: wlang@lsuvm.sncc.lsu.edu
Author-Workplace-Name: Tilburg University, Center for Economic Research
Tile: Extinction of the Human Race : Doom-Mongering or Reality ?

Abstract: This is the abstract of the document. Although you do not need to have an abstract, we strongly recommend a detailed abstract, because it increases the chance of users finding your document within a database. If you have a long abstract that has several paragraphs please split the paragraphs by html <p>sequence.
Classification-JEL: Q29
Keywords-Attent: Pollution; Sustainable Development;
Keywords: Life support system; Overendowment tax
Series: Discussion Paper
Creation-Date: 1994
Number: 102
File-URL: http://greywww.kub.nl:2080/greyfiles/center/1994/doc/102.ps
File-Format: application/postscript
File-Size: 962 Kb
File-URL:http://greywww.kub.nl:2080/greyfiles/center/1994/doc/102.pdf
File-Format: application/pdf
File-Size: 399 Kb
Handle: RePEc:dgr:kubcen:1994108

6. International cooperation

A model of cooperation for working papers in economics, named RePEc (Research Papers in Economics) has been developed on an international level. The initiator is Thomas Krichel, an economic scientist at Surrey University. In cooperation with Sweden, Spain, and the Netherlands, the Guildford Protocol has been established. This protocol describes the bibliographic data exchange between RePEc partners.

Like DEGREE, the RePEc cooperation model endorses a decentralized organization of tasks and responsibilities. Participants make their electronic publications available on the Internet and consequently release their bibliographic records. The latter are collected within the RePEc archive and retrievable through WoPEc, an international site for working papers on economics and business economics.

DEGREE participates in RePEc as follows:

- all DEGREE participants make their full text electronic documents available via the Internet;
- each DEGREE participant provides bibliographic data on their documents according to the DEGREE template;
- those bibliographic records are located in a specific directory on a WWW server;
- Tilburg University Library has permission to mirror this directory;
- Tilburg University Library weekly mirrors the partners' directories into the DEGREE archive on its WWW server;
- RePEc regularly mirrors this DEGREE archive.

7. Checklist for candidate DEGREE partners

a. Does your organization issue serial working papers in economics or business economics?
b. Is your organization willing to make these working papers available via the Internet?
c. Is there a WWW server available to store the full text working papers?
d. Has the format(s) of the working papers on the Internet been decided upon?
e. Is all the necessary software and hardware available?
f. Is there a plan of action for this new service and are procedures set up?
g. Has the DEGREE coordinator been notified about your intention to participate in DEGREE and what series are going to be included?
h. Do you agree to use the DEGREE template for bibliographic records of your working papers?
i. Has a WWW directory been created to store the bibliographic records?
j. Does the Tilburg University Library have access to this directory?

If all of the above questions can be answered positively, the process leading to the availability of your working papers on the Internet can start. Your working papers will be retrievable via the DEGREE home page (national) and the WoPEc home page (international).

Conclusion

DEGREE is a fine example of a national network to improve the flow of information captured in working papers. Organizing this on a national level is a logical step before entering an international network; commitment of participants is higher and communication is more personal and direct ("Like knows like!")
The development of similar bibliographic archives in other countries would improve the number of working paper series covered in the RePEc archive and, thus, optimize the dissemination of electronic working papers on economics and business economics.

List of mentioned Internet sites

DEGREE
http://cwis.kub.nl/~dbi/degree/

RePEc
http://cs6400.mcc.ac.uk/~adnetec/RePEc/RePEc.html

Guildford Protocol
http://cs6400.mcc.ac.uk/~adnetec/RePEc/GuilP.html

WoPEc
http://netec.mcc.ac.uk/~adnetec/WoPEc/WoPEc.html

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Information services and publications on science and technology in Poland

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Abstract

The Information Processing Centre (OPI) in Warsaw maintains information services on documents called „grey literature" as a continuation of the formar Centre for Scientific, Technical and Economical Information activities.

Information collections produced and conducted in OPI cover databases and publications on research projects and results, doctoral dissertations, catalogues on academic and RTD institutions, researchers and experts. It conducts referral system on library and information units and on databnases on RTD accessible in Poland.

From beginning of 1997 OPI is a coordination unit of the FEMIRC (Fellow Member to the Community Innovation Relay Centres) in Poland - the INCO-Copernicus project aimed to increasing RTD international co-operation with European Union and technology transfer. It seems to be a great advantage for redesigning information services on grey literature in area of research and innovation.

1. INFORMATION PROCESSING CENTRE

The Information Processing Centre (OPI) is the main organization in Poland responsible for managing information on grey literature in area of research and development. It is a unit aimed at gathering and supplying information on and for Polish science. The information collections produced and maintained in OPI cover data related to products of science, personnel and organizations. OPI is the database vendor and publishing house related to scientific institutions, research establishments and universities, scientists and researchers as well as the research works and enterprises. The essential task of the OPI is to provide services in the area of science and that of the applications of the scientific research results. OPI is affiliated to the State Committee for Scientific Research in Poland (KBN) and it supplies due services related to science policy for appropriate KBN departments and for other governmental and nongovernmental bodies as well.

At present, OPI operates nationwide databases in Polish and English version as SYNABA - research projects and results and DOKTORATY I HABILITACJE (Dissertations Database), databases on R & D institutions and researchers.

2. HISTORICAL BACKGROUND

The National System of Scientific, Technical and Economic Information in Poland (SINTO) used to be a part of the International System of Scientific, Technical and Economic Information of the former communist countries with the central unit in

- publication issued
- research workers holding the titles of professor and other academic degrees

Who is Who in Polish Science - SCIENTISTS AND RESEARCHERS database stores data on scientific workers. At present, the database contains information on 20 thousand professors and doctors habilitati and on 40 thousand doctors.

6. THE OTHER DATABASES AND SERVICES

Additionaly, there is conducted database on learned societies and foundations, database on science policy bodies, database on Polish scientists abroad. National Citation Report for Poland (from ISI - Philadelphia, USA) is the database on publications and citations of Polish authors.

The Referral Information System consistss of two databases: INFORMATION CENTRES and DATABASES ON R&D ACCESSIBLE IN POLAND.

„Computerized Databases on Science and Technology" („Komputerowe Bazy Danych o Nauce i Technice") directory published by Information Processing Centre includes 650 positions. These are descriptions of domestic and foreign databases - both bibliographic and factual, posessed and managed in over 300 scientific and information institutions in Poland. Some of them are accessible via computer network.

All above mentioned databases managed in Information Processing Centre are valuable sources of nation wide information on achievements and gaps in the Polish science - on institutional and personal ranking, in all domaines and separate disciplines, what is the main point of interest for government agencies for science policy such as the State Committee for Scientific Research. On the other hand, information services provided by OPI are highly evaluated by average users for their relatively satisfactory completness and currentness.

7. FEMIRC IN POLAND

A wide scope of databases and information services related to grey literature issues is conducted in framework of INCO-Copernicus programme project called „Creation and Development of the Fellow Member to Community Innovation Relay Centres in Poland - FEMIRC in Poland".

Main activities of IRC in Poland are information services and consultancy on Community RTD activities as disemination of information on European Communities programmes, accessing EU RTD databases via computer networks, advice and assistance for the submission of proposals to community RTD programmes. Technology transfer and innovation activities are promotion of innovation and technology transfer, assistance and advice, training on technology marketing and intellectual property rights, managing factual databases on technologies and institutions and experts involved in technology transfer process. Information services (state of art reports, analyses of trends etc., editorial services) for the State Committee for Scientific Research and for the Technology Agency produced by OPI will be provided in framework of FEMIRC project as well.

The Fellow Member to Community Innovation Relay Centres (FEMIRC) takes advantage of the mixture of tradition of engineering schools and craft in Poland and modern technology achievements of Polish scientists and engineers, who take a very active part in the transformation process. Intellectual potential of S&T sector in Poland is substantial, but industry does not make full use of it. On the other hand, as a result of structural transformations, private sector of industry is growing. Great number of new companies try to find their position on the inner market, which gradually becomes more open for competition. The only secure way for such companies to survive is getting maximal advantage of new technologies and innovations.

Effective infrastructure for distributing information and advice is very important for exploitation and development of industrial potential. Since future of Polish industry lies in the unification with the EU standards, in the establishment and further development of Europe-oriented economy on a high technological level, technology transfer and innovation services are indispensable element of the transformation process.

FEMIRCs are one of actions for implementation of the Information Society and as one of the seven awareness actions so they are involved deeply in building global information society, together with such initiatives as Global Inventory Project and many others awareness, economy oriented and actions of general interest. Grey Literature Network has very similar aims and its impact in increasing and enlarging international co-operation in the field of scietific information is substantial. Information Processing Centre is going to be an active partner in many Information Society initiatives, in framework of FEMIRC and in Grey Literature Network as well.

8. PARTNERS, CLIENTS AND USERS

A very important precondition of the FEMIRC is necessity to cover the whole territory of Poland. In order to satisfy it the consortium has been established. The FEMIRC in Poland consists of the following members: Information Processing Centre (OPI), Hi-Tech Co. Ltd., Warsaw University of Technology, Faculty of Production Engineering (IMIK), Poznań Science and Technology Park (PSTP) of Adam Mickiewicz University Foundation, Wrocław Centre for Technology Transfer (WCTT) of Technical University of Wrocław, Cracow University of Technology (CUT), „Incubator" Foundation and Gdańsk Centre of Technology Transfer (CTT). The Twin Partner of FEMIRC is BRIST in Paris, France.

The main and associated partners of the FEMIRC have direct contacts to numerous existing and newly developing SMEs companies as well as indirect ones through Chambers of Commerce and Industry, Industrial Associations, local and central governmental agencies. The FEMIRC plans its operational framework within the general structure of services that will facilitate the participation of Polish organisations in Community RTD programmes and contribute to the creation of an infrastructure for technology transfer in Poland and CCE.

The FEMIRC in Poland acts as an advisor and intermediary between the technology-oriented Polish companies and the possibility of technology and science transfer from and to the EU, initiator and moderator for activities aimed towards preparing and accompanying projects on the other.

Inormation Processing Centre is going in the framework of FEMIRC to co-operate with institutions, organizations and programmes focused on similar aims in producing and disseminating information services on grey literature as research reports, technology tenders etc.

1) EURO INFO Correspondence Centre, Poland, affiliated to Co-operation Found (Fundusz Współpracy) and developes consultancy and information tasks for Polish SME's. EURO INFO Centre and its focal points in Szczecin, Kielce, Kraków and Rzeszów affiliated to local Chambers of commerce and business associations will act as intermediary for FEMIRC activities. The agreement of co-operation between FEMIRC and EURO INFO in Poland will synergise effectiveness of innovation processes among SME's.

2) Technology Agency (Agencja Techniki i Technologii) - the new governmental agency targeted to innovation and technology transfer now is in developmental stage. FEMIRC will offer information and consultancy services covering Agency statutory tasks.

3) The State Committee for Scientific Research as governmental body responsible for R&D in Poland will be a very important user of value added information services according science and technology policy. FEMIRC is integrated into the technology policy of the Polish government supervised by the State Committee for Scientific Research. This authorities support the FEMIRC and expect it to play an important role in the development of Polish economy.

4) Nationwide and regional technological and commercial institutions and organizations as Polish Business and Innovation Centres Association (Stowarzyszenie Organizatorów Ośrodków Innowacji i Przedsiębiorczości w Polsce)

5) Nationwide and regional information institutions and organizations taking part in „Information Society" Programme.

6) Appropriate EU and CEEC institutions, organizations and programmes.

All mentioned above and many other organizations are producers and users of various leaflets, bulletins, www home pages, textual and structured databases and information services concerning research and innovation activities, so they are designers, multipliers and users of grey literature services on research reports, technology tenders, patents, certificates, trade and marketing brochures and leaflets.

OPI will extend FEMIRC activities due to other actions of Implementation of Information Society. It will be an oganiser of nationwide seminar on FEMIRC activities and participation in EU R&D programmes. OPI creates and conducts FEMIRC bulletin in printed and electronic form, disseminates information on CORDIS databases, conducts databases on R&D institutions and on R&D projects and completed reports. It is supported by the Institute of Fundamental Technological Research in providing information via Internet, conducting information services on WWW server and other information and training activities.

OPI as the co-ordination unit is furthermore responsible for the management concerning the FEMIRC network co-operation, collecting financial and technical reports from the FEMIRC partners and preparing technical (deliverables) and financial reports to the Commission, representing the FEMIRC in contacts with the Commission, the twin IRC, FEMIRC network, the Polish Government, local authorities and public agencies, dissemination of information and special demands from the Commission to the FEMIRC partners, monitoring IRC activities in regional units, according to workplans and timetables accepted by EC, reacting for delays and troubles, creating FEMIRC image

through publishing common FEMIRC bulletin and newsletter (in printed and electronic form), and articles in external publications and other media in Poland and abroad, organising and conducting meetings with the FEMIRC consortium partners. It integrates regional units for complementary and synergetic activities within existing national structures and circumstances, providing organisational help for country-wide events.

Participation in EU RTD programmes is an advantage for comparisons between Polish and other CEEC countries grey literature related activities with European Union countries achievements. The most obvious is coparison between SYNABA and the Polish Research Directory publications and dababases from one side and between CORDIS services from the other side. Generally, information content is similar, but structure and software is different.

The Fifth Framework Prpgramme is an advantage to increase impact of information centres in Central and East Europe Countries (CEEC) in international - European and global co-operation, in building together Global Information Society. Information Processing Centre in Poland is going to take part in this challenge.

Russian Grey Literature Collection and Dissemination Centre: Status, Profile of Activities, Development

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Abstract

30 years ago within the STI infrastructure of the USSR a special centre was created by the government decision with the aim of covering all the Soviet grey literature documents in a centralized way. The Centre, now named the Scientific and Technical Information Centre of Russia (the Russian acronym - VNTIC) is responsible for the maintenance of the complete repository for scientific research and development reports and dissertations (candidate and doctoral). VNTIC carries out the dual function of both archiving and disseminating grey literature. For the years of VNTIC existence there are about 7 million documents totally accumulated in the fund reflecting the state-of-the-art and all the main results of R&D activities undertaken in the USSR and now in Russia and covering all the branches of science and technology i.e. all the subject headings of knowledge classification. A general outline of VNTIC activities is given, a brief description of the documents processing technology is presented and some views of the future development are stated.

1. Introduction

In the late '70s - early '80s there was established a well developed infrastructure for the sphere of scientific and technical information (STI) in the Soviet Union. The framework of this infrastructure was based on the so called State System for STI (abbreviated in Russian as GSNTI). Even then when the global role of information as the most important strategic resource was not so evident like now, on the verge of the XXI century, the development of STI agencies and services was considered among the first state-level priorities.

The State System for STI integrated an advanced three-level hierarchy of information centres including the all-Union level institutions, branch-specific and regional centres on the second-level and the third-level STI departments of different organizations and enterprises. The scope of branch-specific and regional centres activities is evident from their names, e.g. Informelectro, Informenergo and other centres belonging to the corresponding ministries and state committees; Volgograd STI Centre, Khabarovsk STI Centre and other, totally 69 centres covering the corresponding geographical regions.

The area of the all-Union status centres activities was determined by the types of STI documents supposed to be processed at the centre, e.g. The All-Union (now - All Russian) Institute for Scientific and Technical Information (VINITI) - published STI documents (papers from scientific journals, monographs etc.); Scientific and Industrial Association

"Poisk" - patents and patent applications; The State Public Scientific and Technical Library (GPNTB) - books, periodical and serial publications, etc.

Russia of the '90s has inherited from the former Soviet Union all the three levels of STI institutions: first level - nation-wide (formerly of all-union, now - of all-Russian status) information centres - original database generators each covering different kinds of documents (articles, patents, books, reports etc.); second level - branch-specific and regional information centres; third level - information brokers and departments of different organizations and companies.

30 years ago within the STI infrastructure of the USSR a special centre of the first level was created by the government decision with the aim of covering all the Soviet grey literature documents in a centralized way. The Centre, now named the Scientific and Technical Information Centre of Russia (the Russian acronym - VNTIC) is one of the world's largest information bodies and maintains a vast collection of Russian grey literature that reflects the state-of-the-art in Russian science and technology most completely and covers key data unavailable outside the former Soviet Union (FSU). The nearest Western analogue to VNTIC is the National Technical Information Service (NTIS) of the USA.

In the contribution a general outline of VNTIC activities is given, a brief description of the documents processing technology is presented and some views of the future development are stated.

2. VNTIC Status and Activities Profile

VNTIC is a nation-wide (i.e. federal) information agency responsible for the maintenance of the complete all-Russia (before 1991 - all-Union) fund for scientific R&D reports (projects) and dissertations (candidate and doctoral). The presentation of the documents to the VNTIC fund is obligatory for all the organizations engaged in state-budgeted scientific research and development and is carried out in accordance with the Federal Law of the Russian Federation "On the Obligatory Copy of Documents" adopted by Russian Parliament and published on January 17, 1995. The fund is supported in two forms: human-readable full-text primary documents (reports and dissertations), stored on microfiches; machine-readable (secondary) documents, containing bibliographic descriptions and abstracts of the primary documents and stored in a database structure to provide information search and retrieval.

The revised version of VNTIC Statute registered in 1992 claims that VNTIC is a unitary state enterprise with the right to carry out commercial activities. It means that VNTIC can only partly enjoy the privilege of state budgeting and is supposed to cover the rest part if its expenditure with the income received from commercial activities. This version of Statute most corresponds to the uncertain economic situation in Russia when the mechanisms of state budgeting fail to work with typical delayed or underpayments and the right to independent business operations including international ones is very important. For VNTIC commercial or business operations mean, first of all, selling different kinds of information products and services and leasing some VNTIC building and site area.

In its main sphere of activities directed to support the national repository for grey literature VNTIC is supervised and should be financed by the Ministry of Science and Technology of Russia. Clause 10.2 of the Law "On the Obligatory Copy of Documents" reads:

> "The producers of documents should deliver to the Scientific and Technical Information Center of Russia (VNTIC) of Ministry of Science and Technology of the Russian Federation within 30 days an obligatory free copy of:

VNTIC pioneered many technological and equipment innovations in domestic information industry: high-production microfilming equipment was started to run at VNTIC in the late '60s; computer database of large scale on magnetic discs was created for VNTIC user access in 1971; wide-area computer network with the central node and host-computer in VNTIC was put into operation in early '80s covering all the territory of the Soviet Union and providing users with online teleaccess to VNTIC databases.

The block-diagram of VNTIC documents processing technology is shown in fig. 1. There are two general groups of processes in the industrial information technology. The first group of full-text documents fund and database support includes the following processes:

- document sate registration and inventory;
- microfilming;
- fund (repository) support;
- content analysis;
- computer inputting;
- database support.

The second group of processes for providing user services includes:

- publishing and circulation printing of VNTIC editions;
- copying of full-text documents by orders (document delivery);
- database search and retrieval (requests processing);
- reading room services.

3.1. Registration and inventory

With this set of input operations the arriving document flow processing begins. For each newly-started R&D work (project) initiated in Russia and state-budgeted there is the so called registration card with the main data on the project filled in by the executive organization and supplied to VNTIC. Each card (project) is assigned a unique standard state registration number and the registered card is inputted into the database.

The full-text R&D report (project) and dissertation manuscripts (primary documents) arrive in VNTIC along with their accompanying information cards - secondary documents containing bibliographic descriptions and abstracts of the primary documents. Both primary and secondary documents are assigned unique inventory numbers by which the correspondence is established between the primary and secondary documents of the same name in the repository and in the abstracted database.

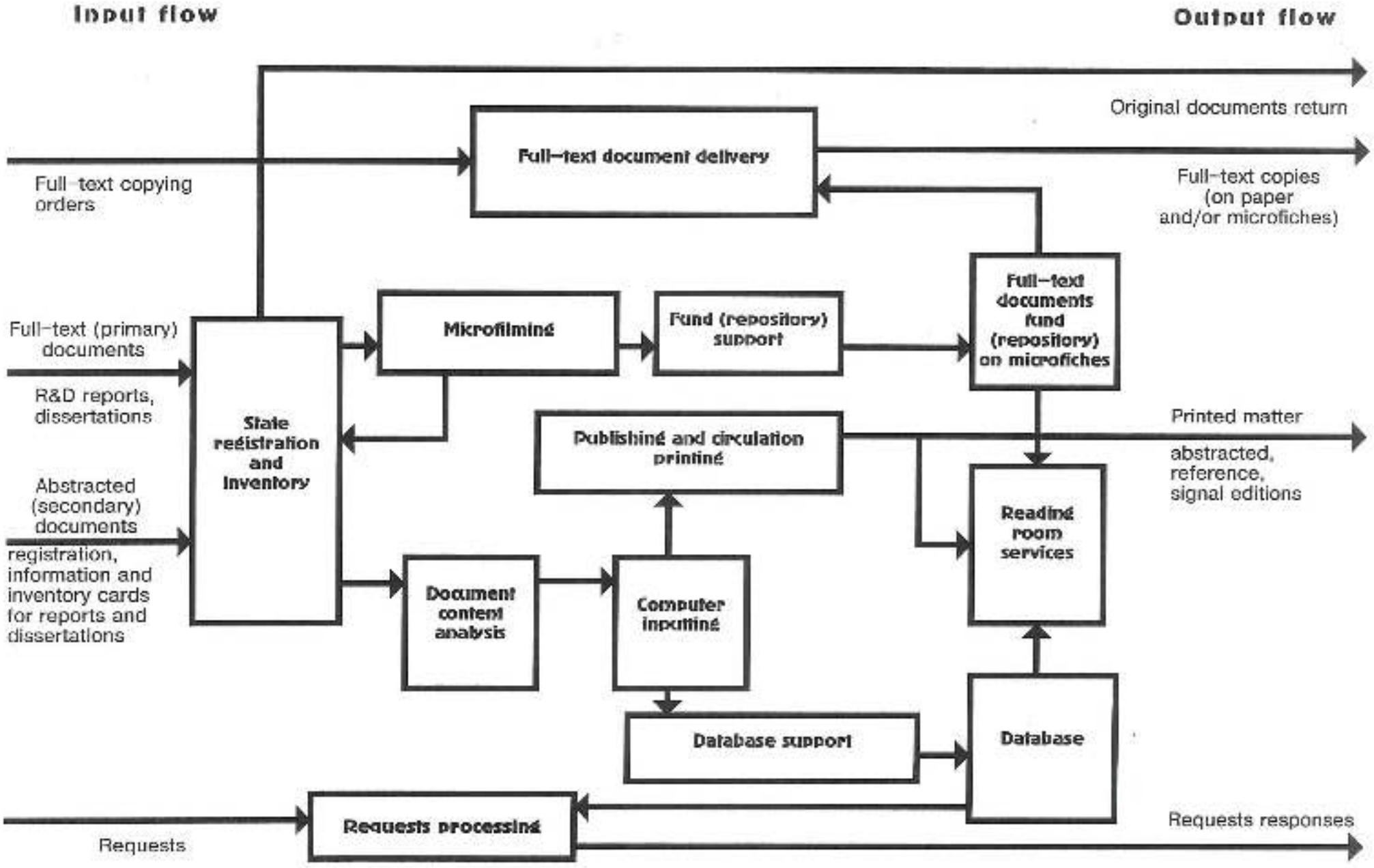
The stage of registration and inventory also includes the operations of organizations - the document suppliers database support., assiguing the standard code numbers to the organizations-suppliers and input control of the documents for the completeness and print quality.

3.2. Microfilming

It is suggested that at least for the several nearest years the microfiche should be retained as primary document archiving medium. For the time being there are some obstacles to move completely to electronic image processing and storage for the purposes of archiving. The obstacles are of legal, technical and economic origin. There is still no adequate legislation supporting validity of electronic signatures and stamps. The standard optical microfilming resolution (80 lines/mm) is unattainable in electronic scanning within the reasonable economic limits.

The full-text primary documents are microfilmed using high performance optical cameras, high-speed developing machine and halogen-silver film. The film ensures the long-term storage that is necessary for the archiving purposes. Each document corresponds to a separate 98-frame microfiche or a set of microfiches in case of a longer document. The daily portions of microfiches are handed over to the repository that is the basis of VNTIC archiving fund.

Fig. 1. VNTIC DOCUMENTS PROCESSING TECHNOLOGY



vn-tpeng.doc

3.3. Fund support

The VNTIC fund repository uses mechanized rack cabinets to store numerically ordered microfiches. Each cabinet contains 80 thousand fiches. A set of microfiches corresponding to one primary document is stored in a separate envelope on which the inventory number is shown.

At present there are 1,1 million units of primary documents in VNTIC repository including:

- nearly 700 thousand R&D reports (1984-1997);
- more than 350 thousand candidate and doctoral dissertations (1980-1997);
- 13 thousand descriptions for computer algorithms and programs (1980-1997);
- 76 thousand translations (into Russian) of foreign scientific and technical literature and documentation (1989-1997).

Also there are about 2 million units of secondary documents paper originals (1985-1997) in the repository including:

- more than 700 thousand registration cards;
- nearly 900 thousand information cards for reports;
- more than 300 thousand inventory cards for dissertations;
- 9,5 thousand information cards for computer algorithms and programs.

There are four sections in the subject structure of the VNTIC fund: social sciences, natural and exact sciences, technical and applied sciences, interdisciplinary problems and other sciences. The contents of the sections are described in the State Subject Headings Classifier for STI that is an official publication.

3.4. Content analysis

All the secondary documents of the VNTIC input flow, that is registration, inventory and information cards are subjected to several operations of intellectual processing by human specialists. As a result of content analysis each card (or, to be more exact, each document it represents) is assigned a corresponding subject heading (or several subject headings in case of multidisciplinary work) in accordance with the mentioned State Subject Headings Classifier for STI. There are three levels of subject classes used in Russia, the first being the most general and the third - the most detailed level of science and knowledge classification.

The second content analysis procedure aims at indexing the documents that is assigning each document (mainly on the basis of its abstract) a list of key-words, typically, not more than 7-10 key-words, reflecting the abstracts content. Most often key-words are scientific or technical terms which appear or may not appear in the text of the abstract. Though the database management system used in VNTIC does the automated indexing including all the words from the abstract (minus stop-words) in the list of key-words it is believed that human indexing helps to improve the searching qualities of the document.

3.5. Computer inputting

After being subjected to registration, inventory, coding, subject classification, indexing and editing the secondary documents are inputted into computer. The content of the cards is keyed-in by human operators using personal computers. In the course of inputting some formal software control is carried out. Also, human proof-reading helps to minimize the mistakes after inputting the proofs. The inputted documents in machine-readable form are used to support the so called current document arrivals file. The file is used as a regular source of the database input and in the preparation of the VNTIC traditional publications.

The keying-in is still preferred to electronic scanning on the industrial scale because of the low print and paper quality of the arriving documents.

3.6. Database support

The database of VNTIC is a combination of the following technologically coordinated databases (DB):

- information cards for R&D reports DB: 1 million documents since 1985, 30 data fields, size 1 Gbyte;
- inventory cards for dissertations DB: more than 300 thousand documents since 1985, 30 data fields, size 700 Mbyte;
- registration cards DB: more than 60 thousand documents since 1992, 30 data fields, size 70 Mbyte;
- technological DB for organizations: data on more than 30 thousand organizations - the document suppliers and request-sources to VNTIC, 21 data fields, size 6 Mbyte;
- address-reference DB for organizations of scientific R&D sphere of Russia: more than 3 thousand organizations, 9 data fields, size 3,5 Mbyte;
- DB "State Subject Headings Classifier for STI": 8 thousand codes and names of 1st, 2nd and 3d level headings (in Russian and in English), 1996 version, 2 data fields, size 1,3 Mbyte;
- DB "Doctorate Holders in Russia": personalia on more than 14 thousand scientists since 1992, 10 data fields, size 10 Mbyte;
- English language DB (a fragment of the first two DBs): 4,5 thousand records of 1997, 20 data fields, size 6 Mbyte;
- publishing DB: nearly 28 thousand records for 1997, 20 data fields, size 42 Mbyte;
- problem-oriented DB: nearly 25 thousand records, 55 data fields, size 42 Mbyte.

The database management system "Irbis" developed in Russia is used to support the information, inventory and registration cards DB, DB for organizations and Subject Headings Classifier. "Irbis" works in operating environment Windows NT and MS/DOS.

Most databases are updated at the rate of the document arrival, some -bimonthly. All the databases (except the technological one) are used for user services at requests and are commercial products for sale inside and outside Russia. Internet users can get access to the databases via e-mail in the delayed requests mode when requests are sent via e-mail, the search is being done by VNTIC staff members and the search results are sent back to the users.

3.7. Publishing and printing

In preparation of VNTIC publications a desk-top publishing technology is used. The editing and proof-reading operations including spelling and style corrections are performed by human professionals.

A short description of VNTIC publications was given in section 2. Each of the 28 subject series of the Registration Bulletin and the Collection of Abstracts (Abstracts Journal) has its subject profile determined by the list of the subject headings codes. In the process of the Bulletin and the Collection preparation all the documents belonging to a particular series in accordance with the subject headings list are selected from the current document arrivals file. Each publication has a subject index with the alphabetically ordered key-words from the documents.

The necessary number of copies is printed using high-performance copying machines and is sent to the subscribers. Ten of the 28 series of the Abstracts Journal are translated and published in the English language.

The VNTIC reference editions are published on the basis of the databases for organizations and "Doctorate Holders in Russia".

3.8. Document delivery

Copying full-text (primary) documents is performed to users' orders which are placed by ordinary post, telephone calls, telefax messages, electronic mail or at personal applications. Users are supposed to show inventory numbers of the documents to be copied and the type of the carrier (paper, microfiche, electronic representation) in the order form.

The coming orders are sorted by the types of documents and inventory numbers. The requisite master-fiches are taken out from the repository and passed to the copying shop. The microfiches are scanned and then printed out on paper by a laser printer or written on diskettes in image format or, at request, after character recognition procedures. Master fiches are copied on less expensive diazo-fiches.

The copied documents are delivered by post, electronic mail (in case of selective copying) or handed out personally.

3.9. Search and retrieval

As in the previous case the requests for database search and retrieval are directed to VNTIC by ordinary post, telephone, fax, electronic mail or applied personally. As a rule the requests are presented in natural language and may include the following kinds of queries:

- retrospective subject search by subject headings codes or by key-words (the so called subject queries);
- search by separate document's requisites or their combination, e.g. year, source organization, author etc. (factological queries);
- combined subject and requisites search (mixed subject - factological queries).

The searches are carried out using retrospective abstracted databases on scientific reports information cards and inventory cards of dissertations. The database management system "Irbis" used in VNTIC supports efficient search procedures by means of flexible user interface and inverted files for key-words, subject headings and other search requisites. Users can conduct online search themselves or with the aid of qualified specialists from VNTIC.

Printed out search results - the sets of found relevant documents are handed out to the users or sent to them over ordinary or electronic mail.

3.10. Reading room services

There is a reading room in VNTIC open to public. The visitors of the reading room can get there any document they need from the VNTIC fund on microfiches. The room is equipped with microfiche reading devices. Also all the VNTIC publications are available to readers in the room.

The retrospective databases serve as electronic catalogue to the VNTIC fund. On conducting the search the visitor can obtain the inventory numbers of relevant full-text documents. The visitor can order selected or full-text copies of the documents.

There are about 4 thousand readers serviced in the reading room every year.

4. Future Development

No matter how hard the current situation in Russian science and STI sphere is VNTIC not only continues to maintain the federal fund on Russian grey literature but also considers some definite ways of future development. There are at least two aspects of planning the future that should be mentioned here. The first one concerns the profile of VNTIC activities and the second one is of technical nature.

As it has been stated the main function of VNTIC is to collect traditional forms of unpublished documents. The idea of extending the spectre of unpublished documents to be collected by VNTIC originates from two considerations. First, there is a qualified staff of

information specialists, a well-developed document processing technology, some office space still vacant in the VNTIC building, that is there are some very important resources that have not yet been properly realized. Second, the traditional grey literature documents of VNTIC profile - reports and dissertations - cover rather a narrow category of professional authors and demand large sums of money to be prepared. There is still a great part of intellectually creative community whose ideas are lost to society since never become public or published. The loss is very considerable since the great educational and creative potential of intellectually active people in Russia is well known.

That is why it is suggested to set up a national bank of ideas on the basis of VNTIC with the main task to collect a public fund of untraditional intellectual products such as different projects, technologies, conceptions, processes, methods, devices, structures, educational and training materials, etc. which on this or that reason didn't find their way to public. To introduce them to national fund in the form of applications for intellectual product registration would mean to give the products some official and juridical status that could be an argument in priority claims. Some parallel can be made here to well-known Japanese practice of registering and publishing the unexamined applications for patents.

As far as the technical development is concerned there are several important reasons behind the VNTIC technological re-equipment project initiative.

The existing and operating VNTIC microfilming and photocopying equipment is obsolete and worn-out. It needs urgent renovation. The present computer and software configuration needs not only modernization but a complete re-engineering because it was set up as an ad hoc solution in the process of forced and urgent downsizing with severe financial shortages when VNTIC mainframe computers were shut down on economic reasons. The configuration is now based on PC computers (mainly 386 and 486 with two Pentiums); its throughput and reliability don't correspond to the requirements of the large-scale professional information centre of federal importance like VNTIC. The problem is therefore to move from just downsizing to rightsizing.

It is also supposed that VNTIC re-engineered and re-equipped information system will satisfy both the Federal Law and international standards. It will become possible to "pack" information from VNTIC repository so that it can be accepted by Western users.

The information processing system configuration of VNTIC is rather complicated as involving technologies of different nature including manual handling of documents, semantic processing of their content by human experts (editing, indexing etc.), microfilming, repository maintenance, computer processing, database support, periodicals publishing.

The current version of the system was designed and started to run nearly twenty years ago. There existed two different and completely separate information processing technologies at that time: microfilming of full-text primary documents by means of optical photographic cameras for the purposes of archiving and hard-copying; computer inputting and processing of abstracted (secondary) documents for database support, information search, retrieval and publishing.

Recently we have all been the witnesses of a tremendous progress in information and computer technologies. The success of electronic imaging and image processing using scanning equipment, optical memory systems facilitates the integration of full-text and abstracted documents processing and presentation in a more or less uniform electronic medium.

This trend of electronic full-text imaging for storage and search along with another most important information technology tendency to worldwide computer networking are reflected in the conception of VNTIC re-engineering and re-equipment project.

Now the project is in its conceptual, planning and hardware/software architecture design stage. The general functional and technical requirements and specifications have been prepared for the project. There are some promising perspectives of attracting both government and private structures for the necessary financial support of the project.

The implementation of high information technology would allow VNTIC to follow up the growing input flow of extended nomenclature documents.

5. Concluding Remarks

In the early '90s there were some destructive tendencies of doing away with large nation-wide information centres in Russia. Everything centralized or state-scaled was automatically attached a negative sign as having Soviet connotation. Life proved this approach to be wrong. Large information centres of federal importance still exist and should have a good promise to develop. The experience of VNTIC is a positive example in favour of this attitude.

During 30 years of its existence VNTIC:

- collected and processed more that 7 million primary and secondary documents;
- distributed nearly 20 million copies of its serial, analytical and reference publications among about 10 thousand collective subscribers;
- disseminated more than 5,3 million copies of full-text scientific reports and dissertations;
- distributed machine-readable databases containing totally about 20 million records;
- carried out nearly 500 thousand subject, factological and reference requests.

The Decision of the government of the Russian Federation № 950 of July 24, 1997 "The Regulations on the State System for STI of the Russian Federation" claims the necessity to develop the system for STI on the state level and confirms the leading role of VNTIC in the area of Russian unpublished STI documents.

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The administration of ISO10444: International Standard Report Number. Activities and cooperations of the International Registration Authority

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Abstract:

Abstract: Established end of 1994, the International Registration Authority is implementing the ISRN (International Standard Technical Report Number) system. In addition to the well-adopted and well-running numbering systems ISSN and ISBN the ISRN registration has the goal to make grey literature, especially scientific reports, better accessible by an improved identification system. FIZ Karlsruhe in Germany took over the task of the International Agency and started to build a network of national agencies, which are national libraries, central scientific libraries and national information services with grey literature holdings.The specifications in the ISO 10444 standard have to be adopted and ruled in detail by these national agencies in cooperation with the producers of report literature. The specifications also have to be adopted by database producers citing grey literature.The problems and solutions of national agencies are described and an outlook for the acceptance and implementation of the new numbering system is given.

Contents:

1. Introduction to the ISRN System
2. Activities of the International Registration Authority
3. Cooperations between the Agencies and adoption of the standard
4. Implementing problems
5. Outlook

1. Introduction to the ISRN System

Research reports/technical reports are an important type of literature in the scientific community and the prototype of grey literature. According to the well adopted international numbering systems of publications - I am only mentioning now the ISSN numbering system for journals - a system for technical reports was founded by ISO, too.

- The standard
  End of 1994, the standard ISO 10444: 1994 First edition 1994-12-15 with the title "Information and Documentation - International Standard Technical Report Number (ISRN)" was published. In parallel - as a condition for the publication of the standard - an authority agency was appointed and named in the standard.

- The structure of the report code and the report number

In international databases, which announce reports and offered on-line searching and published printed indices, a structure of a report number became usual since the seventies. This structure was also the basis of the ISRN system.
Extracted from the standard the structure is demonstrated:
The first part of the number is the report code. It designates the organization issuing the technical report. Normally these report number stems represent the acronym or the abbreviation of the producer. We easily will find prominent examples:
MIT/LCS/TR PSI-RR INFN/AE
Short names of serials within huge organizations are also included in the report code. The first character of the report code shall be an upper case alphabetic character, the remaining may be alphabetic or numeric characters.
The second part after an unusual but unique separator (two hyphens) is the year of publication, then the sequentional (the real number) follows. The second group separator (another double hyphen) separates the number from the ISO country code. Then a possibility of additional individual numbering is offered.
The numbering reflects existing report numbers. The standard highly recommends the use of all the mentioned parts and the international Registration Authority will urge the national centres in adopting strictly these rules.

My paper published in the report series of my institution would thus have the following ISRN
ISRN: FIZKA/GL–97/13--DE

2. Activities of the International Registration Authority

In December 1994 a Registration Authority (International ISRN Agency) was designated. FIZ Karlsruhe, the STN European Service Center, producing and providing scientific and technical information services in printed and electronic form, took over the task. FIZ Karlsruhe has longterm experience in handling grey literature, and is active in standardization and international cooperations for producing databases and offering together information services.

The tasks of the International Registration Authority include:

- to implement, coordinate and administer the ISRN system in accordance with ISO 10444
- to appoint the national (or regional) ISRN agencies
- to collect data on assigned report codes and to maintain this report code data in the form of an international register

The most important task at this time is to appoint national or regional agencies and to build a network for the registration.

The tasks of the National or Regional ISRN Agencies include:

- they form the links between organizations issuing technical reports in their country or region and the International ISRN Agency
- they are responsible for registering existing and new report codes
- they have to maintain a national register of the report codes assigned.

Different types of organizations can act as National Agencies. In order to have synergetic effects between their prime tasks and their registration activities, organizations involved in

collecting and indexing grey literature in their country could act in the most effective (and cost-effective) way as National Agencies.

3. Cooperations between the Agencies and adoption of the standard

For Germany, France and Italy National Centers have been designated by national standardization authorities. Several national libraries and database producers showed interest in becoming a national agency. Guidelines and rules have been sent to these centers. A software, with which the national registers could be administered and data be exchanged with the international agency is in preparation. Some publishers of technical reports already print the ISRN - structure on their reports. Database producers do not use the ISRN standard for the report-number fields yet. The ISRN could be a basis for Unique Record Locators, Numbers for Digital Object Identifiers etc.

With the following institutions we succeeded in the first step of building a network

Country	Institutions	Level of working
Algeria	Centre de Recherche sur l'Information Scientific et Technique, Hydra Alger	received guidelines
Australia	National Library of Australia, Canberra	received guidelines, and will become the ISRN agency
Finland	Helsinki University Library	received guidelines, analyse possibility to participate
France	INIST, Institut de l'Information Scientifique et Technique, Nancy	are named by AFNOR, will start work when software is available
Germany	Technische Informationsbibliothek, Hannover	are named, will start work when software is available
Italy	CNR, Biblioteca Centrale	Informed us, that they are designated by the national standardization organization and received guidelines

Namibia	National Library of Namibia, Windhoek	received guidelines
Russia	Scientific and Technical Information Centre of Russia (VNTIC)	received guidelines
Spain	Centro de Infomacion y Documentacion Cientifica, Madrid	received guidelines
United Kingdom	BLDSC, Boston Spa	will use their own databases, which have to be integrated in the international register
United States	NTIS, Springfield	the national maintenance agency for the US STRN received the guidelines, up to now no answer

4. Implementing problems

The adoption of the ISRN is not at all at a stage where we wished it to be 3 years after my organization taking over the task. We only have 3 designated national centers, but they have not started work yet for variant reasons. The International ISRN Agency established detailed guidelines, but some national candidate centers need a more practical solution for their work (i.e. adopting existing databases). Other national centers feel the rules are too flexibel and see the danger of a register not being on a high level of standardization.
A software, with which the national registers could be administered and sent to the international agency is in preparation, but financial restriction delayed the release, too.

The literature type "Report" is not embedded in the publishing business. There is no economic need or economic interest for organizations to become a National Agency. The registration work is costly and time consuming, especially the contacts with producers of reports is time consuming. Therefore only a self-interest in grey literature will push the work for the registration procedure. The organization will then realize that contacts to producers might improve their coverage of grey literature and will also an effect a recognition of their organizations in the scientific community.
Concerning the other numbering systems, the ISBN and ISSN are now used for the PII and DOI-Systems for the identification and follow-up of the use of the electronic versions. Reports are mostly for free, and it is the aim for a report to be widely spread within the scientific community. But the problem of identifying them will always exist. So we continue making every effort to implement the system.
This is to encourage you and invite you as participants of this conference with an interest in grey literature to support the establishment of national centers in your country in order that a comprehensive international register will soon become reality.

5. Outlook

When FIZ Karlsruhe published worldwide a press release announcing its new function and promoting the ISRN system, a lot of interest was shown. Marketing people, press staff, people responsible for the corporate design of industry and research centres showed interest in having the report number which represent their organization in registers and published indices in an orderly way.

The International ISRN Agency therefore

- will contact more organizations and convince them to participate in the network of national ISRN centres
- will offer a software product for the national centres
- will update and complete the guidelines and rules
- will prepare database producers for the insertion of ISRN structure
- will promote the use of the ISRN structure for use in the electronic environment for URLs etc.

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UK THESES ONLINE ?

University theses contain the most up-to-date research in most subject areas and yet they are some of the most difficult sources of information to identify, locate and obtain. Whereas research that is published in conventional books by conventional publishers is made known through publishers' catalogues and mail-shots, there is no marketing incentive to make people aware of the research that is available in university theses. 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. 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. 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. Maybe some theses do not deserve to be consulted again, but if a university has considered the thesis to be of sufficient quality to be worth the award of a higher degree to the author, surely it is worth making more of an effort than is made at present, at least in the UK, to make the results of the research available to a wider community. In fact, by burying such

research in volumes on library shelves, universities may be missing out on opportunities to publicise the quality of research undertaken in their academic departments. The case of electronic submission and availability brings problems but it also brings substantial benefits.

The aim of the University Theses Online Group in the UK is to make information about doctoral theses available quickly and easily and to provide fast access to the full-text of theses when that full-text is required. The key to the achievement of this objective lies in the submission of theses in electronic format. The electronic format will enable the faster recording of the title and abstract of theses in indexing tools and the easier transmission of the full-text of theses to anybody who requires the full-text. It will also enable more sophisticated subject indexing to the content of theses than is presently available for UK theses. Submitting the text of theses electronically will also save universities and individual research students money by avoiding the need to create and store paper volumes. The University Theses Online Group consists of representatives from twelve UK universities and was formed in the wake of the Follett Report on university libraries, which encouraged libraries to look at new forms of information provision. The Group was formed initially by librarians, but now has representatives from the university computing and administration communities. The electronic submission and availability of theses is an issue which touches many aspects of university life and if it is to come about has to receive the support of the university as a whole.

The Group realised from the beginning that there would be no chance of realising the Group's objectives without the support of the academic leadership in each university. The doctoral thesis is at the heart of academic value, a kind of touchstone of academic prestige, and it was realised that any proposal to change the submission process would be received with great caution by the academic community, and rightly so. What the Group is trying to do is to convince university authorities that there is much to gained from a change to electronic submission which is organised professionally and which need be no threat to academic values. There is some concern, for example, about a greater risk of plagiarism through the easy availability of the electronic format. Whether those concerns are justified or not, the University Theses Online Group is taking them seriously and in any proposal to our respective universities we shall face up to those concerns and propose measures which we believe will answer the concerns. What we are proposing is a culture change for UK universities in accepting electronic rather than paper submission and this change will take several years to achieve. The question-mark in the title of this paper is an indication to you that we still have a long way to go before we achieve our objective.

In order to achieve the objective of electronic submission and availability of doctoral theses in the UK we have been following a strategy which has a number of phases. It is a strategy which has evolved as we have come to realise more clearly the complexity of the task we have set ourselves. For example, when the Group was first formed in 1994, our thought was that we would create the electronic format by scanning the paper text of theses after the examination process had been completed. We soon

realised that this would not be as easy as it sounds and would also be quite an expensive process on a large-scale. Our current strategy is therefore to gather information on the use of theses, to persuade universities of the advantages of electronic submission of doctoral theses, to undertake pilot projects, and to work with potential partners in the information world.

The first action we decided upon was a survey of authors and supervisors of theses in eight universities, around 4000 individuals in all. Funding for this survey was provided by the Joint Information Services Committee of the UK Higher Education Funding Councils and by the British Library Research and Innovation Centre. The survey was conducted by a team from the University of Edinburgh in the autumn of 1996 and a report on the survey can be found on the UTOG Web page (URL http://www.cranfield.ac.uk/library/utog/) or in an article written by Joanne Lomax in the journal Program, volume 31 number 4.. The survey was very helpful to the Group in providing information about the way in which theses are identified, obtained and used. Most of the respondents replied positively to questions about electronic submission and availability, so the Group felt encouraged to seek further funding from the British Library Research and Innovation Centre to hold a seminar aimed at influential members of the UK higher education community. Over 100 people attended the seminar in June 1997 and again much was learned about attitudes towards the electronic format for theses. There are different attitudes, for example, across the subject disciplines, scientists tending to regard the thesis as merely one stage in the development of a research topic, whereas a humanities thesis tends to be a complete work in itself. The seminar has helped to raise the

profile of the Group and prepared the ground for pilot projects in several universities. The intention is that over the next six to nine months a number of research students in various universities will be contacted and invited to submit their doctoral theses electronically as well as on paper. This will give members of the Group experience in the problems of electronic submission while not disturbing the current examination process. Much will depend of course on the cooperation of individual students and supervisors but we hope that there are sufficient people who see the potential benefits of electronic submission for us to have a meaningful trial.

One key factor we have to explore is the technical format in which the text of theses would be submitted. The Group does not have any pre-conceived ideas about the best format for this purpose, but whichever format is adopted must be readily-available to research students and compatible with international standards. The greatest experience of electronic submission of theses of which we are aware is that being gained by the Networked Digital Library of Theses and Dissertations Project led by Ed Fox of Virginia Tech. (URL http://www.theses.org). This Project is encouraging submission in both PDF and SGML formats and we shall have to see whether this is feasible in a UK context. There may be great advantage to be gained by UK universities adopting the procedures already set up by the US group and we are exploring how and to what extent we can cooperate. We are also looking at other potential partnerships at various stages in the information chain. The indexing and abstracting of theses in electronic format will be critical if the content of theses is to be used effectively, and we are hoping to have discussions with the publishers of the ASLIB Index to Theses, who already have an

electronic version of their publication available, to see whether their publication is the right vehicle for the dissemination of indexing and abstracting information for online versions of theses. A further partnership could be with the British Library Document Supply Centre on the electronic delivery of the electronic full-text. BLDSC already offer a conventional delivery service for many UK theses and have been represented on UTOG since its foundation, so collaboration with BLDSC on electronic delivery would make a lot of sense. What we must do, in exploring these various partnerships, is ensure that our universities support us and that they are satisfied that any arrangements entered into, particularly commercial arrangements, are in the interests of universities. If there is any profit to be gained from the electronic dissemination of theses, the universities must share in that profit.

Let me close by coming back to the question-mark in the title of this presentation. The advantages to universities, to research students and to users of doctoral theses from the electronic format are so strong that the members of UTOG have no doubt that within a few years UK theses will be available electronically. The uncertain factors are how long it will take for electronic submission to become the norm and what form electronic availability will take. There are times when the members of UTOG feel that we are lone voices in the wilderness of lack of interest within universities, but then we are encouraged by the success of actions we have taken, like the survey or the seminar. The University Theses Online Group has no official standing and has no funds other than we are able to seek for specific events, but as we are the only UK group active in this area we have to continue with our strategy and trust that in due course UK theses will be available online.

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Information Technology, The Web, and Its Impending Shakedown: Why and How Projects like Columbia International Affairs are Essential

LINCOLN S. ELLIS
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In 1993, when the World Wide Web made its public debut, the world of information technology and exchange was filled with new possibilities. Of course, the world has long been full of possibilities, which turned on the development of new technologies, the steam engine, the telegraph, the telephone, automation of all sorts, and the list goes on. But somehow this revolution was meant to be something different, something special, something so stacked with potential people could not shy away.

Four years later, that promise lays in chaos. Those once excited are now pessimistic, those singing the webs praises are now composing funeral marches and writing epitaphs. What has happened? What went wrong? And, is there still a chance to back alter course in time to realize the potential still lurking in series' of zeros and ones?

We need not remain so pessimistic. The promise is still there. The potential is still underutilized. And, the next wave is on its way. At this very moment one of the first shakedowns of the World Wide Web is well underway. The massive amount of information promised is beginning to be delivered, at low costs and to and exponentially greater amount of people. These structural and normative changes in the way people develop for and use the Web are indicators that indeed we may well be on our way toward realizing the aforementioned potential.

Nevertheless we must be vigilant about falling prey to the same pitfalls as our predecessors. We, as developers, must make clear our goals as well as our needs as we attempt in assundry fashion to aid those, whose work is invaluable. Particularly to those amongst whose goal it is to negotiate the turbulent waters of international affairs -- in whatever shape that might take -- the Web is poised to serve as the conduit through which, wars are avoided, conflicts are resolved, development is facilitated and democracy is promoted. We are charged with a responsibility of immense proportion. Failure is not an option.

Information Technology

In April of this year (1997) The United States Institute for Peace hosted a conference entitled *Virtual Diplomacy: The Global Communications Revolution and International Conflict Management*. The meeting was two days of discussions on how existing and emerging information technologies could facilitate better more efficient modes of diplomacy, relief aid, Non Governmental Organization (NGO) activity. The usual themes were covered: information sharing, various forms of networking, infrastructure, information reliability and so on. There was little doubt in anyone's mind that the explosion and exponential growth on information technology was indeed a boon for all areas of international affairs.

Yet the question remained: How useful is all this stuff anyway? Ted Okada, Director of the Washington Office for Food for the Hungry delivered a stunning presentation on Rwanda and how their NGO was able to save over 150,000 lives in just over two months but his conclusions were perplexing. Ted pleaded not for the wiring of central posts in Central Africa but for bull horns, fax machines, and telephone lines. A fancy Java script or CGI bin would do him no good, he needed the basics.

Java scripts, flaming icons (see IBM's latest "Hadley" advertisements), and multiply scripted screens share a certain sensibility to certain community but tend to overlook a good deal of the needs of people whose main focus is the sharing and dissemination of information. In short, blinking banners don't aid the peace process but bulletins on West Bank development projects do.

Another point about information technology that one should keep in mind is that the spectrum of people who have ready access to these grand developments is minuscule when it comes down to the people who matter. One needs to constantly keep in mind 'who needs what' and how they can get a hold of it. In the US the number of people who have personal computers at home has leveled off to around 35% and shows no signs of growing. This is not so surprising as well over 65% of all work places in the US are wired and people have access to computers and the Web via these outlets.

What these numbers should alert developers and deliverers of information to is who has access to what, when, and how. We now face a bit of a conundrum: a once radically democratic space for the free flow of information has turned out to be a rather elitist modicum of information delivery and sharing. Yet, I argue, we should not let this deter our efforts.

The fact is that the costs of wiring developing countries in most cases is relatively small when compared to efforts to build other types of infrastructures such as roads and bridges or housing. To be sure, in some cases roads, bridges, and homes may be more pressing concerns than computers and information but we should refuse to see them as mutually exclusive. In fact we should see them as mutually enabling.

What we now face is the dawn of an amazing possibility, the possibility to deliver at very low costs -- to both providers and user -- extremely valuable information and a forum for interactivity like nothing ever before witnessed in human history. With the aid of a modem and a few keystrokes diplomats, NGO workers, researchers, and policy makers have at their fingertips an almost daunting amount of information.

The Web

Ideally the Web was meant to be radically democratic playground for ideas and the free exchange of information in one of the world's most user-friendly designs. As we move into the next century the information based economy will take full shape. Fortunately for us we stand at a place, early enough in the game, to have a hand in shaping what that future looks like. The Web in particular comes ready with the following features that change the information game in a monumental manner.

Easily understood and useable delivery platform

More and more people are flocking to the internet every day. And, the form of the flood is object oriented. Pioneered, on a large scale by Steve Jobs and Apple Computers with the introduction of the Macintosh operating systems, object oriented programming is far and away the simplest and easiest format for human and computer interaction. The introduction of object oriented codes for the internet led to the Web as well as to the internet's large scale popular explosion in the early 1990's.

- **Fastest movement of a commodity in the history of humanity: Real time exchanges**

The speed through which individuals can navigate new forms of technology (the Web in particular) are astounding. Garnering information about ASEAN security talks in Sidney are no further away than the uploading of a real audio file to the Foreign ministries home page or dumping a set of document into the document collection for the conference. No longer need people rely on phone calls or faxes or -- god forbid -- wait for the next edition of the newspaper in order to get the latest, and in a number of instances crucial, information.

- **Further reaching than any other mode of transmission: Globalization**

Although the a fore mentioned conundrum of access is a reality to be dealt with, the global structure of the web, coupled with its ever decreasing barrier to entry puts us on a path toward a day -- not so far away[1] -- when more people will have access to this commodity than any other on the planet.

- **Versatility**

The ways in which the web has been and has the potential to be used are vast. From static web pages to information databases, the Web will be, if it isn't already the mode of exchange and relation in the next millennium. New developments in this medium prove on a weekly basis that indeed the future is here, now.

- **Easily updated**

Along with its overall versatility the specific functionality of Web programming and structure allow, for the first time, an efficient medium through which change is reduced as a risk in ones time or investment. Where as changes in Africa can make a printed book obsolete overnight, the same book online can be updated by the author by the end of the week and reposted making the original text once again relevant but also gaining in value as new forms of histories are constructed almost in real time.

- **Almost unlimited growth potential**

Traditional problems of space constraints virtually -- pun intended -- disappear on the Web. Through this development the rather arbitrary limitations on what gets to whom and how also seem to fade into the sun set. With these limitations obliterated new mechanisms for discerning what information is useful and valuable are being created. Sometimes they are not so new -- see peer review -- and sometimes they are.[2]

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[1] Even the Republicans in the United States realized the need for global access. In the fall of 1995, then House leader, Newt Gingrich launched an initiative to give laptop computers with internet access to all American school children. This effort has since been picked up by the Clinton administration in one of their second term mantras, "all schools wired by the year 2000."

[2] In development now are a number of new search engines that not only disagregate the relevance of your search in relation to your criteria but also categorize the nature of the site itself -- homespun, corporate, educational etc. Further levels of discrimination are also in the works and look to be at least one promising path on the road to a more coherent and useful web environment.

These six elements (by no means exhaustive) highlight the ways in which the Web presents itself as the medium through which information will be delivered shared and prepared in the next millennium. Yet questions remain and confusion reigns supreme. We are in the midst of the "information glut." How do users know what information is good, useful, and reliable? Time is the major element of people's day that they do not have more of. Research is one of the most consuming of all time oriented activities and the Web at the moment does not have friendly bone in its body toward this end.

There are however signs of life. The shakedown has begun. The impending centralization, for good, is on its way -- if it hasn't already arrived. In the next section I look how this shakedown is shaping up. I then explain the what and how of Columbia International Affairs Online and how I see its playing a role in the consolidation and segregation of the information economy of the Web.

The Shakedown

The shakedown has begun. This move is not to be confused with the also growing tendency toward high end use which might in some circles be thought of or seen as elitist activity. Information centralization in the vast and disparate land of the Web is a necessary good for which we must remain adamant. There are many a reason for this but the simple reason is time.

All the information in the world is rendered useless if users can't access it in a quick and easy fashion. This is content provision 101. At the moment the disparate nature of the Web produces the conundrum identified above where by the growth in availability is coupled with an ineffective form of organization thus rendering the dynamic benefits of the Web useless. A number of key players have already identified this problem and a number of models have either launched or begun development. Among these are Amazon.Com, Sidewalk New York, Access, and Columbia International Affairs Online.

Early forms of the shakedown are exemplified through the rise of internet service providers such as America Online, CompuServe, and Prodigy. The creation of these virtual communities not only allowed users to have access to the net but they created a place for users to congregate as well as aggregate and share information. Early services such as these are models for aggregating users in a single place and presenting them with a number of simulations options. Entering chat rooms about gardening, dating, car repair, investing etc. have proven wildly popular in this early stage of internet exploitation. Along with member to member interaction there are the more traditional vendor member relationships such as publications users can browse, read, download, and/or print.

A number of observations are useful about these early models as they provide a useful entry point into exploring how the Web can be used most effectively. First, I will talk about the centralization of information. I then move to the second stage of service or content provision, the provision or creation of a virtual community. These communities not only value the standard ways of measuring whether or not certain types of information are valuable, product loyalty or name brand recognition, but they have developed the natural trust between members of an established community exemplified by the "word of mouth" model. Finally I

discuss how and why these communities gain in value over time and how we, as service providers should proceed to ensure an ever increasing value in our services.

Centralization

The resources of international affairs experts are vast. They are also, for the moment, disparate. This is the problem facing content providers of our nature. This is not a new problem and it is not unsolvable. Early journalism depended on a reporter running all over town to get the background for a story in a haphazard way. Now with the evolution of Lexus Nexus and other related services that centralize a good deal of that background material in an efficient and reliable fashion that reporter can get a days worth of background material in a matter of minutes or seconds.

Amazon.Com and Sidewalk New York are two examples of the type of massive centralization of information I am talking about. Amazon.Com boast over 2 million titles from just about every outfit that has it together enough to print and bind a volume. Along with the simple listing of the text, ansulary information about the book is also provided to the reader, including the usual print reviews and comments from members of the Amazon community. So, at the simple request for John Hagel and Arthur G. Armstrong's *net. gain*, you not only have the propaganda from the publisher but you have the trusted reviews view and your peer's comments. Just about all the information you need to make the decision to purchase the book or not.

Sidewalk New York, one of ten comprehensive city guides to be launched by Microsoft over the next two years, catalogues the hundreds of thousands of goings-on in the city of New York in an easily searchable easily useable fashion. Again, similar to the Amazon.Com model, Sidewalk relies on the database of the Village Voice and the discriminating expertise of a number of area editors as well as the users of Sidewalk to produce the most comprehensive listings guide to New York on the Web. If something falls through the cracks there is a forum for users to submit events. There are also sections of the site specifically dedicated to member to member information, say a clerk at a record store recommending his top five or ten picks for the week. And, of course there is always on every page a place for user comments and feedback.

At Columbia International Affairs Online, (and I use this example not only because it is the one I am most familiar with but because I truly believe that nothing of this nature exists in international affairs at the moment) we have recognized the disparate nature of relevant analytical material in international affairs and have created a site that collapses a static web site and a traditional database. Yet for all the technology in the world the real quest remains the centralization of high quality content, a process which is as old as the day is long, one that revolves around peer review, word of mouth, and the occasional risk taking.

What we have done is gone to a number of well respected universities, think tanks, and in some cases government agencies in the United States and abroad -- 40 for launch -- and collected from them various forms of gray literature: working papers, conference proceedings and the relevant publishable papers and are publishing the full texts of these works. In addition we are in the process of negotiating with a number of key journals in the field, Foreign Affairs, Foreign Policy, International Organization, International Affairs and the World Policy Journal to include the full texts of the respective journals. Finally we are

launching the site with the full text of 12 Columbia University Press books, with plans to include the full text of books from the CATO Institute and the American Enterprise Institute.

I believe this to be the largest full text database of high end analytical material available on the Web. It combines breadth with authority and ensures the user that he or she is not missing any valuable information. This, of course, should be the goal of centralizing these sorts of vast amounts of information. Seamless no, comprehensive yes.[3]

Creating the Virtual Community: Shifting power from vendor to member

When one looks for a new restaurant, or a new journal one often exercises both traditional modes of review such a brand name recognition as well as the a fore mentioned word of mouth. In New York, people look to Ruth Reichel for restaurant recommendations but then bolster their decisions with input from friends or family who tell them of their own experiences in the same place. Similarly when a new journal hits the scene the relevant publications in the field review the content and render a decision. These decisions are then foiled by colleges' own opinions of the new publication.

For a good example of this I return to Amazon.Com. When a book is released it immediately is put on sale for Web users. Accompanying the publishers book description are the reviews from the New York Times book Review, LA Review, London Review of Books etc. In addition users are encouraged to post their own thoughts on the book. Early research is showing that these postings are often definitive as to the sales of a particular volume. What this represents is a shift in power from the traditional model where the upper hand was held by the vendor to one where the upper hand is held by the customer.

Many services are adjusting to this sea change by incorporating various forms of push technology into the customization features of their products. Sidewalk asks users for a profile that allows the push function of the site to alert them of relevant goings-on in the city, usually by email. So, when the Lincoln Center Chamber Music Society posts a concert of Beethoven's Sting Quartets, those people whose profiles match up in the relevant area of classical music they are shot out an email with the URL attached and invited to come to the site to get the scoop on the upcoming concert.

At CIAO we are using the same technology to push information to users information about relevant new publications as they come online in the database. So, when a new conference on the Middle-East peace process is posted those users who have noted an interest in conflict resolution and or the Middle-East an email is sent to them with the relevant information inviting them to come to the site and review the piece for themselves. All of our focus groups have suggested that this is the model most beneficial and most often requested by users at the moment. We must respond to what our users request.

[3] I am aware that there are a number of holes in our content at the moment and the thought of compiling a seamless stream of information at any time is rather daunting. My point here is that some of this information exists on the web and some of it does not but it is extremely relevant and useful to a wide variety of people involved in international affairs.

Being Innovative AND Responsive: Keeping your community in Mind

The on ramp to the information superhighway is now littered with the casualties of good ideas gone bad. From Apple Computers to the interactive television, ideas that lost sight of what the customer or user wanted as opposed to what the developer thought the customer wanted proves that not all technological innovation automatically means a successful model for user integration.

Virtual communities, just like regular community are dynamic spaces of information exchange and innovation. However, too much innovation without the consultation of your community can result in unwanted developments such as a loss of membership or wasted resource expenditures. Suppose the Watson Institute at Brown University suddenly begins to produce papers of substantially lower quality than what the community has come to expect. How helpful is it to continue to push that information to your clients? Users, across the board, are saying less information but of be sure the information that we do receive is of extremely high quality. Why not remove Watson and replace it with a new paper series from the University of Ulster that is producing innovation solutions to conflict resolution? Or, why not poll the community from time to time to see what new material is out there, what people are using, and in what fashion?

The point here is simple: do not lose site of your virtual community. Your virtual community is your largest resource in making your resource as valuable as you can make it. If one loses sight of what customers or users want the community will eventually fold.

CIAO as a model for information aggregation and friendly commerce

Unlike some, whose job it is to do Web development of various types, most people do not have the time or the energy or the desire to surf the Web in an attempt to prune out the useful and good information. In research done for the development of Columbia International Affairs Online most scholars, students, and professionals told us that the main element that would convince them not only that the Web was a useful resource but to, in fact, use it as a daily resource was higher quality information in an easy to use format.

The fact is that in the analytical world there simply is not a great supply of high end material. There are a few essential major journals, then a few more specifically related to area specific study and the remainder is, to be blunt, not essential. The problem still remains; the major journals are not entirely available on the web -- one does not even operate its own server -- and they are located at five different web addresses. What if they we all housed under one roof, a special house for the essential analytical information in international affairs? Would people consult them more often? Would they download or print articles and read them on the train, plain , or in an automobile? The answer cam back a resounding yes.

Its not so much that people don't already consult these essential texts but rather if they could do so from the comfort of their desks, homes, or even while in transit from one continent to the next they would do so on a more regular basis. However, the full text repurposing of material is by far not the most innovative use of the web and so the search continues to find out how to add value to your community.

I believe that through the process of aggregating essential information and creating a virtual community of scholars, policy makers , and other professionals this is where your essential value-added is going to come. As I see it, the value added is generated by the community itself. The trust of certain member's recommendations, the development of various fractal layers of the community, are just two ways in which extra value is generated.

As I noted before no one has the time to keep their hands on the pulse all the time. The virtual communities that CIAO hopes to create will be little enclaves where experts and new comers alike can share valued information, evaluate emerging tendencies and proclaim the deaths of out dated modes of though or decision making. That this process can happen in real time with an exponentially greater amount of people from a various assundry of perspectives is something unlike anything that has occurred to date.

Conclusion: The Next Wave

Make no mistake, the future is bright. With the perspective of the first generation of web use in our pockets we stand in a prime position to make the second a hundred fold better. The centralization of information, the ability to structure it in ways that allow users more flexibility along with increased efficiency is an opportunity we can not let slip by. I am confident will not.

Information technology -- the Web in particular -- is an amazingly empowering tool which, used in the right manner for the right situation, can make our work that much more effective. The keys to success are keeping in mind the technologies we choose to employ in our service, in what manner, and for whom we are aiming to aid. These simple guidelines will allow us to engage in the development of tools which utilize the specific features in a pinpoint fashion building new mechanisms for our collective benefit.

Exploiting the various features the Web has to offer, centralizing information, yielding to the member/user, and catering to the needs of your specific community are the key points I have stressed in the creation of a content provision model. It is an exciting time to be involved at the nexus of emerging technologies and international affairs. In a sense international affairs are the logical extension of these technologies. Boarders are becoming simultaneously more and less relevant. Trade is spilling over national boundaries creating new conflicts that require the aid of this technology in order to prevent them from reaching irreconcilable ends. The Web is one tool in an ever-growing arsenal of technological weapons. We should not be afraid to use it to our mutually beneficial ends.

Science and Technology Information Dissemination and Promotion at PCIERD-DOST, Philippines

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ABSTRACT

Grey literature in science and technology (S&T) may have been used and have rendered benefits in most countries but in the Philippines, its use and potentials have yet to be fully understood or tapped especially in the context of technology transfer and technology adoption and in contributing to the overall information dissemination activities, particularly at the Department of Science and Technology (DOST), the premier S&T agency in the country. The Philippine Council for Industry and Energy Research and Development (PCIERD) is one of the sectoral planning agencies of the DOST which actually generates grey literature but whose impact need to be assessed.

While the Philippines has yet to fully invest in science and technology (S&T), which are considered the wheels that would propel a country to industrialization, there is a concomitant task for its agencies to disseminate information and promote S&T with the ultimate aim of creating an S&T culture among its populace.

A number of activities are conducted along this line using the tri-media (radio, tv and print) including other special activities like technology for a regional and national technology exhibitions, technology fairs and technology investment clinics. DOST and all its agencies have also established access to the Internet with its own homepage. This has facilitated the transfer of information within and outside the country.

The printed medium is considered a potent tool in the dissemination and promotion of S&T information. These would include proceedings, technology brochures or flyers, newsletters or other technical materials or what are called grey literature that may be distributed to target audience, which includes all regions. But in so doing, linkages or networking has to be set up to facilitate the exchange of information so that development will reach all parts of the country.

This paper is presented in an effort to give some views on the extent of the use of grey literature that are being generated at DOST but which may not yet be fully used in the context of technology transfer. On the other hand, it is being presented to get some views and insights on the use of grey literature in science and technology particularly in a networked environment.

1. INTRODUCTION

The Philippine Council for Industry and Energy Research and Development (PCIERD) of the Department of Science and Technology (DOST) is mandated to serve as the central agency in the planning, monitoring and promotion of scientific and technological research for application in the industry, energy, utilities and infrastructure sectors. With this diversified areas, PCIERD takes charge of eight (8) out of the fifteen (15) leading sectors that have been identified by DOST as having high contributory potential to the attainment of industrialization for the Philippines. These are process, food and feed, metals and engineering, mining and minerals, textile, energy, transportation and communications and construction. PCIERD also gives importance to the development of the engineering manpower and to the conduct of environment-related R&D projects. It supports the DOSTs science and technology (S&T) thrusts as presented in the Science and Technology Agenda for National Development (STAND 2000), under which are more specific areas that need to be developed to contribute to industrialization. Since its inception, PCIERD has acknowledged the need to establish and maintain a strong linkage with the private sector which is the direct user of the technologies or processes developed.

2. PCIERD IN THE DOST SYSTEM

PCIERD is one of the five (5) sectoral planning councils of the DOST. It has the most diversified areas of coverage, hence, its manpower is also composed of technical people or engineers with different areas of specialization who are qualified to provide technical assistance in the implementation of R&D activities. For policy and broad management decisions, PCIERD is guided by a Governing Council composed of representatives from both private and government sectors with the Council Executive Staff as its implementing and support structure. A thorough review of R&D proposals is done by a Technical Advisory Committee and Technical Planning and Review Committees composed of experts in PCIERDs sectors.

In the DOST system therefore, all R&D project proposals pertaining to the areas under PCIERD pass through all the above channels. PCIERD likewise spearheads all other S&T activities in the industry and energy sectors including the development of the engineering manpower and the conduct of environment-related R&D projects.

PCIERD provides technical and financial assistance to seven (7) institutes in the DOST system, twelve (12) regional S&T offices, the private sector, academe and all other agencies that conduct R&D. In all these activities, the private sector is strongly encouraged to participate to ensure that even at the start of an R&D project, there is already a taker of the technology to be developed.

PCIERD plays a key role in the implementation of the STAND 2000 and adheres to the following components:

1. development of export winners (i.e. products and services which have high potential in capturing substantial market share);
2. provision of basic domestic needs (i.e. products and services deemed necessary to sustain a productive population and provide infrastructure for both;
3. development of support industries (i.e. industries crucial to both export and domestic markets; and
4. revitalization of the coconut industry so that its decline will be reversed.

It undertakes an aggressive application of science and technology in harnessing the country's S&T capabilities in its sectoral concerns to come up with the expected outputs of the STAND 2000. The following are the specific STAND commodities under PCIERD:

A. Export Winners
   1. Fruits
   2. Marine Products
   3. Gifts, Toys and Housewares
   4. Furniture
   5. Metals Fabrication
   6. Fashion Accessories

B. Basic Domestic Needs
   1. Food
   2. Housing
   3. Health and Nutrition
   4. Clothing
   5. Energy
   6. Transport
   7. Disaster/Hazard Mitigation

C. Support Industries
   1. Packaging
   2. Metals
   3. Chemicals

D. Coconut Industry
   1. Alternative Processing Methods
   2. Improved/New Products

In giving directions to research in its sectoral coverage, PCIERD likewise looks into the impact that the developments of new products have on the environment. PCIERD's Environmental Plan enables the Council to support and develop technologies not only for the advancement within its sectors, but also be able to contribute more meaningfully to the universal task of protecting and saving the environment.
Also in the DOST system, PCIERD takes charge of implementing the engineering component of the overall DOST Engineering and Science Education Project (ESEP). This and several other projects are under its umbrella program known as the Engineering Manpower Development Project (EMDP). The specific project entitled "Support to the Graduate Programs in Engineering" implemented in two leading universities in the Philippines, is a continuing scholarship program which can be availed of by qualified applicants for MS and Ph.D. degrees in engineering courses.

3. SCIENCE AND TECHNOLOGY INFORMATION DISSEMINATION EFFORTS OF PCIERD

Research and development (R&D) is the focus of the activities of DOST and its agencies and the most important activities after research and development are dissemination of the results of an R&D, technology transfer and technology adoption. R&D comes in two levels: basic research or applied research.

PCIERD provides technical assistance and financial assistance to R&D project proposals that fall under its sectoral coverage, which have been approved by its Governing Council. In its fifteen (15) years of existence, a number of technologies or processes have been developed. The challenge has always been in the effective dissemination and eventual technology transfer and adoption of the technologies, not allowing them be wasted in the laboratory shelves including the time and money that went with the activity.

It is at this point that communication processes for the dissemination of information up to the ultimate activity of technology transfer become crucial and more important because the measure of success for such R&D activities would be the adoption and use of such technologies or processes.

Today, more than ever, the DOST and its agencies are embarking on an intensive information dissemination campaign, not only for its technologies but for the department itself to make people aware about its existence and how it could contribute to overall national development. It promotes what social scientists say that "the heart of the development process is technology. It enables people to extend their horizons beyond the mere struggle for existence. It also harnesses the intelligence of human beings and the force of nature to meet the needs of mankind."

On this premise, PCIERD has put in place regular activities to promote research and development activities in its sectors, i.e. from the start of the project up to its completion. It has to a certain extent, been successful in achieving the transfer of technology, but there is more to be done. PCIERD continues to look into other avenues with which it could improve its dissemination activities. Generally, the Industry Relations and Information Division of PCIERD takes charge of the implementation of these activities. The following are the activities being conducted by PCIERD regularly in a year:

A. QUARTERLY TECHNICAL FORA

This is conducted when an R&D project has been completed and where there are significant results. Also, this activity is undertaken in response to requests by potential technology users on a specific technology. The project leader serves as the resource person and always, provides the participants a technical paper or a brochure about the technology for reference. An open forum after the technology presentation is conducted where the participants give their comments, views or suggestions about the project. From this, the project leader and PCIERD are able to improve or make changes on the technology or process.

B. ANNUAL DOST TECHNOLOGY FAIR

The technology fair is one big event for the DOST and its agencies because it showcases technologies that are already commerciable or are ready for commercialization and where business agreements or investments between technology generator and potential adopter are already discussed usually during the Investors' Forum. Moreover, it presents the various services of the DOST agencies and other government agencies that conduct R&D and the products that are developed from the technologies. Also, it is during this event that the collaboration among government and the private sector and the academic community is highlighted through the collaborative R&D projects undertaken. PCIERD actively participates in this event where it usually present 5-10 technologies with product samples and prototypes and the corresponding technology flyer or brochure.

C. NATIONAL AND REGIONAL S&T FAIRS

PCIERD sees to it that it participates in national and regional S&T fairs in an effort to boost its information campaign on technologies, technology transfer and commercialization as well as the services it offers. Printed materials i.e. technology flyers or brochures are always part of these activities.

D. NEWSLETTER AND OTHER PUBLICATIONS

Since its inception in 1982, PCIERD already saw the need to come with its newsletter as it is believes that the printed materials is still an important information tool. Today, even with the so-called information highway that we are in, the printed material still presents its usefulness particularly in storing information and more specially in reaching the remotest areas, where the computer is still an unknown thing. PCIERDs newsletter - PROGRESS - is published quarterly and is distributed to government agencies, the private sector and the academe. It presents the activities of the Council, particularly the projects that have been completed as well as those that have been newly approved by its Governing Council. It also informs the public about new policies, new agreements forged between PCIERD and private entities as regards the conduct of a research project, as well as global trends in PCIERDs areas. PCIERD also publishes other materials like Annual Report, Guidebook on the Implementation of R&D Projects, technology flyers, institutional flyer and proceedings of technical seminars. Other publications are being lined up like the Compendium of Completed Projects for a ten-year period and a Compilation of Winning Entries in the PCIERD Search for Outstanding Research in Industry and Energy.

E. PRESS CONFERENCES/PRESS RELEASES

PCIERD has established a good relationship with the media - both television and print for the dissemination of its activities. Within a year, at least four press conferences are held, usually on the results of a completed project or on an upcoming important activity that need to be disseminated.

4. THE PCIERD INFORMATION SUPPORT INFRASTRUCTURE

Through the years, science and technology have made significant contribution towards the achievement of NIChood for the country. There may have been problems of underinvestment in S&T in the past, but this is being addressed because people are becoming aware of the benefits that S&T could provide, particularly in uplifting the way of life of people. This, I believe, is largely due to the information dissemination efforts of the DOST and its agencies coupled with the establishment of infrastructure to support such activities. There are other contributory activities to this like the prioritization of R&D projects, stronger private sector participation in government development efforts and the continued manpower development projects and skills upgrading.

PCIERD has always called for a multi-sectoral participation in R&D activities, from the private sector, academe and other government agencies. For one, it is the industry that has the actual feel of what are needed for a country to gain technological development and therefore know what activities should be pursued, while the academe would come up with courses that are responsive to industry. Realizing this, PCIERD put in place information support infrastructure in collaboration with the private sector and academe.

A. NETWORKING

PCIERD has thrived within a multi-sectoral environment and continues to do so. It pursues the policy that a multi-sectoral approach is effective in the implementation of R&D where there is a sharing of resources and capabilities.

Networking is manifested in R&D through joint projects usually initiated by the government sector in collaboration with the private sector and academe. Philippine universities provide a large manpower resource base which can be tapped to help industry and vice-versa. The basic concept in networking, especially in R&D aspect, is that it will facilitate technology adoption and commercialization process.

PCIERD first established the Manufacturing Linkage Program (MLP) where the universities and the manufacturing sector agreed to upgrade the status of manufacturing practice so that both industry and the university are able to draw top caliber individuals in the field of manufacturing.

In this setup, engineers are encouraged to go into manufacturing because this is a major contributor to economic development in same manner that industry gives due recognition and importance to good engineers in manufacturing. This is done through the conduct of selected pilot projects between industry and the university and the exchange of know-how between the university and the manufacturing industry. The incorporation of manufacturing technology and practices applicable to local conditions into the engineering curriculum is also one strategy of the program. The MLP became successful and it was replicated in other network member schools.

B. INTERNATIONAL LINKAGES

As ASEAN member, the Philippines has established linkages with international communities for collaborative R&D and other S&T activities. PCIERD, through its Executive Director, seats as Country Coordinator in several communities like ASEAN - New Zealand, Australia, Canada, Japan and European Economic Community.
The transfer of information and technologies in the PCIERD areas have been successfully undertaken through these linkages. Further, PCIERD maintains membership in international information networks like the INNERTAP.
PCIERD likewise actively participates in the DOST-initiated information support structure.

C. MEDIA CORE

This is concerned with the public relations and information services of DOST through a massive S&T information campaign in the tri-media and in the near future, the Internet. It is composed of DOST information officers tasked to promote research projects, technologies and related activities through various communication methods and approaches nationwide.

D. SciNET-PHILIPPINES

The Science and Technology Information Network of the Philippines (SciNET-Philippines) generally aims to promote and improve the flow and use of S&T information through resource sharing and networking. It is composed of libraries and information centers of 21 agencies under the DOST committed to provide assistance and support to boost science and technology through information dissemination and retrieval system. The consortium of libraries and information centers was conceived as a medium of information exchange, utilization and application of S&T information in development activities to achieve socio-economic benefits to support the national program through information infrastructure and services.

E. R&D BUDGET DIALOGUE

The R&D budget dialogues are conducted annually with the academe and government institutions in identified seven zones throughout the country for the purpose of rationalizing the use of R&D funds by research institutions. This is also conducted to check on duplications of project proposals and whether a project proposal is S&T-related or not.
PCIERD takes on a significant role in the R&D activities of state colleges and universities as well as R&D institutes by redirecting their R&D policies and thrusts towards the needs of the industry and towards R&D that would lead to marketable products.

5. ASSESSMENT OF GREY LITERATURE IN SCIENCE AND TECHNOLOGY

The S&T information dissemination and promotion activities of PCIERD are well placed and carried out in the best efforts but with the information technology age and with the so-called information highway, there also emerges new ideas, perspectives, designs, methods and processes for the distribution or marketing of information.

With its complex yet comprehensive areas of coverage, PCIERD generates a sea of information, relevant information to economic and technological development that need to be assessed and published for use by its clientele. These are grey literature which could be used to enhance S&T information dissemination activities but whose purpose may not yet be really appreciated or not known at all. In all the activities of PCIERD, grey literature are being developed and used. Grey literature, in fact, seems to form the bulk of printed technical materials at DOST and these have been used to come up with the science and technology master plans. These have also been distributed but only to a selected few, and sometimes not even to those who are more in need of it like the private sector.

While PCIERD lives in a multi-sectoral environment, with the academe and private sector at its partners in all in its endeavors, and while the sharing of resources and capabilities has proven beneficial, PCIERD would like to look into grey literature in science and technology as not only another tool but a potent tool to beef up its information dissemination activities. PCIERD is already producing or generating grey literature but these should be evaluated and redesigned for it serve its purpose which is to be used or accessed by all agencies which PCIERD works with. There is also need for grey literature to be identified within the DOST so that there would be a common understanding especially if it is being used within a network. Having a limited insight on the use of grey literature in science and technology has, nonetheless, opened a whole view of its impact which need only to be appreciated, because grey literature, as it is, is indeed an important tool in information dissemination and in eventual technology transfer.

For this reason, the author looks forward to listening to the experience of other agencies or countries on the use of grey literature, particularly in science and technology. The author also wishes to convey her gratitude to the conference organizer, Dr. Dominic Farace for his invaluable assistance for her to be able to attend the GL'97 and GL observership.

E-Print Archives: a new communication pattern for GL documents

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Abstract

E-prints archives are a new model for the diffusion of scientific information which exploits the interactive characteristics of networked communication. The aim of this paper is to outline current trends in their production and distribution, taking into consideration institutions which provide them and the submission procedures they use. Special attention is attached to differences in the downloading of documents and the updating of archives, as well as the way in which issues such as copyright and peer review are addressed by each archive.

1. Introduction

Harnad's evocative metaphor 'scholarly skywriting' conjures up the dream of many researchers; namely, the possibility to draw on a continuous contribution and global exchange of ideas and experience. Today the dream looks set to come true thanks to networks which are 'not only incomparably more thorough and systematic in [their] distribution, potentially global in scale, and almost instantaneous in speed, but so unprecedently interactive that [they] will substantially restructure the pursuit of knowledge' [1,2].

The high energy physics (hep-th) e-print archive developed by Paul Ginsparg at the Los Alamos National Laboratory in 1991 represents another step forward towards a form of network use which integrates communication and information dissemination. Gisparg's archive began as 'spare time project' [3] for the implementation of a preprints electronic distribution system for a list of 160 subscribers, but is now turning into a system of automatic acquisition, storing, retrieval and distribution of electronic documents. At present it is used by 35.000 subscribers over 70 countries and processes more than 70.000 electronic transactions per day [4].

The archive's success should be measured not so much in terms of the number of its users or of the disciplines it encompasses, but by the fact that it offers a model of rapid, direct and relatively cheap interaction in which researchers participate as producers, distributors and users of information. Network usage had already set this process in motion by facilitating direct communication (E-mail, discussion lists) and document transmission (FTP),

as well as providing information in the form of documents, bibliographies and data bases. What changes with e-print archives is that they establish an *autonomous self-contained* information circuit with its own working rules and are thus a primary source of information and an invaluable working tool.

Although it was not Ginsparg's intention to develop a system to replace scientific publishing, his e-print archive fills the information gap caused, above all, by publication delays. The more the e-print archive becomes a widespread model for high-speed, easy access and free information exchange, the more scientific journals are relegated to an archive function, important only for official endorsement [5]. This coincides with what is a transition period for publishing, and scientific publishing in particular, which is having to come to terms with networked information and is trying and testing new models of information dissemination through electronic journals.

The term grey literature (GL) is never mentioned in the numerous articles or at APS Workshops or in the discussion lists which have livened up the debate on e-print archives. There is much talk, however, of a pre-existing *preprint culture* which has facilitated the transition from the diffusion of preprints on paper to a system of automatic distribution of electronic preprints.

The reasons for the success of the e-print archive in Los Alamos are, however, similar to the ones which have determined the development of GL, which started as a quick, economical communication channel for the exchange of research results among a small number of experts, outside normal commercial channels. Some of the intrinsic features of traditional paper GL have been highlighted by the networked diffusion. The electronic document becomes accessible to a virtually unlimited number of users and thus lowers - at least, potentially - the difficulties of retrieval typical of traditional GL. Moreover, diffusion is faster and distribution is less expensive, without spoiling the layout of the document which, on the contrary, is becoming similar to the final published version.

This is why the communication model developed by Ginsparg raises in a more urgent manner the questions of information quality and intellectual property already posed by GL and, even more evidently, by all the information available on the network.

The aim of this paper is to outline current trends in the production and distribution of electronic preprint archives available on web; in particular, to make a comparison between different e-print archives, taking into consideration institutions which make e-print archives available on web and the submission procedures used. The comparison between procedures will in fact provide useful indications on the role and use of these archives also taking into account other types of information available on the network.

The first part of the paper compares definitions of preprint and e-print and discusses relevant problems; the second part provides a brief description of e-print archive providers and the final part presents the results of the comparison of the different archives.

2. Traditional GL and electronic GL

There is an evident need [6, 7, 8] to redefine GL in the light of the changes brought about by network use. The intrinsic difficulty involved in defining this type of document is due precisely to its informal character, which eludes rigid classification and adapts according to type of producer, production and diffusion methods and disciplinary fields.

Apart from what has been identified as *grey information* [9], networks constitute the channel through which information producers can circulate a large quantity of information to a virtually global user community. Many think that the transformation of paper GL into electronic GL has been a natural evolution [10], but the organisation of centralised or distributed information archives is a new factor, especially if those who have produced the information then manage and supply it directly.

This is why e-print archives are such an emblematic case. Of all GL documents, they are the ones which, in terms of content and format, come closest to the final version published in the journals. In fact, technical reports and theses, for example, are hardly ever published in an unabridged form, but preprints are prepared with a view to publication. One definition of preprints [11] evidences their characteristics and aims: 'An individual author's or group's work distributed among colleagues and field specialists in order to obtain feedback before its publication as a journal article or a conference paper. It often contains references to the journal or conference to which it has been or is going to be submitted'. Following the life cycle of the preprint is not always easy, however, because the reference to the journal may prove to be inexact. This is why the preprint is often cited as such [12], confirming its importance as a primary source of information.

The passage from paper preprint to e-print may, at first sight, seems a simple change in medium, as highlighted by the APS definition [13]: 'a preprint (prepublished article) in electronic form'. However, the APS goes on to underline the differences that exist 'The concept is now more nebulous, and is general enough to include any electronic work circulated by the author outside of the traditional publishing environment. We will define it here to mean any electronic (not necessarily printable) research-related information provided by the author'. This definition broadens the concept of e-print considerably, comprising not only other types of GL but also *any electronic information*; at the same time, it attributes a primary role to the author who circulates the information. There is no mention either of the institution where the research was performed or the primary reason for circulating the preprint (i.e. obtain feedback). The emphasis on the author, distributor of research work, refers to an accepted procedure which combines "non-peer reviewed in private circulation to friendly reviewers" and "non-peer reviewed in public circulation" [14]. The latter was generally carried out by the institution where the research was performed through the production and distribution of its collections of reports.

In most e-print archives, as we shall see, it is the first method which prevails in so far as it is the author who submits his work to the archive. In the circulation of traditional GL, the two procedures cited by Harnish exist

side by side. The difference between them is that circulation performed by institution has always been one of the strongest guarantees of the contents of the document, as well as the main source of its availability. This is also highlighted by the specific cataloguing rules of GL [15, 16] in which information about the corporate source is compulsory.

3. A profile of e-print archive providers

The analysis makes a comparison between e-print archives (often referred to as e-print servers) available on the network and highlights the differences in submission procedures. This analysis has to take into account the institutional role of archive providers, since this often determines their choice of collection and distribution procedures. New tendencies emerge *vis-à-vis* those involved at different levels in the acquisition and diffusion of information: authors, scientific publishers and also libraries. A brief description of the information which each provider networks is given in an attempt to highlight the general framework into which e-print archives fit.

The archives analysed are managed by three types of organisation: scientific publishers, research establishments and university departments. Members of the first group include the American Mathematical Society (AMS) and the American Physical Society (APS). Members of the second comprise the European Laboratory of Particle Physics (CERN), the Los Alamos National Laboratory (LANL) and the Stanford Linear Accelerator Center (SLAC). The third includes the Department of Mathematics of the University of Illinois, the Department of Mathematics of the University of Texas and the Department of Economics of the University of Washington.

These organisations were chosen using the archive pioneered by Ginsparg at Los Alamos as a starting point and by then analysing links to other archives which *reconstruct* a significant network of information and collaboration. Their affinity is, first and foremost, thematic in so far as they share a hard core of archives covering sectors of physics and mathematics, the disciplines with the greatest established *preprint culture*. Of the archives not directly linked by discipline yet cited by LANL, the most conspicuous exception is the Department of Economics of the University of Washington, which uses the same software as Los Alamos to distribute working papers. This archive is included in the analysis because it is an example of transferability of these information systems to other disciplinary fields and to other GL documents.

A quantitative analysis to assess the diffusion of e-print archives in other disciplines more systematically is planned for the future.

This paper does not, however, take into account those web sites which, although linked by LANL and providing preprint lists or technical reports, do not offer functions such as: information searches, electronic document submission and notification by e-mail of freshly submitted documents. Such examples lack the characteristics which make the e-print archive an *autonomous self-contained* system covering all the phases of the information cycle from acquisition to diffusion.

It is worth pointing out, however, that many institutions are now about to set up e-print archives, a fact which confirms the ever increasing diffusion of an information system that will be interesting to monitor.

3.1 Scientific publishers

AMS and APS boast 30,000 mathematicians and 41,000 physicists respectively worldwide and publish some of the most important scientific journals in the field. Both also distribute information via network, produce electronic journals and have their own e-print archives (since 1995 and 1996 respectively).

Their web sites [17,18] provide information about the structure, roles and tasks of each organisation, publicise conferences and seminars and promote discussion lists. The information they offer about publications produced is extremely rich: it includes advertisements for new publications, the fields covered by the various journals, the composition of editorial boards and information about subscription rates. Furthermore, free services such as browsing through tables of contents of current and previous issues of electronic journals and the search of abstracts enhance the gamut of information available and also serve as an important promotional support.

Other paid services, such as the AMS MathSciNet, full-text article search functions and links to related APS papers give an idea of how publishing is changing. Again, what we are confronted with is not so much a change in medium as the exploitation of logical interconnection between information in an effort to meet the information needs of the scientific community. Futuristic scenarios - library catalogues, data bases and journals as a single interconnected data base [19] or the production of personalised journals irrespective of single titles or subscriptions, tailored directly by users [20] - are already technologically feasible. To make them possible, the various publishers need to collaborate more closely both together and with information specialists and, what is more complex and slower, the habits and attitudes of final users will also have to change.

This is the framework within which e-print archives constitute a further variable in the evolution of electronic publishing. The fact that scientific publishers promote debates and provide e-print archives suggest, on the one hand, that they are worried about losing a consolidated group of readers and, on the other, that they feel the need for more rapid, effective means of disseminating information. It is an interesting fact that APS is now promoting the diffusion of electronic journals with differentiated subscription charges, encouraging authors to submit electronic format articles to their peer review journals, while, at the same time, stating their "commitment to making submissions to APS journals easier from all e-print servers" [21] in order to facilitate, among other things, communication between the author of the article and the referee and to reduce delays in publication. The AMS instead intends "to create a kind of umbrella for all mathematical preprints on the net" taking the "lead in co-ordinating that effort" [21].

3.2 Research establishments

CERN, LANL and SLAC are among the world's most prestigious particle physics laboratories. As is well known, research in this field demands sophisticated, expensive equipment, which is generally centralised in a handful of organisations, in which teams of researchers, many of whom come from universities and other research institutions, carry out their experiments. The community of physicists is famous for being organised into teamwork [23] whose 'high task interdependence' requires close collaboration among researchers, who sometimes work in centres that are far from one another. Consequently, compared to other disciplines, physics requires a 'more communication-intensive form of communication' [24]. Furthermore, physicists form a scientific community which is used to exploiting the information technologies and which has been quick to adopt exchange formats such as TeX to transmit texts and special characters.

The need to receive updated information about research results to make up for publication delays (which are greater in mathematics and physics than in other disciplines such as, for example, chemistry), removes attention from issues related to peer review - partly because peer review is an implicit part of teamwork anyway. For these reasons, the e-print archive may appear to some [25] as an experiment which "works beautifully in a small community of people who work in harmony with each other and know each other's reputation".

The above-mentioned preprint culture is evident in the respective web sites [26, 27, 28], which highlight the close collaboration present among the three laboratories and also in the sector of information exchange and integration provided by libraries. Their web pages all display institutional information, news about research activities, seminars and conferences and, together with links to documents and sites of interest, help create a virtual library for high-energy physicists.

The main difference between them is one of management. Whereas LANL has completely automated e-print submissions, storage and diffusion procedures, both CERN and SLAC offer public access to the data bases available in their respective libraries. It may even be incorrect to consider the latter as real e-print archives, although both CERN and SLAC provide links to full texts of documents, allow browsing and search, and notify listserver subscribers of new e-prints.

The common feature of these information services is the high speed with which they disseminate information. In some LANL archives, the e-prints submitted are available on the days they are received, while in others mailings and web availability are weekly updated on Thursdays. The CERN and SLAC libraries also disseminate information *on the fly*, supplementing their own data bases with links to the full texts of Los Alamos e-prints and with information from other HEP institutions.

Both the SLAC's SPIRES-HEP data base, the result of a joint project in conjunction with DESY Libraries, and the CERN's Alice Integrated Library System supply bibliographic information about e-prints and preprints from other HEP institutions such as Fermilab, ITEP-Moscow, IHVE-Serpukhov, KEK, Kyoto University and so on. Since 1994 CERN, which has a dedicated

preprint server, has scanned many preprints to make their electronic version available. Both libraries are also committed to solving the problems involved in converting the different formats of document. CERN, for example, performs tasks that were carried out by SLAC until 1995, supplying a postscript version of Los Alamos e-prints, which can be then converted into PDF.

The SPIRES-HEP preprint database currently contains more than 350,000 bibliographic references to preprints, e-prints, journal articles, technical reports, conference papers and theses since 1974. CERN's ALICE system is made up, like SLAC's, of a collection of data bases, and contains bibliographic references to monographs, periodicals, conference preprints (since 1954) and e-prints, CERN Yellow Papers, progress reports and so on.

The SLAC library also produces lists of the most recent e-prints of interest for theoretical and experimental particle physicists (*Current PPF List*) and reports produced at SLAC (*New from SLAC authors*). Moreover, the list *of Top cited HEP Papers* is a citation index with hypertextual links to the full text of the document, if available. CERN has an analogous service which supplies statistics on accesses to a given e-print and links to documents that have cited the e-print.

Moving on to LANL's e-print archive, better known as xxx.lanl.archive, it is important to point out that, apart from archives dedicated to specific sectors of physics (at present 11), LANL also centrally provides archives of mathematics (4 archives), non-linear science (5 archives), computation and language and, since November 1997, neuroscience (3 archives).

Finally, among the services which are supplying integrated information from different archives, HEPDOC, available from CERN, is worth mentioning. This service uses a single interface to search in the CERN library catalogue, the SLAC-SPIRES Information Retrieval System and the KEK Information System for Preprint. *One Shot World-wide preprints search* developed by the International Center for Theoretical Physics (ICTP) in Trieste is a comparable initiative [29]. It enables users to search in the most important e-print archives and hep institute catalogues.

3.3 University departments

The web pages of university sites generally provide two types of information, addressed to students and connected with research activities. The Department of Mathematics of the University of Illinois [30], the Department of Mathematics of the University of Texas [31] and the Department of Economics of the University of Washington [32] follow this pattern. Along with information about the department, study programmes for graduates and postgraduates, courses and seminars, the three departments provide information about research activities, available information sources and links to other sites of interest.

Although a more exhaustive analysis of university e-print archives would be necessary, they can be presumed to cover specialist subjects, as in the case of the archive on *Algebraic Number Theory* of the University of Illinois and on *Mathematical Physics* at the University of Texas. Nonetheless, in

this case too the peculiar characteristics of each discipline, the *research styles*, the personal and institutional collaboration and information exchanges patterns may be different.

This is why the Department of Economics of the University of Washington, based on the Los Alamos system, is so interesting. In addition to providing an archive of working papers in economics (ECONWPA) with 22 subject areas, the Department also supplies *NetEc*, a set of data bases on relevant economic subjects.

Of these, it is worth citing *BibEc* which supplies bibliographic information about the printed working papers of universities, banks and research centres; *WoPEc*, which collects bibliographic information about electronic working papers available on the Internet and *HoPec*, which supplies the addresses of other on-line working papers.

4. Analysis of e-print archive procedures

The following analysis is based on some of the distinctive characteristics of e-print archives.

4.1 Electronic submission

Table 1 shows how e-prints can be submitted electronically. Although FTP is the most widely used submission procedure, it is important to note that each archive generally meets user requirements by offering more than one procedure.

Table 1
Electronic submission

e-print archives	ftp	e-mail	www
Am Math. Soc. Prep.Server		x	x
Am. Phys. Soc.Prep.Server	x		x
CERN In-house prep.	x		
CERN scanned & e-prints	x		x
LANL xxx. e-print	x	x	x
SLAC Hep Preprint	--	--	--
Alg. No Theory Arch.	x		
mp_arc		x	
EconWPA	x	x	x

For example, LANL's e-print archives and the Washington University Economics Department's EconWPA provide the full range of possibilities. Only the Stanford laboratory fails to allow for electronic submissions since, as we shall see below, the input to its database is performed by the library staff. It is worth pointing out, however, that FTP is used as an internal procedure to mail the documents produced to the Technical Publications

Department, which is responsible for the printing and distribution of everything produced by SLAC. Here we have a further indication of a now consolidated practise in the production of electronic documents and the use of telematic networks, even within the same organisation.

The simple and quick methods of electronic submission not only allow for the mailing of the full text of documents, but also for the processing and storage of bibliographic information and abstracts of newly submitted e-prints. In addition, as we have seen, all archives enable users to subscribe to a listserver which notifies them about bibliographic references and abstracts of new e-prints by e-mail. Besides making the diffusion of information increasingly fast and *personalised*, these procedures help to cut costs considerably. Ginasparg's claim that in 1994 the average cost of a paper was 10 cents may be contested, but the phenomenon of free access does challenge scientific publishers to review their role.

4.2 Submission source

Table 2 shows how the submission of each archive takes place: i.e., who is authorised to input the document into the e-print archive.

Table 2
Submission source

E-print archives	Internal	External.	Any author
Am Math. Soc.Prep.Server			x
Am. Phys. Soc. Prep.Server			x
CERN In-house prep.	x		
CERN scanned & e-prints		x	
LANL xxx. e-print			x
SLAC Hep Preprint	x	x	
Alg. No. Theory Arch.			x
mp_arc			x
EconWPA			x

By internal submission, we mean that the archive accepts only the documents of authorised persons, generally researchers working at the institution itself. External submission means that document inputs come from institutions collaborating on the update of the archive. This is generally the case of libraries of institutions working in similar fields which are involved in joint projects or collaboration. The third column groups those archives which accept documents from any author.

As can be seen from the table, the majority of archives accept documents from any author, while two archives, CERN and SLAC, only accept preprints from either internal or external sources. In the internal submission, the

papers in the archives document the research carried out and the results obtained within the institute, external submission shows the wide range of collaboration involved, not only in the scientific field but also, as mentioned above, between libraries.

The authorised submission to any author represents a new tendency in electronic archives. The author decides autonomously whether or not to circulate his/her paper and which archive to target.

4.3 Relationship between copyright and submission source

Table 3 presents information about the relationship between the submission source and the copyright as provided by the archives.

Table 3
Relationship between copyright and submission source

Copyright / Submission source	Author's	Archive's provider	No indication
Internal			- CERN1 - SLAC
External			- CERN2 - SLAC
Any author	- AMS - LANL -Alg.Theory - EconWPA	- AMP	

Copyright was not such an obvious problem in traditional GL because the latter was distributed directly by the research institutions or by the author to a limited number of colleagues. Now, however, networked diffusion to such a high number of users has changed the scenario completely. In fact, it is said that the e-print archives fail to respect current copyright laws which, as is well known, are attributed to the journal which accepts and publishes the paper.

The table displays a reverse trend. The majority of archives attribute copyright to the author, thus stressing the close link which exists between the paper and its author. Only APS, since January 1998, has been asking authors to subscribe to a licence of "revocable non-exclusive right to copy,

publicly display and distribute the accompanying document either in the original electronic format or in other formats from it". It is also worth noting that the AMS accepts the submission of abstracts and provides the pointer to the full text on the author's URL and other e-print archives.

Only CERN and SLAC make no mention of copyright. This is probably due to the fact that being internal or, in any case, containing internally selected papers, they correspond to traditional GL. Nothing prevents researchers at these institutions, however, from sending their work to LANL archives directly.

The Information provided by the LANL Technical Publications Department is, in this case, indicative. The documents produced internally at SLAC must be submitted to this office, which assigns them a report number. They subsequently undergo a patent review prior to being eligible for publication and electronic posting to e-print archives. The Technical Publications Department also provides a copyright transfer form which "protects the author and Laboratory rights for distribution". The recommended copyright transfer form states that "The publisher, by accepting this article for publication, acknowledges the US Government's right to retain a non-exclusive, royalty-free license in and to copyright covering this article" [33].

However, the question of copyright arises again when the e-print is published. In many archives, it is possible to find an invitation to the author to respect the copyright laws of the publishing journal. This means that it is up to the publisher to agree that the text of the e-print remain in the archives for free consultation. If this is not the case, it is the author's responsibility to cancel his e-print from the archive.

4.4 Relationship between e-print lifetime and publisher information

Table 4 shows the relationship between e-print lifetime and publisher's information. E-print lifetime refers to the period of time that the archive conserves access to the full text. Three possibilities have emerged: the archive keeps the e-prints for a limited period of two years; the period is unlimited; the e-print is cancelled from the archive after its publication.

The correlation of this information is also relevant to the copyright issue dealt with in the previous table. In fact, in the third case, where the e-print is cancelled after publication, and therefore does not contain any bibliographic reference to the publishing journal, we can see that, on the one hand, copyright laws are respected and, on the other, the e-print life-cycle is mirrored in the archives. This means in practice that, once published, the paper becomes conventional literature and can be obtained as journal article. Table 4 shows that the only archive which adopts this approach is that on *Algebraic Number Theory*, which eliminates e-prints from the archive after their publication and, as a natural consequence, does not supply any bibliographic references.

The two publishers - the American Mathematical Society and the American Physical Society - assume an in-between position, only making the document available for a period of two years, but also supplying

bibliographic information about the published paper.

Table 4
Relationship between e-print lifetime and publisher information

E-print lifetime / Publisher information	2 Years	No Indication	Until Publ.
YES	- AMS - APS	- CERN1 - CERN2 - LANL - SLAC - mp_arc - EconWPA	
NO			-Alg.Theory

All the other archives are permanent, in the sense that the e-print is always available and the bibliographic data are updated. This lends a dynamic character to the information relating to the e-print because the archives register every step in the life of the e-print, from submission to publication.

4.5 Relationship between peer-review and submission source

Table 5 provides information on the relationship between submission source and peer. It is useful, once again, to make a comparison with traditional GL, in which peer review was by implication carried out by the institute which distributed and gave the guarantee of quality to the paper. Looking at the table, we can see that this is the case with the in-house CERN archive, which states that 'such documents have already been refereed for quality, correctness, originality and relevance'. Likewise, SLAC points out that, 'reports are publications intended to meet quality standards comparable to those of refereed journals [...] Although SLAC has not established an official approval procedure for reports, quality is maintained through parallel review by members of staff for value, general interest, quality and relations to the SLAC program'.

The APS's e-print archive represents the other extreme. At the author's request, the paper can go through the peer review system so that the pre-

print can be published in a so called 'regular physics journal'. In this case, the author chooses what is known as a 'privacy option', a controlled access to his/her pre-prints, if he/she does not want to make his/her work widely available prior to publication.

Table 5
Relationship between peer-review and submission source

Peer review / Submission source	Internal	On Request	No Indication
Internal	- CERN1		
External			- CERN2 - SLAC
Any author		- APS	- LANL -alg. theory - mp_arc - econWPA

In the other archives, no such indication is given, probably because it is taken for granted that the quality of the contents and its results are the responsibility of the author.

The absence of peer review is certainly considered by many to be an obstacle to the growth of e-print archives due to the fear of an overload of low-quality information. Some observers underline the fact that existing physics e-print archives are an exception whose development is due to the particular characteristics of physics research. Others, however, maintain that author responsibility will be encouraged by wider diffusion.

In any case, it is worth noting that SLAC's *Top-cited e-print* lists and CERN's statistics constitute and indirect form of peer review based on the opinions of readers. It is also important to mention that many e-print archives intend to link comments from other researchers to the e-print. This would help reinforce the interactivity which is so essential to information exchange.

5. Conclusions

Although the advent of e-print archives probably marks the end of the phase in which GL was hard to identify and obtain, they nonetheless have an

information circuit of their own, which continues to elude the control of normal commercial channels. Free-of-charge electronic access means that the circuit is potentially unlimited, accentuates the speed of information exchange and meets the interaction needs typical of scientific communication. It also gives form to an *autonomous self-contained* system covering the entire information exchange chain, in which anyone can participate at one and the same time as producer, provider and user.

All this raises questions about the roles traditionally played by two other important components of the information chain - scientific publishers and libraries. It also calls into question rules of copyright and the quality control performed by peer review.

What is new today is the principle, followed by the majority of the archives analysed, of the author's voluntary submission of the e-print. This principle is based on the need to make the results of ongoing research immediately available without waiting for publication. The tendency to assign the copyright to the author of the document reinforces this principle. Recent changes in the APS archive and internal procedures followed by SLAC also suggest that the 'irrevocable non-exclusive right ' granted to the archive or the journal protect the author from violation of copyright laws, both when the e-print is submitted and when it is subsequently printed in a journal.

The lack of peer review constitutes the main difference between articles published in journals and e-prints. As we have already seen, partial solutions have been developed by the libraries of SLAC (lists of *Top-cited papers*) and CERN , which supplies statistics reporting the number of times an e-print has been accessed. These facilities serve as searchable citation indexes and make it possible both to measure the impact of a given e-print on other papers and to access the full text of documents which cite the e-print. As these examples show, the role of libraries is becoming fundamental especially in so far as they contribute to the provision of value-added information services.

Many archives, finally, envisage the possibility of linking comment files to e-prints. Gisparg himself states that: "the archive could be partitioned into sectors, graded according to overall importance, quality of research or other useful criteria, and papers could be shifted retroactively and dictated by additional information or follow-up research" [34]. What interest researchers most is not so much the idea of "electronic clones of printed journals" as rapid effective diffusion of information with all the benefits of networked communication.

References

[1] HARNAD, S. Scholarly Skywriting and the Prepublication Continuum of Scientific Inquiry. *Psychological Science* 1990, (1): 342-343 (reprint in: *Current Contents* 1991, 45 p. 9-13; available at: ftp://flp.princeton.edu/pub/harnard; http://cogsci.ecs.soton.ac.uk/~harnad; gopher:// gopher.princeton.edu/11/libraries/pujournals).

[2] HARNAD, S. Post-Gutenberg Galaxy: The fourth Revolution in the Means

An Eagle's eye-view of grey literature research

Part of EAGLE-Tutorial at GL'97

dr R.H.A. Wessels

Introduction

EAGLE, the producer of the database SIGLE (System for Information on Grey Literature in Europe), began in 1980 as an association of seven libraries and documentation centres from seven countries of the European Union. In 1992, membership was opened up to all European countries. As a result EAGLE now has members in 15 European countries. SIGLE covers all subject areas (1/3 technology, 1/3 social and economical sciences & humanities, 1/3 natural sciences/ medicine/ biology). SIGLE contains over 480,000 records. The volume of input to SIGLE is steadily increasing. During the mid-eighties the annual input was 20,000 records. During the mid-nineties the annual input was over 40,000 records. Input of 73,000 records is projected for the year 2000.

During this process of steady growth the members of EAGLE sometimes question whether their efforts are worthwhile. They believe that the documents described in SIGLE provide a valuable information resource, but what is the reality? The International Conferences on Grey Literature have led to more and more information being made available on this subject. In this contribution, research figures are shown which support the quality and value of grey literature.

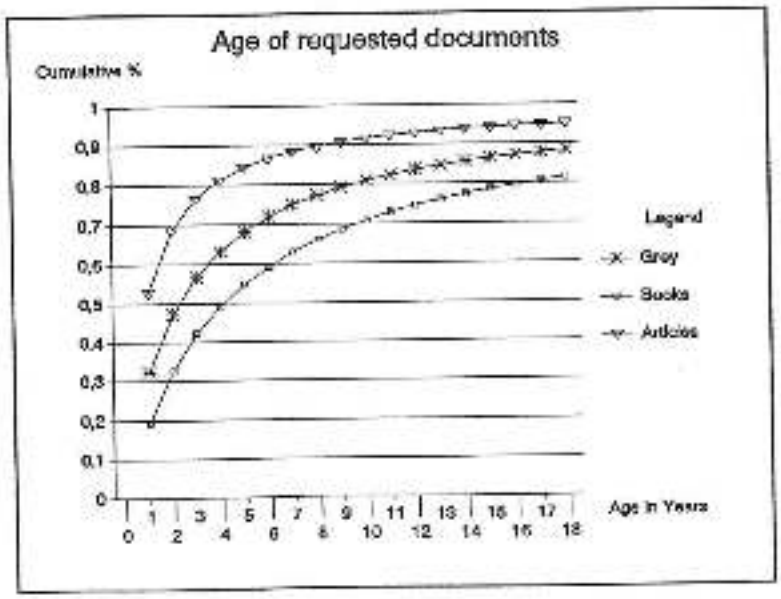
Volume and usage

Non-commercial publications play an important role in scientific communication. Examples were mentioned at GL'93 and GL'95.

Subject area	Grey	Remarks
Agriculture	50%	All Publications
Sociology	75%	Research Projects
Energy	27%	Energy Database
All areas	60%	Developmental Countries

Grey documents are requested from libraries. Not only recent ones but also old ones.

The figure shows the age of requested documents in a library. It shows that journal articles are out of date more quickly than grey publications. Of the requested grey documents, 12% are more than 18 years old.



Those who deny the value of grey literature are predominantly commercial publishers. They argue that quality grey literature will in most cases be followed by a 'white' publication through their channels. The user simply has to wait until the commercial publisher has selected grey documents of value.

In order to research this argument, samples of bibliographic descriptions of grey documents produced 10 years ago in six subject areas were taken from the SIGLE database. For every one of the six samples a journal article database was searched to determine whether or not the grey document had in fact been followed by a journal article. The table on page 2 shows the result of these searches. In total 9% of the grey publications in the samples was found back. Some of the grey documents however were commercially published as books. Only 6% of the retrieved matching descriptions were journal articles.

Database	Sample	Found	Found
Lisa Plus	25	4	16%
Religion Index	25	3	12%
Inspec	25	3	12%
PsychLit	25	2	8%
Sociofile	25	1	4%
Compendex	25	0	0%
Total	150	13	9%

Quality

These figures show that a significant proportion of grey literature is never published 'white' and that even very old grey documents are still requested by the user. Another questions remains. Some people question the quality of grey literature, because there is no quality control, no peer review. However, analysis of a sample of grey literature producers shows that most are prestigious organizations. For example, SIGLE includes documents from:

- Max-Planck-Institut fuer Physik, Muenchen (DE).
- Technische Hochschule Aachen (DE). Inst. fuer Strahlantriebe und Turboarbeitsmaschinen.
- Siemens Solar GmbH, Muenchen (DE).
- Bundesministerium fuer Verkehr, Bonn (DE). Abt. Strassenbau.
- Daimler-Benz AG, Ulm (DE). Forschung und Technik.
- Ministere de l'Environnement, 75 - Paris (FR). Service de la Recherche et des Affaires Economiques (SRAE).
- London Univ. (GB).

EAGLE does not doubt the quality control or peer review standards of organizations like these. Most of the grey documents from these organizations are never published 'white' simply because commercial publishers do not believe they will be profitable, not because they lack quality or value.

Conventional and grey information compared

In order to understand the position of grey information in scientific communication, the last table was developed. It shows that grey information plays a role in all levels of research.

Level	Conventional	Grey
Front research	Personal contacts	Internet discussions
	Conf. proceedings	Grey proceedings
		Original theses
		Reports
Research	Journal articles	Preprints
		Thesis on articles
Review/ education	Books	Syllabi/ Readers

Conclusion

Grey information forms a major part of scientific and technical communication. Grey documents remain unique and are rarely followed by a journal article. Most grey literature is published by prestigious organizations whose names are a guarantee for quality.

TITLE: Towards a questionnaire for monitoring GL education and training in Italy

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ABSTRACT

The development of appropriate curricula and instructional programmes requires an analysis of the life of GL documents.
GL document life goes through three main different stages as follows:

production → **management** → **use**

Of course, these activities are carried out at a level of efficiency and effectiveness depending on the "organizational context".
Each phase of this process involves "actors" with specific needs and skills which are to be identified.
This problem is not very easy to solve owing to the very fuzzy nature of GL documents.
The goal of our work is to collect information needed to conduct a survey aiming at determining an educational programme for a manager actor and deciding whether his profile is or is not independent of the nature and type of the information conveyed by a GL document. It is clear that only in the affirmative case may a general-purpose curriculum be defined for a manager whereas specific curricula are to be developed for those managers whose needs and skills depend on the nature and type of GL documents.
The survey will be conducted by an interview submitted to a number of a "qualified observers" of GL management in Italy.
The results of this survey should provide the basis for an ongoing educational programme for actors involved in the management of the GL documents collected in very large databases such as the System for Information on Grey Literature in Europe (SIGLE).

1. Introduction

During the last decade professional literature has viewed libraries as a part of a complex social system where the education of human resources represents the key point for the achievement of goals and results.

The ability to attain time-varying objectives through autonomous and interfunctional processes, where the skills of technical librarians are enriched with continuous adjustment to new situations (e. g., to the technology which is changing both the way in which professionals work and the way in which information is used), should combine with the ability to interact within a complex information system. Training for goals and results rather than for functions and duties requires a new educational attitude (sensibility) valid for integrating differences, to develop analysis and synthesis processes and, finally, to evaluate every decision in terms of advantages and risks.

This is because a librarian, particularly a GL librarian should know all the aspects of documents related to both their production and their communication, that are needed to reconstruct the information path of GL documents.

In the "era" of global information GL plays an important role and, hence, GL information specialists on one hand should accurately define the contents of GL documents and on the other hand should be able to reconstruct the "grey circuit", the productive context of GL documents, in order to design courses articulated and modulated for the best management and use of grey information.

The development of appropriate curricula and instruction programmes requires an analysis of GL "actors", namely, producers, managers and users. Each of these actors plays a specific role in the life cycle of GL documents, which can be thought as consisting of the following steps:

production → **management** → **use**

This is especially true for the Italian case because of the poor experience in the organization of GL.
At present, in Italy a catalogue of Degree Theses is about to be set up but a GL National Bibliography is still missing, meanwhile bibliographic standardization of Ph Doctorates is carried out.

2.2 The interview target

The qualified observers were selected from Italian special libraries, for their institutional position, the quality of their collections and for the high specialization of their users.

2.3. The interview scheme

We drew up an interview scheme containing a number of questions. Questions may be followed by sub-questions which can be asked or skipped according to the context.
Such a method gives us an "added value of information" with greater flexibility in this preliminary phase of the survey. In this way interview effectiveness and comparison among the respondents will be increased.

The interview scheme consists of three sections.
Section A contains 19 questions about "Issues connected with the recognition of GL documents". The initial questions concern the main problems of GL, first of all the very definition of GL. *Section B* contains 10 questions about the "GL management", whose answers are expected to provide information about the GL management in the library where the respondent works, basically about how GL documents are processed. *Section C* contains 10 questions about "Education and training", focused on past, current and (possibly) future projects of the library on GL education and training
The "tone" of several questions is intentionally generic and "confidential" in order to capture the experience of the respondent as much as possible.

Interview scheme

Section A) - Issues connected with the recognition of GL documents

1) What terms are employed in your Library for GL documents?

2) How are GL documents identified?

3) Do you agree with the following definition of GL?

"Grey literature is that which is not readily available through normal bookselling channels, and is therefore difficult to identify and obtain".

4) What changes to this definition do you suggest?

5) Do you think that GL documents have the same "tone" of grey?

6) How long have you been working in your Library?

7) How long have you been involved in GL?

8) How far back does history of GL in your library go?

9) In the last few years, have you observed an increasing or decreasing interest in GL?

10) Is there any resistence, cultural or operational, from your staff to GL documents?

11) Do you think GL workers have a "grey" place in the organization of your institution?

12) Is your institution a GL producer?

13) If (so) your institution is a GL producer, is its GL production intramural or extramural?

14) If (so) your institution is a GL producer, has it got an inhouse printing service?

15) Can you give a figure for the amount of GL documents managed by your library?

16) Can you give some examples of GL documents managed by your library?

17) Are there special GL documents, e.g. historic documents that need specific management?

18) Has the task of GL information processing required a change in the organizational structure of your library?

Section B) GL management

1) Are GL documents in your library either stacked or processed?

2) If in your library GL documents are processed, which of the following phases (if any) needs special attention?

- selection and acquisition
- cataloguing and indexing

- bibliographic control
- storing

3) Is the bibliographic treatment of GL documents separated from the bibliographic treatment of other documents?

4) Have you encountered difficulty identifying GL producers ?

5) A simple and easy access to "grey documentation" remains a central focus of concern. What is the role that the GL managers could play?

6) GL documents raise problems to users in terms of GL citation in bibliographic reference. What do you think GL managers should know?

7) In the last few years many efforts have been made to improve bibliographic descriptions in order to facilitate access to GL documents. Do you know the International standards ISO 10444 (ISRN)?

8) Do you think that the standard ISO 10444 could solve the problem we are talking about?

9) Are you familiar with GL databases?

10) Are you familiar with SIGLE? NTIS?

Section C) Education and training

1) Are there any education and training programmes in your library?

2) If so, does it resort to internal or external teachers?

3) Are there education and training programmes about GL in your library?

4) If so, what are their contents?

5) In your opinion what should be the educational background of a GL worker?

6) In your library what are the skill of the average GL-worker in your library?

7) In your opinion should there be a specific curriculum for GL-information specialists?

8) If so, should there be one general-purpose curriculum or different curricula taking into account different kinds of GL-documents?

Conclusions

It is the task of library authorities and their heads to assess needs, determine priorities and quantify resources required to organize GL in order to satisfy the users ensuring their information needs are met.

At present identifing grey information, wich is often almost "investigative" or "detective" work needs the professional experience of the GL manager.

These considerations established the basic element of our present work (interview) in order to built up an educational and training model for GL information specialists.

After elaboration, the next step will be to drow up a further questionnaire for use with GL producers and GL users, including international experts who are involved in SIGLE and NTIS databases.

References

(1) Bailey, K. Methods of social research, New York, 1978 (tr. it.: Metodi della ricerca sociale, Bologna 1985)

(2) Coghlan, C.C. The role of information in governmental planning. In Advance in Librarianship,v. 12, 1982

(3) Devadason, F.J.; Lingam, P.P. A methodology for the identification of information needs of users, IFLA Journal, 27, 1997

(4) Di Cesare, R. Il Centro Nazionale di Riferimento SIGLE nella gestione della letteratura grigia prodotta in Italia: ruolo e prospettive. In Secondo Convegno Nazionale sulla Letteratura Grigia, ISTISAN Congr. 48, 1996, p.

(5) Kreitz, P.A.; Addis, L.; Gallie, H.; Johnson, I. A virtual library in action: collaborative international control of high-energy pre-pints, in Second International Conference on Grey Literature, Washington, 2-3 November, 1995, TransAtlantic, Amsterdam

(6) Merton, R.K. ; Kendall, P.L. The focused interview, in "American Journal of Sociology", 1946, LI, p.541-557

(7) Walsh, V. The future of the library profession, IFLA Journal, 23, 1997

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GREY LITERATURE IN POLAND

There is no need to talk about definitions, or the history of „grey literature" at this gathering because everyone here is a specialist in this area and probably took part in previous conferences where these problems were discussed. My aim, then, is to talk at present, on third Conference, about „grey literature", discussing it in the context of situation in Poland (1, 2, 3, 4, 5).

It is worth noting, at the start, that the definition of „grey literature" has been around at least since the 1920's, though in Poland the expression, „grey literature", is not widespread and remains rather unknown. Of course, it appears as source of information and, depending on its type, is utilized to a greater or lesser degree. Several factors influence this, and I will address it later in my presentation.

Poland is a country in central Europe and until 1990, was tied, politically and economically, to the so-called Soviet bloc and this influenced its development and access to grey literature. There are about 1272 academic and scientific libraries, about 9 505 public libraries, about 1426 special libraries and about 312 centres of information. All of these locations are presumed to be colecting at least one type of grey literature. It is an enormous reservoir of information.

Types of Grey Literature appearing in Poland

Among the types of grey literature most frequently making its appearance in Poland are: patents, regulations, research findings, conference papers, government bulletins, bulletins published by various institutions, doctoral works, theses and dissertations, business publications, minutes of various committees and organizations, reports of experts, travel (official trips) information, translations, etc.

Characteristic of Poland is the „underground literature". I assume it appeares in all the countries which did not, and do not, have complete freedom of expression and publication. In Polish libraries, especially the academic, these ephemera consisting of: death notices, announcements, theatre programs, theatre posters and other materials, are specially collected as they give testimony to the cultural and social life of the time.

Patents

Description of patents as a source of information in Poland have a long tradition and do not exactly fit into the accepted definition of grey literature when they are published and information regarding them is universally accessible. The Patent Office of the Republic of Poland (Urząd Patentowy w Polsce- UP) publishes and describes patents. Home page WWW http:// saturn.ci.uw.edu.pl./up/ is set up bilinqually, in English and in Polish. One can also use e-mail: urzadpat@plearn.edu.pl. Collections of Polish and foreign patents are avaiable in several centres in Poland. One of them is in a university, eight of them are technical institutes (universities), one in a military academy, three in industrial research and development institutes, and one in the so-called Technical Club. Among these institutions the Academy of Mining and Metallurgy (AGH) also called in English - Stanislaw Staszic' Technical

University Library in Cracow stands out because it has been handling information on patents for a long time, having besides foreign, a full description of Polish patents. Several other academic libraries, both special and professional, gather collections of patent descriptions in the areas in which it specializes. The Patent Office of the Republic of Poland installed patent data bases with remote use capability. The following are the data bases: INFPOL, INFPAT, MARPOL, MARMAD. Bibliographical data on Polish patents are available in the data base POLPAT. Data base INFPOL contains information on patents for inventions and protection rights for utility models granted in Poland as well as on published applications that have not yet been granted protection. Bibliographic data processed in the Patent Office of the Republic of Poland are the source of information for the INFPOL data base. INFPAT contains information on patent documents from 15 countries and from international organizations (BG, CH, CS,DD,DE,EP,FR,GB,HU,MN,RD,SU,US,VN,WO, and from the new patent offices documents with priority in one of the countries.

Information on international patents is delivered to the INFPAT data base through the European Patent Office from its branch in Vienna (EPIDOS - INPADOC). The base MARPOL contains information on verbal and figurative trademarks protected in Poland, filed under national law, and MARMAD contains verbal and figurative trademarks protected in Poland, filed under the Madrid Agreement.

There is also access to information on Polish patents through the ESPACE-ACCESS system (patent applications), ESPACE PRECES (full text). (There are patents from the Region of eastern and central European states on CD-ROM. The system has been in operation since 1993. The PRECES discs contain a reproduction of scanned patent documents of Bulgaria, the Czech Republic, Lithuania, Latvia, Poland, Romania, Slovakia and Hungary. One can obtain a laser printout. In ESPACE-PRECES one can also obtain a compendium of bibliographic descriptions of the patents in the system of patent as well as in certain cases, abstracts in the original languages together with an English translation. The disc ACCES-PRECES has an index of bibliographic data of all patented documents found on PRECES discs in the original language and in translation into English, and ESPACE-WORLD has patent applications, (full text). TRACES are publications registering trade marks of central and eastern EUROPE. Searches on this disc can be only through MS-WINDOWS.

Not every centre in Poland has a bibliographic data bases. Nonetheless, 6 centres have ESPACE Bulletin and 5 centres have ESPACE ACCESS. These 14 regional patent information centres operating in Poland have other data bases such as PATOS, COSMOS, USAPAT, Chemistry Citation Index, and others. It is not my intention to give a full listing or statistics on this topic, so may refer those who may be interested to Teresa Szymorowska's paper in English: „mediu@bu.uni.torun.pl."

Standards

The Polish Standards Committee (Polski Komitet Normalizacyjny- PKN) sets industry standards in Poland. These standards are widely available in information centres both because they are offered for sale in designated, and authorized by PKN, academic bookstores or by the PKN Publisher. They can be found in the PKN „Catalog of Polish Standards" (Katalog norm polskich), which is only now putting together its WWW page on the Internet. In searching for standards one can use the data base POLINORM, containing descriptions of Polish national and trade standards, and also the STANDARDS INFODISC in which bibliographic data as well as national and international standards can be found.

Unpublished research reports, experts' reports

This type of document is primarily the product of universities and scientific educational research institutes. (In Poland these are institutions linked to specific ministries but more often, they are connected with industry). The data base SYNABA is organized by Information Processing Centre attached to the Committee for Scientific Research which, in Poland, distributes funds for scientific research. This system is the continuation of the data base of the 1970's. It was an international system for scientific research in countries belonging, at that time, to the Soviet bloc. After organizational changes in the area of information services in Poland and after the liquidation of the Central Institute of Scientific, Technical and Economic Information in Poland, it was decided to organize these information services at the Information Processing Centre. This centre carries out searches for users and prepares bibliographic lists.

Scholarly research information is recorded on CD-ROM. Registering this type of production is of unquestionable benefit to information users. Researchers, before doing their research, can check to see whether a similar question has already been researched elsewhere. However, there are long delays in recording data into the system, as authors of works and projects do not always remember to send in a description of their work. It also happens that information on a given work exists, but access to it is difficult. Authors, even when they knew that a registered piece of research was sought after by users, would refuse to send it on interlibrary loan or even make it accessible at their location. Firstly, this was because their works were unique, and secondly, because they had only one or two copies, or they were afraid to show their findings because they had not yet been published.

Habilitation works, doctoral dissertations, Master's theses and Licentiate Projects

The earliest mentioned Centre publishes a „Catalog of Doctoral and Habilitation Works" and is also on the electronic media of CD-ROM. In addition to the „Catalog" and its electronic equivalent, the data base, individual universities publish the bibliographic works of their faculty or they create bibliographic data bases most often supported by the MICRO/ISIS bundle of programs that was set up by UNESCO or using Polish program MAK. In general, they are not accessible on the network. In most of the universities the legalities of access type of material has yet been worked out. On instruction of the rectors (presidents)of universities, the unpublished dissertations are made accessible only on site at of the main Library's Reading Rooms. Each user has to sign his name and write the name of the institution with which he/she is connected. This is to protect intellectual property. But some universities do send even doctoral dissertations on interlibrary loan. Habilitation works in Poland are generally published by a given university, and, in those cases, access to them is relatively easy.

Access to master's theses and licentiates is not readily available. In many universities one can not have access to masters theses and licentiates without the permission of the thesis advisor. In others they are loaned at their location. Lately some universities tightened access to this type of research as there were cases of theft of the work itself or copies of large fragments of the work had been made.

Conference reports

The beginning of a system of gathering information on post-conference materials in Poland called SYMPO dates from 1984. For this they used a batch method and the large 3-rd generation computers. When the microcomputer era came into being, data bases were developed and created, and currently they are employed in about 30 Polish libraries. A data base contains mainly information on conference materials of conferences that took place after 1980. Retrospective data was not included. In the beginning the data base SYMPO registered only conference reports on technology, mathematics, and natural sciences, but later it was broadened to include social sciences such as sociology, psychology, and library studies and information science.

There is great demand for this type of information because the conference reports often contain the quality of something new. Usually this consists of either the summation of the direction research is going, or points to newly undertaken research. In the meantime, this information is difficult to come by. Most often the conferences participants keep the information in their private collections or in their own laboratories or offices, not turning it over to libraries, even though often the conference is paid for by the university or another institution. These materials, if they are published, would be difficult to obtain through the usual bookstore route. Thus, the initiative of the Warsaw Polytechnic in organizing SYMPO System is very valuable. Howevere, ther are conference materials outside of this system which are only copied and not published and access to them is very difficult.

Underground literature

During the Second World War, as well after it ended, when censorship was rampant and there was no political or economic freedom, leaflets and brochures, books and periodicals were disseminated, it was the so-called „secondary circulation". It was smaller circulation. The so-called „underground" literature dating from World War II found its place in bibliographies published both in Poland and abroad. And the same thing happened with publications that came out underground during the regime of the so-called People' Poland (see selected examples in Notes). There are various categories of underground literature. Besides books, brochures, and periodicals prepared most often on a mimeograph, not printed, there are fliers, posters, collections of caricatures. These came usually to the National Library, to the Jagiellonian Library in Cracow, and to some academic and public libraries. There is no full representation of this literature. There is no single information system which would facilitate access to them. These items are appearing in some libraries and data bases, and are being created through the utilization of the MICRO/ISIS software packet.

Corporate literature

Corporate, or trade literature, is being collected primarily by university libraries as well as professional libraries, in centres of information used by industry, or in Technology Clubs. Individual libraries or information centers also collect corporate literature, such as catalogs of production, etc., which is part of the profile of a given company. Trade literature is characterized by quick aging and the lack of many elements which should serve to describe it. Often local data bases or card catalogs are created to facilitate searching according to product or name of firm.

Printed leaflets

This type of grey literature is researched as a source of information relating to culture and social life, giving testimony to the time on which these documents came into being. Among others, there are: death notices, theathre programs, art. posters, theathre posters etc. Collections of this type of social documents appear in both university and public libraries and such special libraries, such a theatre libraries. The manner of organizing this material varies, depending on the organizing principles of a given library. One encounters traditional card catalogs and local data bases as in the case of theater programs.

Conclusions

Generally, one can divide grey literature in Poland according to:

a) field
b) organization of information about given source.

Ad a) there are 3 types, generally:

- technology, mathematics, natural science (patents, industry standards, trade literature);
- social sciences (underground literature, leaflets);
- both, (scholarly educational research, research reports, habilitation works, doctoral dissertations, master's theses, licentiate projects.

Ad b) **Centralized systems**:
patents, standards, published conference reports, habilitation works, dissertations, etc

Decentralized systems:
undeground literature, masters theses, licentiate projects, etc..

The main problems in collecting, accessing, and utilization of grey literature in Poland are:

1) Grey literature is difficult to search, identify, and acquire;
2) There is no one method for processing different kinds of grey literature;
3) Potential users have no orientation as to which types of grey literature and where (in which libraries or centres) they can find it.

There is no well planned localization of patent centres i.e. in small towns, and i.e. in. the North-East part of Poland; there is lack especially in new patent centres, of well prepared personnel; there is no compatible computer equipment available to network with the Patent Office in Poland for proper data distibution;

It is very difficult to find trade literature and unpublished conference papers because only a fraction of these products is registered in some data bases or files and there is a lack of information as to where it is. The language barrier stands in the way of international dissemination of information on grey literature.

With the exception of patents, industry standards, published conference reports and habilitation and doctoral works, other types of literature do not have an accepted countrwide standard bibliographic description nor a single centre of information on them.

Proposal for a syllabus

The Institute of Librarianship and Information Science in the Jagiellonian University at Cracow, Poland is planning to introduce a 15 -hour program on grey literature for students in the academic year 1998/1999.

The aim of the program is: to make students cognizant of the importance of grey literature as a source of information.

The idea is to have all information personnel understand the concept of grey literature as a coherent aggregate, in spite of its multiplicity of forms, its description, its availability, and the legal ramifications of its access.

Grey literature as an information source (2 hours)
Conception, definition, and meaning of grey literature;
undertaking of the different forms and types of grey literature in Poland and abroad
Methods of acquisition of grey literature (4 hours)
Finding available sources to form a collection of grey literature
Methods of processing grey literature (4 hours)
Searching for grey literature in traditional and electronic sources and services (6 hours)
Grey literature and its Users (1 hour)
Needs of users
The localization of users of grey literature in Poland from geographical point of view (somehow they like to use different types)

It is imperative that one or two centres where grey literature is available be visited and assignment given to find specific types of grey literature, or a project to prepare a concise description of those documents that are covered by general bibliographic description on national or international scale.

References:

1. Mason H. Soule, R. Paul Ryan: Role for Information Technologies in Processing Gray Literature. EP - http://www.dtic.mil/summit/tb07-6.html 910.08.1997)
2. Auger Charle Peter: Information Sources in Grey Literature. London 1989
3. Danuta Konieczna: Rola nieformalnych procesów w systemie komunikacji naukowej (The role of informal processes in scientific communication) Warszawa 1982
4. Danuta Konieczna: Badanie w zakresie nieformalnych procesów komunikacji naukowej (Research of informal processes of scientific communication) „Aktualne Problemy Informacji i Dokumentacji" 1979 Vol. 24 no 4 p.16-19
5. Irmgard Lankenau: Grey - but available. IATUL Proceessing 1993, Vol.2 p.149-156
6. Rocznik Statystyczny (Statistical Yearbook) Warszawa 1996
7. The Patent Office of the Republic of Poland. EP - http://saturn.ci.uw.edu.pl./uo/eng/03html
8. Patent information retrieval and retrieval of information on other protective rights. EP
9. Teresa Szymorowska: Regional centres of patent information in Poland. Their location, information sources and activity. EP <medium@bu.uni.torun.pl.>
10. SYNABA. Warszawa 1984

Ewa Dobrzyńska-Lankosz, Jadwiga Kosek: SYMPO. System informacyjno-wyszukiwawczy o materiałach konferencyjnych. (SYMPO- The system for seacrching of conferences proceedings). /In:/ Maria Świerczyńska: Z zagadnień bibliotekoznawstwa i informacji naukowej w szkole wyższej. Kraków 1990

The neglected domain: Grey literature in education and training and the urgency for a European solution

Irmgard Lankenau / Heinz Bartel

Since ancient times, **travelling - or mobility** as it is referred to today - has been considered as a means of personal enrichment for the traveller and as a positive contribution both to the host society, which can derive much from this contact with a different outlook and specific abilities, and to the traveller's own environment, which benefits, when he or she returns, from the experience gained further afield. A German proverb reads „Wenn einer eine Reise tut, so kann er viel erzählen" („strange things happen, when you are abroad" or „if anybody does a lot of travelling he/she has much to tell about it". These remarks reflect in a direct or indirect manner quite a number of aspects which are related to **education and information**:

- development of personality,
- self-discipline,
- intercultural contacts,
- communication in a foreign language,
- comparing your home environment with what you have seen somewhere,
- gaining experience and spreading information.

In the past all this mobility was mostly a matter of **individual ambitions and initiatives** and a question of status in society and of money. Information on travelling adventures was kept and passed in handwriting or in a printed form. Already at that time „grey literature" played quite an important role, if we think of diaries, letters, messages etc. In their reports about other parts of the world travellers very often described patterns of traditional and institutional education in order to meet the natural curiosity of people to know more about educational matters in regions far away. But having a **look „beyond the edge of the plate"** to see what neighbours are doing in the educational field has remained for quite a long time a concern of individuals and in educational sciences particularly a task of a few researchers in the field of comparative education.

In the first half of this century education and training had been local, **regional and national affairs**. In developing education systems each society has its own roots and traditions. Federal countries even face the difficult task to combine or to coordinate different structures and a diversity of educational developments of their states, regions or provinces. This includes manifold models of education

systems ranging from kindergarten to higher education, school curricula, educational acts, examination regulations and also vocational education and vocational training opportunities. In this context it becomes quite clear that education and training depend to a very large extent not only on traditions but also on regional and national languages.

Major agents in education and training like school teachers, education administrators and politicians as well as students only used to have a minor interest in becoming acquainted with foreign education systems and training procedures. It is amazing and characteristic that mainly **education statistics and educational indicators** have been of high interest because they are very useful tools for comparison. These figures and facts were highly welcome in order to convince superiors that in comparison to other countries your own conditions are worse than those of the others as far as resources, working time, income etc. were concerned. Further information on curricula, on political issues and on educational research has been rather neglected. This situation was also reflected in the respective field of **information and documentation**.

In contrast to science and technology there is no comprehensive international database on education and training. Even ERIC documentation remains a domain of anglophone countries like U.K., Australia, Canada.

In Europe there are some **national clearing houses** like PEPSY in Scandinavia, British Education Index in the U.K. and FIS Bildung in Germany. The latter includes all types of literature, i.e. journal articles, monographs and - as far as we succeed in receiving it - **GREY LITERATURE** published in Germany, Austria or Switzerland. Although the original language of most of the documents is German, we try – as far as possible – to translate titles, key words and abstracts into English.

As we have already emphasized, there has obviously never been an urgent necessity for the majority of citizens of a nation to get familiar with education systems of countries abroad. This **situation has tremendously changed** since we have the Single Market and take promotional measures and actions in favour of European integration, the transformation processes in Central and Eastern Europe and the increasing trends towards globalisation and international competition, particularly in the field of economy.

Nowadays it has become clear that education and training will become one of the main factors of competitiveness in a changing world undergoing a **„digital revolution"**. Therefore it is not purely by chance that political leaders like President Clinton with the educational program „Goals 2000", and Prime Minister Blair, who presented the three main targets of his political programme: „Education, Education, Education", are giving top priority to educational matters. The German Federal President Herzog in his speech held at the conference of the German Society of Educational Science in March 1996 pointed out: „Education

non-EU Member States in the integration process on the road to a so-called **European Educational Area** or European Educational Space, in particular by cooperating more closely with the Council of Europe (with about 40 Member States). In other words - we should not forget, that the European dimension of education also includes the **countries of Eastern and Central Europe**. A fact, which we have to bear in mind, if we speak about our ambitions and **difficulties with regard to the exploitation of grey literature** in Europe or even worldwide. As far as grey literature from the CEEC on education and training is concerned we have already lost ground. This statement results from our own cooperation efforts with Central and Eastern Europe and the unsuccessful results due to transitional problems and financial strains in these countries.

But there is a new development with **consequences for the production of grey literature on education and the dissemination of educational information** resulting from a new level of cooperation in the field of education between the PHARE-countries and the EU Member States. A Conference of Ministers of Education of the respective countries in April 1997 in Warsaw titled „Towards a Common European House of Education" identified the following areas of future cooperation as being particularly important:

Quality, including
- basic education and eradication of illiteracy
- evaluation methods and benchmarking/tranparency
- exchanges of experiences/best practice

Mobility, including
- the importance of removing obstacles to the free circulation of students and teachers, inside and outside the European programmes
- the improvement of the recognition of diplomas/competences

European dimension, including
- creating schoolpartnerships
- appropriate coordination of the European Educational programmes
- the teaching of languages/multilingualism
- environmental education

The Knowledge Based Society, including
- multimedia educational software to be produced on a European scale
- opening of the European Network for Schools to the countries of Central and Eastern Europe

Lifelong learning, including
- priority for teachers as knowledge transmitters
- new methods of learning

Teachers, including
- fostering the quality of initial and continuing training of teachers

New mechanisms for Cooperation
- for instance the possibility of groups of countries to be supported.

There is another challenge in view of the **utilization of printed grey literature**. The EU educational programme SOCRATES, which has integrated a variety of existing programmes and actions, contains new elements. An important innovation is **COMENIUS, which introduces European co-operation in school education** through ist support for inter-school partnerships, teacher exchanges, and continuing teacher training. It is quite obvious that the growing mobility of primary school pupils and secondary school students will be accompanied by documentation activities in schools (profile descriptions, reports, project plans, evaluation papers etc.) in printed or electronic form and the exchange of information on experience and areas of interest. This will cause - in a positive sense - new „floods" of grey literature only available to limited circles of persons. We gained already our own - not always encouraging - experience in collecting „grey literature" produced in the **Europe Schools of German Bundesländer**.
It is just the right time that GreyNet takes initiatives maybe in cooperation with the European Commission and the Council of Europe to develop awareness among grey literature producers that information must be made available to all citizens and that ways and opportunities have to be found to compile all these sources. Really, a great challenge for GreyNet !!!

With regard to specific areas of education, e.g. to school education, the collection and dissemination of **electronic information in Europe** is developing quite fast, especially by means of the Internet. But this development has to be channeled - from our point of view - into a comprehensive solution regarding the field of educational information as the whole. Splitting the networks into small specific topics ends up in getting lost in the jungle of information. Even the **European Schoolnet initiative EUN** ought to find shelter under the great roof of education. The overall objective of the EUN is to establish a European school information network as a multimedia and communication platform as well as a framework for

- collaboration of schools in Europe,
- high-quality information services with a pedagogical content and representing a European added-value,
- co-operation at a European level among national education authorities, universities and industry to develop ICT in schools as regards content, pedagogical approaches and technology and
- professional development of teachers, in particular as regards the use of ICT in teaching and learning.

This is without doubt a promising initiative by EU Member States and EFTA countries in co-operation with the European Commission to contribute to the implementation of the **Acton Plan „Learning in the Information Society" (1996)** mentioned before. But at a time when we have reached already the level of structures like „networks of networks" we have to decide at this early stage what to structure and how within the framework of INFORMATION ON EDUCATION AND TRAINING.

In these last decades of the 20th century, the prodigious development of modes of tranport and the spectacular progress in means of communication have meant that mobility is a fact of life in both work and leisure: conveyed by the media and satellites, knowledge now knows no frontiers; it is no longer compartmentalised but is evolving to encompass the whole planet.
These remarkable **impacts by modern telecommunication, information systems and multimedia products** have taken education and training from national levels to the international arena. It is even said, that the future society will be not changing itself into an information society but especially into a **knowledge-based society**.

What do these developments exactly mean for **education and training** as well as **information services** about it?

„Information and communication technologies have indicated a new industrial revolution worldwide which is comparable with the industrial revolutions in the past. This revolution opens enormous capacities for the human intelligence and will be the source for many changes in the way we will live and work together".

This part of the so-called **Bangemann-Report** indicates the fundamental changes taken place in a society determined by development, dissemination and networking of information and communication technologies. The powerful dynamic of the technological development and the fast speed of innovation in all parts of life come together with shorter and shorter half-life periods of knowledge. In addition not only information but even knowledge will be available immediately online from any part of the world.

The world-wide availability of data, facts and information also creates **growing demands for**:

- Know-how on access to information
- Orientation in the labyrinth of knowledge
- Adequate selection of information
- Efficient use of information
- Systematic networking of new information with knowledge already existing.

These demands require respective **qualifications**; **competencies** that will become **key qualifications** in almost all fields of economy and society. They are often cited in the context of „lifelong learning", a conception which is determining from now on our whole life. These developments create new challenges for education and training. Compared with developments in the last decades the change will take place faster.

Looking to future trends we **anticipate the following main developments**:

Decentralisation of education and training: We expect a boom of tele-learning. Today we have public and private education institutions and people have to attend classes and courses in the traditional way. This situation will be changing.

Education innovation by information technologies: Learning in virtual situations will play an import part especially in vocational training.

Education in open knowledge systems: Until now we are used to learn and to do research work according to disciplines. We are convinced that this will be changing: students, researchers and other target groups of interest will have the chance to be taught in an interdisciplinary manner.

New learning environments: We anticipate that learning and teaching will not only take place in classrooms with periods of 45 or 60 minutes but more and more in various settings and time periods.

Self-organised learning: It will be possible to create one's own schedule by choosing the modules one is interested in. Teaching will become even more competitive as soon as teachers and professors and also private education firms will offer their modules via Internet.

It is necessary to think about these developments to make clear that education really becomes **the** social top issue of the 21th century. In order to take part in these developments the time is ripe to reflect precisely on the **availability of information on education and training**.

Looking at these developments we have to recall our position in making information on education and training available. The first question of course is: **what information do the different customer groups need**?

For instance:

Politicians need information to make decisions in an environment where schools and universities become more autonomous and self-determining, for instance:

- Comparative material on education systems
- Information on national education acts
- Factual information on statistics and on education indicators
- Information on current trends and discussions
- Information on pilot projects, succesful innovations, use of computers and telecommunication in education and training

Education administrators as chancellors, rectors, head teachers etc. need:

- Facts and figures on mobility, exchange possibilities, projects
- Information on recognition of examination certificates in various countries
- Information on quality measurement and evaluation of schools

Researchers need information on:

- Calls for tenders
- Information on current research projects
- Research reports
- Publications

Teachers need:

- Curricula information
- News on exchange, mobility, multimedia courses
- Information on multicultural education
- Information on possibilities of in-service training
- Know-how on tele-teaching and instruction

School Students need information on

- Networks for their respective subjects
- Language courses
- Exchange possibilities
- Learnsoftware
- Tele-learning

University students need information on:

- University courses and access, tuition fees
- How to register at universities
- Grant possibilities
- Exchange programmes
- Job opportunities

Industry needs information on:

- Education processes especially in vocational training
- Qualification requirements regarding employees in education
- Investment proposals for continuing training of staff
- Language skills for international communication
- Further training in general.

For all these target groups it is necessary to make information available on publications, decisions, programmes and further activities of UNESCO, OECD and EU.

We hope it became clear that their is a need to **reflect carefully on a better international availability of information on education and training**. Our proposals include the following types of information and make no difference whether they are made available on paper, CD-ROM, Online or on a WWW-site:

1. National and international calls for tender
2. Research Projects
3. Grey literature
4. Monographs and journal articles
5. Internet resources

1. National and international calls for tender:

As far as the EU is concerned information on calls for tender are available through the distribution channels of CORDIS. National calls are more difficult to find. For instance in Germany the web-site of funding organisations can be searched. Some universities try to combine the calls and programmes of the different funding organisations. It would be of interest to link those sites internationally. Although one is not entitled to make an offer it is nevertheless of high interest to learn what is going on in other countries.

2. Research projects:

It is our recommendation to call upon the responsible persons to make a decision to include research projects in education also in the activities of DG XIII of the European Commission. CRIS - the current research information system - will hopefully offer an opportunity for implementation.
In some countries national activities regarding this are already carried out. In Germany for instance IZ Sozialwissenschaften collects the data regularly and in UK CRIB - Current Research in Britain also informs about the projects in education.
Information on current research projects is extremly important in order to avoid double work in research.

3. Grey literature:

Grey literature in education is still a remarkable part of all information published in this field. Especially curriculum information, national discussions and also conference proceedings as well as publications on workshops and special projects are still published „grey". Therefore our proposal is to invite the national information centers on education to pass their grey literature via the respective national centers to SIGLE too. From our point of view education and training will become a major cross-section-area for all fields of science and technology. The further development in a globalised and therefore shrinking world depends highly on the standards of education.

From our point of view in Germany we are working on this question and I hope we will find a solution next year.

4. Monographs and journal articles

As already mentioned above, the national databases on education are really „national". We have to think about a „virtual" European database or what we would prefer a European network of information centers in education which already has been discussed in the framework of EERA, the European Educational Research Association.

5. Internet resources

There are many initiatives to organize Internet resources in education. From our point of view unfortunately most of them are very individualistic and do not refer to international needs and standards. However, there are also some initiatives like the German Education Server at Humboldt University in Berlin trying to cluster related information. It is also necessary to connect these initiatives with SIGLE and CRIS in order to support these systems in collecting also electronic material.

We would like to praise the European Commission for its initiatives SIGLE and CRIS and for its support regarding EURYDICE. Together with the Member States a lot has been invested already in this joint information tool on education especially for governmental interests. We propose to connect EURYDICE closer with the national information centers and the national education networks and of course with SIGLE and CRIS.

We would appreciate it very much if the Commission organized a meeting for all suppliers of information on education in order to create a European network on information on education including SIGLE and CRIS. The spider in the network of course will be EURYDICE.

Let us close expressing our hope that education and training will not only be seen as an investment into future but also as a dynamic potential for the protection and improvement of the individual and public existence today and in the future. Therefore we would like to encourage all of you to invest in sustainable efforts to give education and training also in the field of information and documentation the place it is worth for.

Teaching and Exposing Grey Literature: What the Information Profession Needs to Know: Examples from the sciences

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ABSTRACT

Grey literature takes on new meanings as publishers and individuals create new products and release information in different ways. With several choices of access and delivery usually available in different formats, the difficulty once associated with publishing grey literature and the enormous expenses predicted for a relatively low volume, electronic publishing via html and pdf/adobe acrobat options, has created new models and opportunities, in an almost magical way. Information access in the global economy forces the information professional to be better aware of a wider spectrum of information, including traditional grey literature. As the hues change, the literature takes on a new sense of value. This paper explores different examples of scientific grey literature and suggests how it can be introduced to and by information specialists and how better training and exposure can reduce the obstacles in utilizing it more widely. By concentrating on new modes of publishing and delivery, the capabilities of information professionals are reinforced and grey literature in the sciences gains a more prominent role in a range of information use, access and dissemination activities.

I am very grateful that Marjorie Bloss from the Center for Research Libraries in Chicago has agreed to read my paper.[1] I wanted to share some of my current thoughts and ideas with you about changing themes in scientific grey literature and how the education process has evolved to place grey literature more in the mainstream of scholarly communication in the sciences. I remain very disappointed that I can not be among you to hear the latest trends in the grey literature movement. The early conferences have each promoted grey literature to a new standard and acceptance, and we can expect nothing else from the papers and discussion at this conference.

EVOLUTION OF GREY LITERATURE

The definition of grey literature has changed rather drastically since the First International Conference held in Amsterdam four years ago. That was at the beginning stages of the web as the primary vehicle of electronic publishing. Four years has rarely been compared to a generation in any other medium besides in electronic publishing. When one thinks for how many centuries we depended upon print, one is truly overwhelmed by the contribution of the computer chip. This forces one to realize that technology is never at a standstill and that the web remains at a frontier stage, more embryonic than developmental. Its infancy forces us to realize that web publishing will continue to evolve into an even more sophisticated function and that the concept of digital libraries will not easily be defined as either a unifying or

[1] The author acknowledges with much appreciation the thoughtful editorial comments made by the reader in preparing these proceedings.

distributing force for a long while.[i] Michael Lesk, who posed such a dilemma in a paper delivered in Spring 1997, introduces several future trends that a strong consensus supports.

They include :

- widespread availability of computers for all college and university students and faculty;
- general substitution of electronic for paper information;
- library purchase of access to scholarly publications, rather than physical copies of them.[ii]

Many recent studies have focused on the economic models of electronic publishing, and by extension, the implications for scholarly communication and the professional development necessary for the information industry. Education and training are key elements in ensuring success among all parties involved in the publishing enterprise: the author/editor/compiler (intellectual creator); the publisher (scholarly society, commercial or independent); the publishers' service bureaus; secondary service providers/publishers; the agents, vendors and suppliers; the increasingly visible aggregators; the librarians; and finally the readers or users.

ELECTRONIC PUBLISHING IN THE SCIENCES

Scientific publishing poses different challenges and the examples of my current exploration indicate some unique attributes and trends. Scholarly communication in the sciences holds at its cornerstone the tenets of publishing quickly the results of scientific inquiry or findings, and distributing the results of research expeditiously to the academic and industrial communities. To accomplish this in print dictated skyrocketing prices for information for which there was still significant delays. Electronic publishing has promoted developments in new modes of grey literature in the form of preprint services and technical report literature[iii] distributed and shared via e-mail lists and institutional websites. Outcomes of such examples include a rethinking of the value of published works, the lifespan of interest, and the role of libraries to protect the archival function. Other attributes include: the ability to describe phenomena with methods other than textually; by incorporating multiple datasets utilizing graphs, tables, photos, illustrations, 3-D images, maps, spatial imagery, sound and cinema clips; opportunities for manipulation under different conditions; and incorporating materials from previously cited or published sources.

Educating one about grey literature begins with librarians and scholars in their exploration of different kinds of literature. The universe of information is composed of limitless sources of materials, which librarians have spent decades organizing. This classification process has segregated information into mainstream and grey literature, which has been described by a variety of academics and librarians. However, libraries tend to consider the "special collections" as those which require out of the ordinary treatment and care; and in today's practices where materials are increasingly processed by an outsourcing agency or by the supplying vendor, it is the grey literature that has gained a new visibility.

other laboratory environments. The United States Agricultural Research Service and its Animal Welfare Information Center at the National Agricultural Library and various Centers for Alternatives to Animal Testing have promoted an entire culture to respond to the new definitions of the word 'Alternative' in the context of animal use in research, testing and education. "Alternative" refers to methods, models and approaches that result in the "reduction" of the number of animals required, that incorporate "refinements" of procedures which result in the lessening of pain or distress to animals, or that provide for the "replacement" of animals with nonwhite animal systems or the replacement of one animal species with another, particularly if the substituted species is nonmammalian or invertebrate.[ix] This definition of alternative has evolved from the concept of reduction, refinement and replacement (3 -Rs) of animal use originally proposed by Russell and Burch in 1968.[x] What constitutes this as grey literature is that it brings together for the principal investigator, the legislation, bibliographic databases, laboratory manuals, physical resources, subject specialists, and each literature search required to support the animal alternatives is unique creating an "Improved Research Protocol."[xi]

4 ❖ SCIENTIFIC JOURNALISM - There are numerous solid, clever and informative examples of how a well-established and respected journal has created new options for itself and inaugurated a new online version, richer in niche information, more current and avoiding the rigors of traditional scientific publishing. One of the more interesting examples of this type is Science's, Next Wave.[xii] The wide scope of coverage includes information on sources of funding for scientists in training, features by the gurus in electronic publishing, career options for graduating scientists, and other useful information which would not have always been predictable coming from the American Association for the Advancement of Science (AAAS). This new format and extension of other print and electronic products show great promise in meeting needs of the members of this society.

5 ❖ IMAGE DIRECTORY[xiii] - On October 7, 1997, Academic Press, following on their successful introduction of Project IDEAL (the Academic Press Online Journal Library, with the entire list of 175 journals available online to subscribers) announced in a press conference the launch of the Image Directory, reported to be the world's first online catalog of images. It is basically a new reference work in an interactive format.

Beginning with more than 100,000 records to date, this one-of-a-kind database of information on visual images is from collections worldwide, and supports the close professional collection between librarians and museum staffs.[xiv] It must be remembered that this product is not intended to supply images, but only access to images. It is supposed to be equivalent to the "Books in Print" of images, linking to the holding institutions so that the user can be directed to the institution from which you can buy or license the image and seek additional information.

Again, the "greyness" of this product is defined by its multidisciplinary content since it spans the full spectrum of the arts, including painting, sculpture, architecture, textiles, photography, old master prints, ethnographic and iconographic objects, decorative

arts, toys, tools, religious artifacts, lithographs, posters., furniture and furnishings, portfolios, jewelry, maps and more. For the study of religious practices, art history, anthropology, theatre, geography, planning & design, architecture, and numerous other disciplines, this is a marvelously innovative tool. It brings to the user the collections from archives, museums, galleries, dealers, which may not be possible to visit or catalogs which may not be available to browse.

Users can search for images by artist, title, subject, medium, style, material, museum, collection, location, nationality or keyword access across multiple options and platforms. Each record contains data on the work, rights and reproduction information, licensing fees and a link to the image provider's web site. This extends the concept of indexing from one tool to many external sources. Consider how a physical or cultural anthropologist wants to study why a particular remote tribe wears a standard head-dress for certain celebrations. Natural history museums, art museums, and national cultural institutions may have such examples of the head-dress in their collections and it could be retrieved and linked to the holding collection, directing the user to additional information. Such a resource has unlimited potential for its "amalgamation of material from widely divergent sources, making it a single source of authoritative information."[v] What makes this resource so interesting to librarians is that from the vantage of intellectual property, the image providers retain complete control of their images and information. As a reference source, it promotes valuable but perhaps unknown images to a far wider audience and informs users via links about related information sources, such as publications and exhibit catalogs, criticism and commentary, and key contact information. It is clearly a model of an electronic reference work which is not available in any other format. Why Academic Press wants to issue this in a print form as well remains a mystery.

OUTCOMES FROM GREY LITERATURE

Additional byproducts of each of these examples demonstrates how information is being shared globally. Distance education certainly has great success in reaching students at remote locations with access to materials once only found in major libraries; professional meetings and conferences can share the information exchanged there almost instantaneously, eliminating the curiosity of those unable to attend in person; additional opinion can be consulted from world's experts with fewer time delays; and the potential rifts that divide the rich from the less-endowed, is made up by simpler technology and better access. Granted, legal issues remain unsolved and complex, technology costs great sums, but the new language of the web is more universal than anything else today. Messages can be communicated in different languages, time beats to only one clock, and access, however tricky can be negotiated for appropriate sums.

In conclusion, there are some very creative opportunities for the information professional to become better informed about and familiar with grey literature in an electronic age. There is no easy answer concerning what one needs to know or how he or she will learn it, but this paper suggests reasons why this knowledge-base is critical and how increasingly important grey literature is becoming. As Albert Henderson

editorializes, "Considerable confusion obscures the line that separates the grey from the other literature, particularly when it comes to the notion of "being published" in the sense of a formal communication that has been validated by peer review and invested with independent economic resources."[xvi] The sciences have certainly made things very exciting and grey literature will continue to support it widely.

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[i] Michael Lesk, "Digital Libraries: A Unifying or Distributing Force?" Paper presented at the Scholarly y Communication and Technology Conference, Emory University, Atlanta, GA, April 24, 1997. see http://www.arl.org/scomm/scat/lesk.html

[ii] ibid.

[iii] P.A. Kreitz, L. Addis, H. Galic, and T. Johnson, "The Virtual Library in Action," Publishing Research Quarterly, Vol. 13, #2, Summer 1997, pp. 24-32.

[iv] Jeremy Hope and Tony Hope, Competing in the Third Wave: The Ten Key Management Issues of the Information Age. Boston, MA: Harvard Business School Press, 1997, p. 68.

[v] ibid.

[vi] Jerry Campbell, "Rethinking Boundaries: Government Documents in an Integrated Information Environment." Documents to the People, vol. 24, March 1996, pp. 63-66.

[vii] see http://www.house.gov/science/science_policy_study.htm for example of Science Policy Reform and Libraries

[viii] William Stokes, and D'Anna J.B. Jensen, "Guidelines for Institutional Animal Care and Use Committees: Consideration of Alternatives," Contemporary Topics, vol. 34, #3, May 1995, p. 51.

[ix] National Research Council, Use of Laboratory Animals in Biomedical and Behavioral Research. Washington, DC: National Academy Press, 1988.

[x] W.M.S. Russell and R.L. Burch, The Principles of Humane Experimental Technique: Special Edition, Universities Federation for Animal Welfare, Herts, England, 1992.

[xi] David C. Anderson, "The Pursuit of Better Science: A Personal View of the Search for Alternatives," Animal Alternatives, Welfare and Ethics, vol. , 1997., p. 517.

[xii] see http://www.nextwave.org/index.htm

[xiii] see http://www.imagedir.com

[xiv] Julia Gelfand and Ben Booth, "Scholarly Communication in the Sciences: Managing Challenges for Libraries and Museums," Proceedings of the 15th Biennial IATUL Conference: Technological University Libraries in the Nineties, vol. 3.Helsinki: Helsinki University Library & IATUL, 1994, pp. 9-30.

[xv] Press Release from Academic Press, New York, NY, October 7, 1997.

[xvi] Albert Henderson, Grey Literature and Publishing Research," Publishing Research Quarterly, vol. 13, #2, Summer 1997, p. 3.

The Management of Grey Literature as a Component of a Library and Information Science Curriculum

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ABSTRACT

A Citation analysis of a sample of publications appearing in journals published in Africa was carried out. The citations covered major disciplines in the sciences, humanities, education, agriculture, management, social sciences and librarianship. The study reveals that grey literature is used by researchers across the disciplines with humanities accounting for the highest proportion of grey literature cited (63.3%) and sciences the lowest (23.8%). Given the importance of grey literature to researchers in Africa, as well as the pervasive role of internet in providing access to grey literature, a case is made for teaching the " management of grey literature" in library and information science schools in Africa. The paper provides a course content that includes an overview of grey literature, producers of grey literature, organisation of grey literature, creation of web sites and internet etc.

1.0 Introduction

The last two conferences have dealt in depth with what constitutes grey literature and how its exploitation can be promoted. The theme this year which deals with the design and transfer of scientific and technical information constitutes another stage of the continuum on the importance of grey literature. To us in Africa, the importance of grey literature cannot be over emphasised given the fact that the majority of the publications that emanated from the region are grey literature. According to Balabkins (1984) the majority of research materials in Africa appear in the form of grey literature. In other words, measuring the literary output of Africa without including grey literature will not provide the true picture of the situation.

If indeed grey literature is the major medium for disseminating the literary output, then a lot more emphasis need to be placed on the transfer of information contained in grey literature, thus the theme of this conference is very timely for those of us in Africa. This is because unlike the white literature, it is not well organised in most libraries and documentation centres in Africa. Bibliographic control of this literature is very limited. According to Aina (1995), books seem to

be the most important information carrier among the literates as most libraries including public libraries stock mainly books. The neglect of grey literature can be attributed in part, to the low priority accorded to it in the curricula of most library schools in Africa.

In fact in courses such as collection development, cataloguing and classification, very little mention is made of grey literature, rather, most emphasis is placed on books and serials. Advocating for its inclusion in the curriculum, however must be based on an empirical study showing its substantial use by patrons of library and information services.

The categories of patrons of libraries and documentation centres are many and varied but researchers constitute an important category of library and information services users. Without efficient libraries and information centres, researchers cannot perform their duties adequately. To them, libraries and documentation centres are sine qua non to their efficient performance. Thus a study of researchers ascertaining their use pattern of grey literature will provide an adequate base for judging its utilization.

The main objectives of this study are to find out the pattern of use of grey literature by researchers in Africa vis -a - vis white literature and secondly to establish if there is a need for incorporating grey literature into the curriculum of library and information science schools in Africa.

2.0 Methodology

There are a variety of ways for studying the use pattern of grey literature by researchers in Africa. One way of carrying out the study is to survey researchers, using questionnaire and interview as survey instruments for collecting the data. This will involve seeking their opinions on the frequency of use of grey literature compared with the white literature.

Another alternative is to compile a comprehensive bibliography of the writings of researchers in Africa and then analyse it bibliometrically to find out the proportion of what constitutes grey literature vis-a-vis white literature. This assumes that the use of grey literature as a medium for publication presupposes use. A more direct way, however, is to employ the technique of citation analysis in which the citations that appear in the publications of researchers in Africa will be analysed. The assumption here is that any publication cited presupposes use. Thus the proportion of grey literature cited by researchers will constitute a base that can be used in judging the use pattern of grey literature. This is the method adopted for

this study. Di Cesare and Sala (1996) used this method in their study of the use of grey literature in the agricultural economics field.

In carrying out this study, a sample of journals published in Africa were used as source journals. This is because journals in Africa constitute the major medium for disseminating research findings. Certain criteria were listed to enable a journal justify its selection. These are :

(a) the journal must have a continental coverage. Its scope must not be limited to a country or a sub region in Africa.

(b) the journal selected must be based in Africa, that is, it must not be published outside the continent.

(c) it must be a refereed journal.

On the basis of these criteria, the following ten source journals were selected. The citations were taken from the latest issue

1. African Crop Science Journal. Kampala, Uganda - 4 (4) 1996.

2. African Development. Dakar, Senegal - 22 (1) 1997.

3. African Environment. Dakar, Senegal - 10 (1-2) 1996.

4. The African Journal of Finance and Management. Arusha, Tanzania. - 5 (2) 1997.

5. African Journal of Library, Archives and Information Science. Ibadan, Nigeria- 7 (2) 1997.

6. African Journal of Physical, Health Education, Recreation and Dance. Ibadan, Nigeria.- 3 (2) 1997. (AJPHERD)

7. African Journal of Science and Technology (A & B) Nairobi, Kenya. - A 9 (2) 1991 B - 5 (2) 1991.

8. The Journal of African Association for Literacy of Adult Education. Gaborone, Botswana- 10 (1) 1996. (JAALAE)

9. Journal of Social Development in Africa. Harare, Zimbabwe - 12 (1) 1997. (JSDA)

10. Trans African Journal of History. Nairobi, Kenya - 23, 1994. (TAJH)

These are the leading journals in the continent in the various disciplines. They are very regular except the *African Journal of Science and Technology* and *Trans African Journal of History*.

A citation is considered as a grey publication if it is a report (annual reports, technical reports, government documents, manuscripts etc), theses and dissertations, conference proceedings and seminar papers.

3.0 Results and Discussions

The ten source journals yielded 81 articles and 1558 citations giving an average of 19.23 citations per article.

Table 1 shows the distribution of the articles per citation for each field. Table 1 shows that social sciences, agriculture and humanities have more than 20 citations per article. Librarianship and education have the least numbers of citations per article. Table 2 shows that reports constitute the highest proportion of publications cited, followed by journals (30.4%). Overall, grey literature (47.4%) constitutes about half of all the publications cited.

Table 1: Distribution of articles and ciattions accross disciplines

Discipline	Journal	No. of articles	No. of citations	Citations per article
Education	JALAAE AJPHERD	5 7 **12**	73 80 **153**	14.6 11.4 **12.75**
Social Sciences	AE AD JSDA	4 7 4 **18**	69 304 98 **471**	17.25 43.42 14.00 **26.16**
Agriculture	ACSJ	**11**	**260**	**23.6**
Sciences	AJST (A) AJST (B)	7 7 **14**	60 108 **168**	8.6 15.43 **17.12**
Librarianship	AJLAIS	**8**	**98**	**12.25**
Management	AJFM	**9**	**168**	**18.67**
Humanities	TAJH	**9**	**240**	**26.67**
TOTAL		**81**	**1558**	**19.23**

As presented in Table 3, grey literature is very popular among researchers in all the disciplines as it constitutes more than 63.3 % in humanities and 59.2 % in library/information science. The discipline with the least proportion of grey literature cited, is science (23.8%) followed by agriculture (31.5 %). The average number of grey literature citations per article is the least in the sciences (2.85) and highest in humanities (16.88). The average number of grey literature citations per article for all the disciplines considered for this study is 9.12 which is an indication that grey literature is frequently consulted by researchers across the disciplines.

Table 2: Distribution of citations by format

Form	Educ.	Soc. Sci.	Sci.	Agric.	Libr.	Mgt.	Hum.	Total	%
Book	37	98	50	27	9	42	61	324	20.8
Journ	51	91	78	151	21	61	20	473	30.4
News paper	1	2	-	-	10	2	7	22	1.4
WL	**89**	**191**	**128**	**178**	**40**	**105**	**88**	**819**	**52.6**
Repts	54	270	21	53	48	62	145	653	41.9
Thes.	-	6	15	8	2	-	6	37	2.4
Proc.	10	4	4	21	8	1	1	49	3.1
GL	**64**	**280**	**40**	**82**	**58**	**3**	**152**	**739**	**47.4**
TOT.	**153**	**471**	**168**	**260**	**98**	**168**	**240**	**1558**	**100.0**

WL = White Literature
GL = Grey Literature

Table 3: Frequency of use of Grey Literature and average citation of Grey Literature per article

Disciplines	No. of articles	No. of citations	No. of GL	% of GL	Average No. of GL per article
Education	12	153	64	41.8	5.33
Soc. Sci.	18	471	280	38.2	15.55
Agric.	11	260	82	31.5	7.45
Science	14	168	40	23.8	2.85
Library/inf.	8	98	58	59.2	7.25
Managt.	9	168	63	37.5	7.00
Humnities	9	240	152	63.3	16.88
Total	**81**	**1558**	**739**	**47.4**	**9.12**

From the findings, there is a justification for librarians/ information specialists in Africa to treat grey literature publications in the same way as books, serials etc hence the need to ensure that library/information science schools in Africa incorporate the "management of grey literature" in their curricula. The advent of electronic communications with features such as e-mail, listservs and internet services has made it easy for producers to transfer information contained in grey literature world wide. If such publications are produced electronically it will be easy to disseminate the information contained in the publications to those who need them. It is expected that producers of grey literature will ensure that they create web sites to enable researchers gain access to their publications. According to Ojo- Igbinoba (1997) information providers on the Internet can be at three levels : a) national in which various governments in Africa can provide information about their countries on the internet b) libraries and information centres in a country can form a consortium to provide information and c) faculties or a group of disciplines in the various universities can provide the Internet, their various publications. This is particularly significant given the fact that a large number of grey literature publications emanate from the universities.

The Malawian constitution was made available world wide to all Malawi nationals through the internet for their comments. Similarly the Government of South Africa generally provides its constitution, statistics, press information and cabinet papers on the internet. Thus producers of grey literature must be encouraged to ensure that their publications are available on the world wide web.

4.0 Grey Literature in the Curriculum

Curriculum has been described as a statement of programme of courses of teaching and instruction. Most library and information science schools already have curricula in place. But it is well known that curriculum is not static. Thus the paper is suggesting that whenever a library school decides to effect changes in its curriculum it is imperative to make management of grey literature among the courses to be taught. Such a course will involve teaching the following:

An overview of grey literature, producers of grey literature, organisation of grey literature, basics of information technology and communication technology, desktop publishing and creation of web sites on the internet.

5.0 Conclusion

This study is a further proof of the extensive use of grey literature by researchers in Africa. These publications, therefore should be made widely available to researchers since information contained in these publications may never appear in any other format. Librarians/ information specialists will play a leading role in making this possible. The first step is for library and information science schools in the continent to make it an important component of their curricula. It is hoped that this will ensure that library and information science school trainees will appreciate the importance of grey literature, thereby giving it more emphasis than what obtains now in libraries and documentation centres throughout Africa.

6.0 References

1. Aina, L.O. (1996) Promoting the exploitation of grey literature in Africa. Proceedings of the Second International Conference of Grey Literature (edited by Dominic Farace) Amsterdam: TransAtlantic Grey Literature Network Service. pp.63-72.

2. Balabkins, N.W. (1984) Collection information in developing countries. *Havard Library Bulletin*, 32 p. 63

3. Di Cesare, Rosa and Sala, Cesare (1996) The use of grey literature in the agricultural economics field: a quantitative analysis. Proceedings of the Second International Conference of Grey Literature (edited by Dominic Farace). Amsterdam: TransAtlantic Grey Literature Network Service. 157 -168.

4. Ojo-Igbinoba , M.E. (1997) The potentials of Internet for Library Services in Nigeria. *African Journal of Library, Archives and Information Science*, 7 (2) 91-104.

GREY LITERATURE VARIETIES - DEFINITIONAL PROBLEMS

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Abstract

Grey Literature is usually defined as "Non Conventional Literature". Oxford English Dictionary and the Encyclopedia of Library and Information Science have yet to define it categorically. A wide range of documents are covered under this term. It is necessary to establish clear forms of grey literature. An attempt has been made to identify different varieties of grey literature and their relevance to knowledge. The methodology includes review of literature in the Grey Literature area followed by discussion on the prominent characterstics of the same. Generic Design Science Approach is suggested to define Grey Literature. Work in this field is expected to provide framework for systematic research in Grey Literature.

1. INTRODUCTION

Use of colour codes to identify literature is an accepted practice. There are blue prints of engineering drawings and architect's plans. The advertisements that are printed in telephone directory for products and services are called yellow pages. The official government documents are known as White Papers. Auger (1) has identified use of different colours in different countries. In the United States, the word Blue Book is used to denote various official publications, especially the state manuals which give biographical and other details about government employees. In France, the colours are yellow and white. In Germany, the government documents are white while in Italy, it is green and in Belgium, it is grey. However, when we talk of grey literature, it has little to do with colour but more to do with its form of presentation and subject content. Different categories of material are

covered by the concept of Grey Literature. Moreover, they are in different sizes, formats and in almost all subjects. This very peculiar nature of the documents make them stand between black and white as belonging to the 'Grey' Literature' varieties.

2. SELECT DEFINITIONS

A few attempts have been made to define Grey Literature, but so far it is yet to find its place for official definition in "Oxford English Dictionary", "Encyclopedia of Library and Information Science" and its Supplementary Volumes and "A.L.A. Encyclopedia" 3rd edition. "Harrod's Librarians Glossary" 8th edition (1995) has defined it as "Semi Published Materials".
The word "Grey" or "Grey area" explained by three well known Oxford publications, however can convey to some extent, the meaning of "Grey Literature" as is generally understood by us .

1. The Oxford English Dictionary (2) - 2nd edition, Volume VI 1989, has given different meanings of the word 'Grey' in different context. Twin words like 'Grey friar' (P.830), 'Grey goose' (P.830),'Grey hound', 'Grey lag goose' (P.831) have been explained but not 'Grey literature'. However the meaning of the word 'grey' as given in O.E.D., which could be a near match to 'grey literature' is as under -
"Used in various collocations in the place of black to indicate a less extreme form of the activity, object etc." (P.827)

2. The Oxford Encyclopedic English Dictionary (3) - (Single Volume),1991.
Among other meanings, it explains 'grey' as
Grey :- Anonymous, nondescript, **undefinable**
Grey area :- A situation or topic sharing features of more than one category and not clearly attributable to any one category. (P.622)

3. Oxford Advanced Learner's Encyclopedic Dictionary (4) - (Single Volume), 1992.

Grey area :- aspect, topic etc. that does not fit into a particular category, and is therefore difficult to deal with.

Satyanarayana (5) compares grey literature with the Sanskrit term 'A Suryam Pasya'. Where A = No, Suryam = Sun , Pasya = Touch , meaning literature that is not coming into lime light.

The Encyclopedia of Information and Library Science (6) published by Routledge in 1997 has defined Grey Literature as "Publications which are not available through normal bookselling channels" and has stated further that organizations working with these documents prefer to give not a definition but a general description (P.156). But this is similar to what Auger (7) or Wood (8) have said in the Aslib conference in 1982.

3. REVIEW OF LITERATURE

The term 'Grey Literature' is said to have been coined first time in York city in 1978 in a seminar organised by the EEC in co-operation with the British Library. The review of literature done by the present author through two well known secondary sources, "Library and Information Science Abstracts" published by Bowker and Sour - U.K. and "Library Literature", an indexing periodical published by H.W.Wilson - U.S.A. reveals that various alternative terms have been used to cover the literature on "Grey Literature" by these secondary sources and terms have also been used interchangeably. The publishers perhaps do not want to miss the wide array of documents and key sources on "Non Conventional Literature". For example, Library Literature has used terms like -

Grey Literature - see Ephemeral materials

Ephemeral materials - see also

Pamphlets

Underground literature

Vertical files

Underground literature - see also

Small Press

Small Presses - see also

Self publishing

Underground literature

Evans (9) in GL'95 stated that the term is expanded to include the broad category of ephemera because according to Library of Congress subject headings, works such as reports, theses, conference papers, translations and limited circulation government documents are all subject terms for grey literature, with printed ephemera being the broader term. Di Cesare and Sala (10) have categorised the various types of Grey Literature as Light Grey, Medium Grey and Dark Grey according to their estimated availability and accessibility. Quantitative analysis indicates that 'Library and Information Science Abstracts' from 1969 to April 1997 (the latest available at the time of writing this paper) has published 171,000 + abstracts, out of which only 198 abstracts (0.11 %) represent grey literature. Out of those 198 abstracts, 57 abstracts are in languages other than English language. Descriptors used for abstracting are as varied as commercial catalogs and exhibits, working papers, pre-prints, grey literature, on-line databases, library materials, local government publications, legal deposits and so on, for as varied topics as physics, health care, geology, electronic networking, publishing, internet etc. One abstract is on the topic "Medical and Psychological effects - search through grey literature". The information disseminated through the Internet is not covered by the present paper.

This discussion reflects the fact that 'Grey Literature' is still an undefined and uncertain form of literature.

4. NATURE OF GREY LITERATURE

Amongst other characteristics, Grey literature is said to be -

- Non Conventional, fugitive in nature
- Not available through normal bookselling channels
- Has poor bibliographic control

Reports, dissertations, translations and conference proceedings are known varieties of grey literature. However, 'Reports' is a generic term and not all types of reports are made known publicly. Allison (11) states that this literature is called 'grey' because it eludes easy definition. Every field has some varieties of grey literature. This view is also supported by Alberani (12). In the Performing arts - there are written manuscripts, screenplays, musical scores - all have fugitive element. Exhibit catalogs, maps, product promotion brochures, architect's plans - these may qualify for the same. But are these varieties categorized as grey literature varieties ? There are letters, diaries, personal correspondence, paintings, picture post cards, numismatic collections, calendars etc. which form part of collection of libraries. Going by above parameters; they are non-conventional in nature, not available through normal book selling channels with no bibliographic control. All these varieties have historical and research value. The problem is where do we draw the line between mainstream publications, ephemeral literature, alternative literature and grey literature ? What is understood by grey literature is that literature generated by disciplines or institutions for specific purpose and does not have a large audience beyond its own world.

5. DIVERSITY OF GREY LITERATURE

Generation of ideas and their manifestation is seen in numerous forms and they vary with the field. At an idea plane thoughts are generated at different levels and through different channels, such as shown in figure 1.

FIGURE 1. IDEA GENERATION & DISSEMINATION

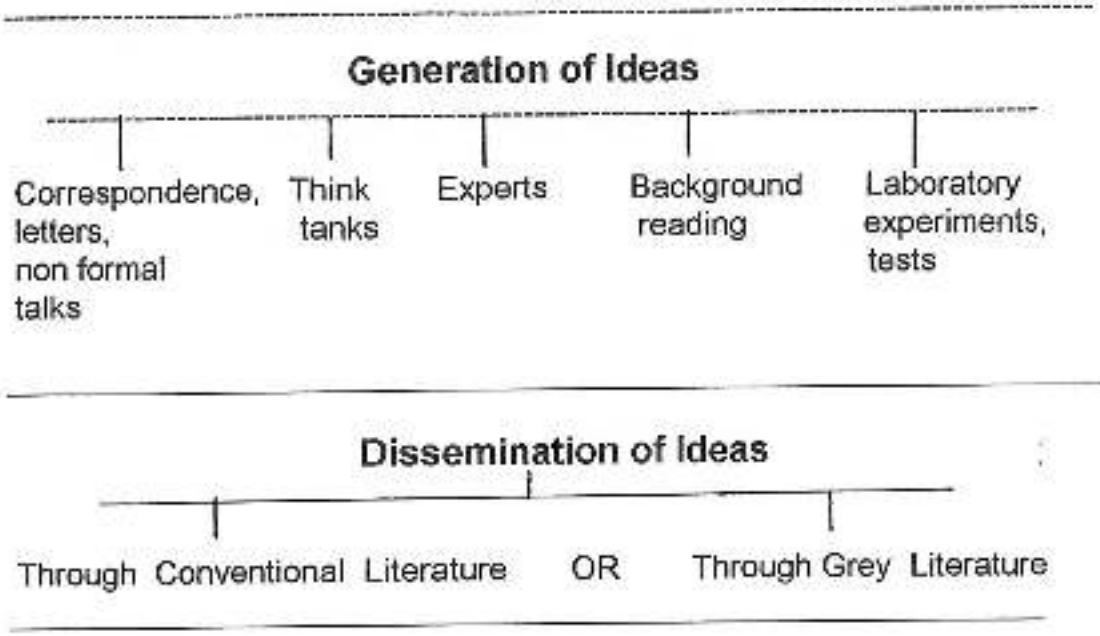


Fig.1 gives a sketch of the idea generation & dissemination process. It is seen that grey literature serves as an equally important outlet to disseminate the ideas, particularly about which,say a final word is yet to be written.

The final output is a sum total of previous knowledge, acquired knowledge and intuition. Intuition is stimulated by discussions, personal talks, invisible colleges, unpublished literature and so on. The outcome is recorded in the form of unpublished laboratory results - which are crucial in decision making process, analysis of compounds obtained through analytical methods - more applicable in chemical and allied sciences, preliminary communications, preprints, feasibility reports etc. Some representative examples from different fields can be cited as -

Medical Sciences - Results of clinical trials, diagnostic data, pathology reports, case study reports.

Health & allied Sciences - Educative material like pamphlet literature produced for laypersons.

Political Science and related areas	- Speeches of political leaders, election manifestoes of political parties, unaccepted govt. policies, directives, policy documents
Economics & Social Sciences related	- Statistical reports, reports on turnkey projects, development plans, social survey reports
Academic related	- Convocation addresses delivered by eminent personalities, training material, study material.
Business & Industry related	- Consultancy reports, project financing reports, sales - promotion data, tender documents, product catalogs, safety data sheets, packaging specifications.

In addition to these, there are publications of charitable institutions, trusts, tariff commission reports, literature produced by consumer guidance societies,souvenirs - most of which can be labelled as grey literature. Among several of these examples, mention must be made of some less conventional sources of industrial information, exemplified by Karki (13) - which can very well fit into the category of grey literature. They are -

- Reports of the meetings
- Announcements for shareholders.
- Feasibility studies
- Ad-hoc & irregular publications of the organizations
- hand outs
- Newsletters or house journals of large industrial houses ,organisation
- Semi technical publications
- Irregular mimeographed publications
- Chairmen's statements at annual meetings
- Safety data sheets
- Tender notices
- Prospect sheets prepared by small industries

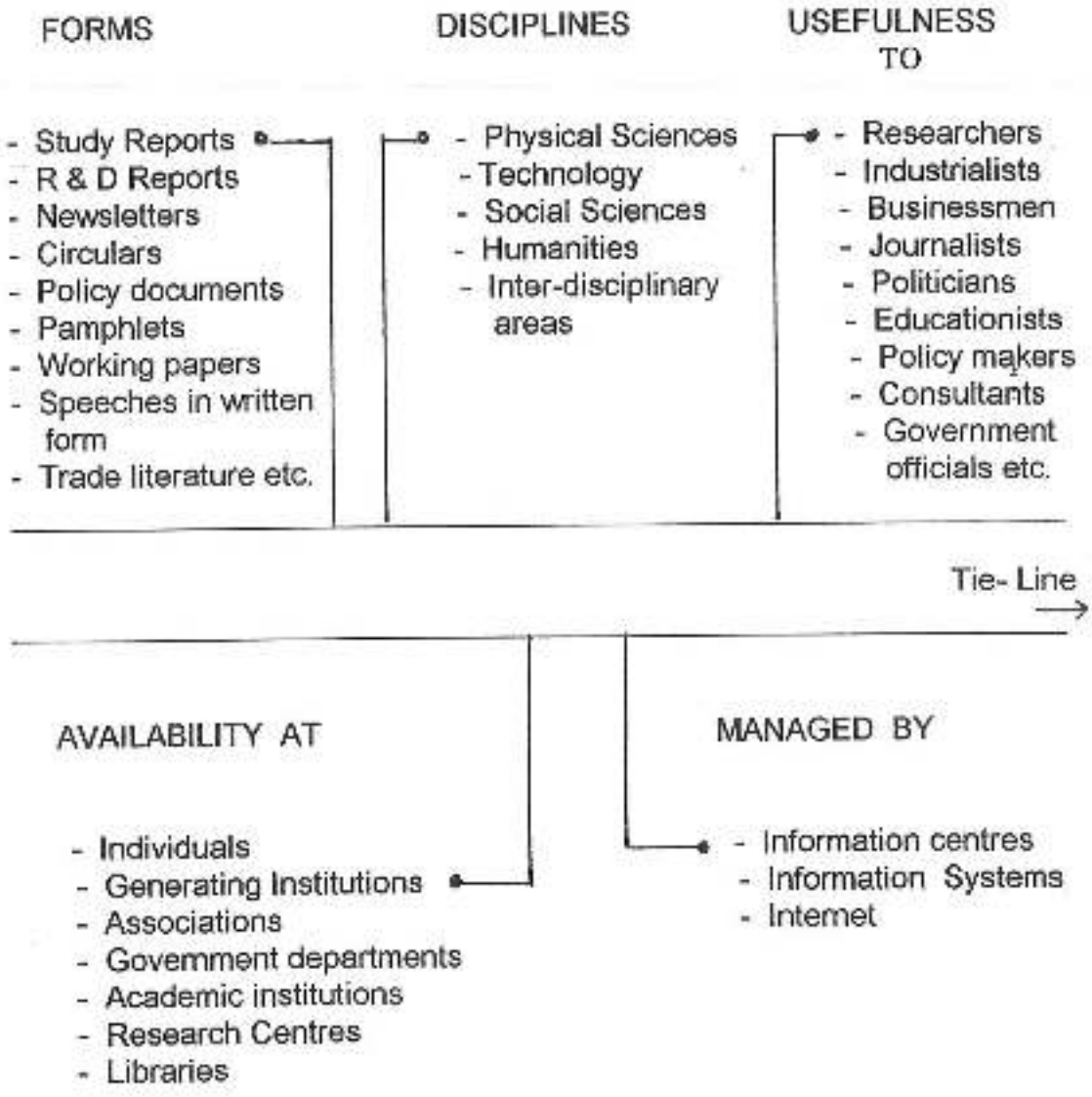
The decision is needed and judgement is to be made whether or not- all these varieties or few of these varieties should be considered for the definition of Grey Literature.

Thus, the complexity of grey literature variety is generated by diversified and interactive factors in terms of form of presentation, target audience, subjects or disciplines, knowledge about availability, accessibility and management. Therefore the definitional issue of Grey Literature can be called as a multidimensional one.

6. GENERIC DESIGN SCIENCE APPROACH

One approach to define Grey Literature could be through Generic Design Science methodology. The major step in this method is to capture all possible aspects of the situation under consideration.To operationalise this step, the dimensions characterising the situation and the elements defining each dimension are listed. Next, the relevant elements are to be connected through a ' Tie Line ' and a suitable definition is to be generated varying with situation. Grey Literature has form, discipline, usefulness,source and management as principle dimensions as shown in the Figure 2. Elements expressing each of these dimensions are written. For example; Grey Literature in Physical Sciences , useful to Researchers may be brought out as Study Report by an Institution and is managed by an Information Centre.

FIGURE 2. MULTIDIMENSIONAL REPRESENTATION OF GREY LITERATURE

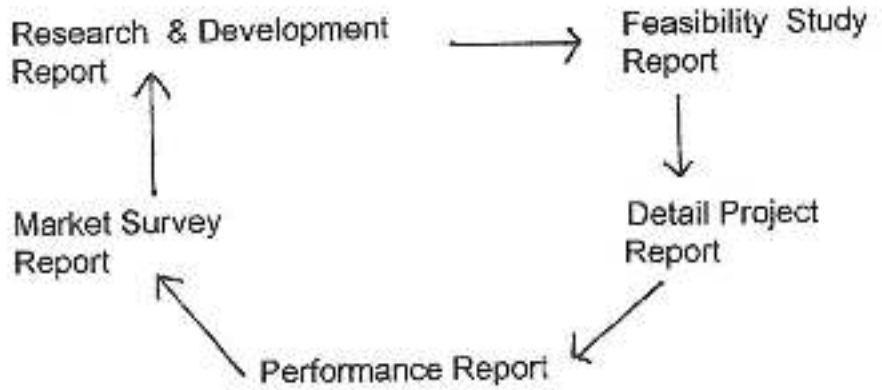


The dimensions and elements can be further added to refine the process.Through such a representation flexibility is offered to define the concept of Grey Literature. In the process, occasionally Grey Literature becomes conventional literature.

7. DISCUSSIONS

In some instances Grey Literature undergoes cyclic path e.g. Reports, as shown in Fig. 3.

FIGURE 3. CYCLIC TRANSFORMATION OF REPORTS



Often, all these reports remain confined to the office of institution and are not available for general consumption.This is commonly found in the industrial sector.

If grey literature is to be considered as primary source of information, it is expected to add to the knowledge. Some research is such that it cannot progress without consulting primary grey literature varieties and consulting this literature is a normal mode of study. This literature addresses practical and contemporary issues. Its value may reduce with time or it may take a new shape. The only constant factor of grey literature is its dynamic nature and changing behaviour. For the institution from where it originates, the literature variety is not 'grey' or 'inaccessible'. It is not widely publicized because the originators perhaps hold the view that it is of little value to others and to some extent it is secretive in content. Dasgupta (14) refers to DEVSIS study team which studied only six selected categories of grey literature

varieties generated in India in the area of Socio-economic development. The six varieties selected were -

- Government documents
- Project feasibility reports
- Working papers
- Research reports
- Seminar papers and
- Statistical documents

Although, these varieties were not mutually exclusive, such a categorisation was operationally convenient and hence the varieties were selected for their availability, accessibility and bibliographic control.

Any research team or an individual in any discipline can have more than one function like research, consultancy, advisory, administrative, policy making, regulatory, educative and informative.

Research may come out in the form of -

- Reports of several types
- Dissertations

Innovative work takes the shape of -

- Patents
- Trademarks
- Industrial designs

Measures of quality control are made available as -

- Standards
- Specifications

Working papers may get published as conference proceedings and are made available through normal bookselling channels in which case they ceased to be grey literature but if they remain unpublished, they become grey literature variety.

Out of the several varieties; over the years, some varieties have attained reasonably good bibliographic control which may be taken out of the purview of grey literature. This view is endorsed by Auger (15) in GL'93 wherein he has expressed that Patents and Standards are so well organised that they are not considered part of grey literature either.

The ultimate aim of any information generated in any form or media is that it should add to the productivity, provoke thinking, should be useful in decision making and should be consumed for meaningful purpose. One may take a generalist approach to the common characteristics of grey literature such as - small print runs, poor bibliographic control, non-conventional in nature and not available through normal bookselling channels. But then this approach may run the risk of concentrating on the nature and forms of publications - as documents for storage, availability and retrieval, ignoring its social implications. For example - views expressed by educationists, economists or scientists at convocations, formal meetings, seminars may provoke thoughts and ideas which would have long standing impact. Such documents may have contemporary value, they may not be permanent in nature, may not get published anywhere but could prove to be indispensable at times.

It thus emerges that-

* Grey Literature is a category which is assigned by the body which generates it.
* It refers to the purpose and the purpose decides its nature.
* It has amorphous categorisation which need not be permanent.
* It is time honoured literature and its life is limited in that particular form. In some cases, grey literature undergoes transformation.
* It is specific to the location and to the situation.
* Its dynamism is imperative.

Therefore,Grey Literature can be defined as, **" Grey Literature is that literature generated by institutions for a meaningful purpose, which is transitory in nature having limited life span in a particular form.It is specific to the location and to the situation ."**

Thus, definition of Grey Literature has more to do with philosophy of librarianship. Wood (16) had suggested that we do not get too bogged down in trying to define the term and that we just recognize that a large and increasing percentage of world's vital literature is not available through publishing trade. What is more important is its knowledge about availability, accessibility and document delivery. Understanding the nature of the problem is the vital factor. Given the diversity of publications and end users, an attempt to define' Grey Literature' precisely, is not a straightforward task. But it need not be used as an umbrella term to cover everything that is non-conventional. Time is now sufficiently matured to have clear demarcation of varieties and their purpose. An ISBD(GL) may be created and be made compatible to MARC format for exchange of data, otherwise accessibility to grey literature varieties will be a serious problem. McDermott (17) has rightly said that these co-operative attempts must become part of what we consider a "normal acquisitions channel".

8. CONCLUSION

It is necessary to establish clear identity of grey literature varieties. This literature covers almost every field of knowledge. Some varieties are liable to be superseded in their content over a period of time, yet they are not easily replaceable. Their availability largely depends upon the policy of the generating institution. Institutions may exercise their authority for whether or not all the documents should be made a public knowledge but their existence should be known. There is a tremendous output of knowledge through grey literature variety and librarians should take a pragmatic approach towards it. The acquisition, processing, dissemination should be a part of collection development policies. Various current awareness strategies might be

employed to capture this fluid form of literature. Some well established varieties may be taken out of the purview of grey literature and for other varieties, special efforts may be made to achieve bibliographic control . Methods may be developed for their cataloguing, classification and indexing which eventually should become international standards. Ignoring this material will be dangerous in the long run. There is a lot of potential for systematic research in this area.

References

1. Auger, C.P. - Information Sources in grey literature. 3rd edition - London, Bowker Sour, 1994.

2. The Oxford English Dictionary. 2nd edition Vol.VI. P.791. - Oxford, Clarendon Press, 1989.

3. The Oxford Encyclopedic English Dictionary. P.622. - Oxford, Clarendon Press, 1991.

4. The Oxford Advanced Learner's Encyclopedic Dictionary. P.399. - Oxford, Oxford University Press, 1992.

5. Satyanarayana, V.V.V. - Sources of generation and distribution of grey literature and its importance to research and development activities. In IASLIC Special Publication No.23. Papers presented at the 14th IASLIC Conference, 26-29 Dec.1983. New Delhi. PP. 119-125. Calcutta, IASLIC 1983.

6. Encyclopedia of Information and Library Science edited by J. Feather and P. Sturges. P. 156. London, Routledge, 1997.

7. Auger, P. - Non-conventional literature : Chairman's introduction. Aslib Proceedings, 34 (11/12), Nov/Dec.1982. PP. 457-58.

8. Wood, David. - Grey Literature - the role of British Library Lending Division. Aslib Proceedings, 34 (11/12), Nov./Dec.1982. PP. 459-65.

9. Evans, T.P. - Multicultural / Multiethnic grey literature - A Rich Resources : An African - American Perspective. Proceedings of the Second International Conference on Grey Literature, 2-3 Nov.,1995. Washington PP. 83-89. Amsterdam, TransAtlantic, 1996.

10. Di Cesare, R. and Sala, C. - Use of grey literature in the agricultural economics field: a quantitive analysis. Ibid, PP. 157-168.

11. Alison, P. - Stalking the elusive grey literature. College & Research Libraries News. 48(5), May1987. PP. 244-46.

12. Alberani, V. - Considerations on the organizational approach and treatment of grey literature in Italy. Proceedings of the First International Conference on Grey Literature. 13-15 Dec.1993 Amsterdam. PP. 42-49. - Amsterdam, TransAtlantic, 1994.

13. Karki, M.M.S. - Some less conventional sources of industrial information. Annals of Library Science and Documentation. 31(1-2), Mar.-June. 1984. PP. 52-55.

14. Dasgupta, A.K. - Indian Socio-economic development literature : enhancing accessibility to the grey variety. In IASLIC Special Publication No.23. Papers presented at the 14th IASLIC Conference, 26-29 Dec.1983. New Delhi, pp. 91-110. Calcutta, IASLIC,1983.

15. Auger, C.P. - Grey Literature - establishing a clear identity. Proceedings of the First International Conference on Grey Literature. 13-15 ec.1993. Amsterdam. PP. 1-4. Amsterdam, TransAtlantic, 1994.

16. Wood, David. Op Cit.

17. McDermott, J.C. - Defining Grey Literature for the 21st Century. Proceedings of the Second International Conference on Grey Literature. 2-3 Nov.1995, Washington. PP. 9-17. Ams terdam, TransAtlantic, 1996.

18. Atton, C.- Alternative Literature : A Practical guide to librarians. Aldershot, Gower, 1996.

19. Dbachree,M.C.- Problems in obtaining Grey Literature. IFLA Journal. 21 (2),1995. PP. 94 - 98

20. Patkar,V.N. - A Generic Design Science Approach to Library Computerisation Journal of Library and Information Science. 15 (2), Dec.90. PP. 119-128.

Teaching the use of grey literature in Latin America

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Abstract

Professionals and specialists in Latin America have not paid very much attention to the question of identifying, locating and providing access to grey literature. It has not been treated as a subject of study and research, and when it has been included as an optional subject in courses at university level, it has not attracted many students. The reason for this is that a lack of understanding of the subject is still to be observed - although documentation centres specialising in different areas of scientific and technological information acquire and stock grey literature, this is still not seen as an important topic.

However, isolated experiments have been carried out in the area of education and training, for example in library schools in Venezuela and Puerto Rico. On the basis of experiments in these two schools, an account will be given of the content, methodology and approach of the courses; of the results observed at student level; of the interest created; and of the successes obtained with specific university programmes.

In particular, a large gap has been noted: in the area of theses, research reports and conference proceedings.

1. BACKGROUND.

An unexplored potential.

I first became aware of grey literature in the 1980s when I was undertaking professional library training in documentation centres in France and Italy specialising in international development and social sciences. IDOC (International Development Centre) in Rome ran a series of courses to intended to lay down methodological guidelines for the organisation of social science documentation centres in developing countries.

In the teaching programme, one significant topic was so-called "fugitive" documents (meaning: transient, or ephemeral). It was pointed out that traditional librarians attached little importance to precisely this type of document, because of its informal and flimsy format, although the material's content was a primary source of information [1]. The most important aspect of this training course was that the documentalists taking part became motivated to conserve the internally-produced documentation of social science organisations.

Secondly, having created and organised the documentation centre of a research institute specialising in rural development, CIPCA [Centro de Investigacion y Promocion del Campesinado], in the north of Peru, I had learned how to deal with grey literature in the form of theses, reports and research reports, proceedings of conferences and seminars, and above all local information produced in the region. The collection of CIPCA's documentation centre included the social science grey literature about the region of Piura [2].

At the same time, directing the documentation centre brought me into contact with other similar documentation centres of Latin American NGOs, where I observed that the collections of these specialised documentation centres were made up principally of grey literature - a type of documentation that was overlooked by staff of traditional university or public libraries [3].

My interest in grey literature was further aroused when I was preparing my doctoral thesis. When considering the library infrastructure of Latin America, and observing its development from the perspective of the past 30 years, I had to consult sources such as theses, studies, conference proceedings, research reports written about this topic. When doing my bibliographic research, I was surprised to find how difficult it was to access this material in the countries that produced it. In very few cases had this material been put into libraries; in most cases it had remained in the possession of the persons who had attended the meetings in question, or it had simply not been processed. In each case, I could access the material in US libraries devoted to Latin American studies, such as the University of Texas at Austin.

Having finished my doctoral studies, I began to do teaching and research. I observed that there was a great gap in the professional training courses offered by universities: there was no course dealing with grey literature. For that reason I developed and offered a course which I was asked to give in two countries of the Spanish-speaking Caribbean region: Venezuela and Puerto Rico.

2. TEACHING GREY LITERATURE.

There are around 100 schools of library and information science in Latin America, of which Brazil has 30, Argentina 28, Mexico 6, Colombia 4, and the other countries have one or two each. Most of the courses lead to the 'licentiatura' (equivalent to a bachelors degree): Brazil offers 3 doctoral programmes and 6 masters, while Mexico, Puerto Rico and Costa Rica each offer one masters programme.

At the present time, due to the need to confront the new demands of information and communication technologies, to the new emphasis on information services and information sources considered as consumer goods capable of generating economic resources, most of these Schools are in the process of bringing their curricula up to date. One observed weakness is that the lack of strong collections in LIS continues to be a real problem for all the Schools in the region, as is the lack of resources available for research and publication [4].

The School of Library and Archive Studies of the Central University of Venezuela (UCV), a state university founded in 1948, forms part of the Faculty of Humanities and Education. The teaching staff of the School consists of 52 persons, of whom 9 are full-time. The course leads to the 'Licenciatura en Bibliotecologia', which is granted on completion of 180 study credits and a dissertation [5].

The Graduate School of Library and Information Science (EGBCI) of the University of Puerto Rico, in San Juan (Rio Piedras campus), was founded in 1969. In 1989 it was accredited by the American Library Association. The staff includes 8 full-time teachers and 3 part-time. A three-year course including 42 credits leads to the degree of 'Maestria en Bibliotecologia' [6].

Problems encountered.

When I was preparing the course on 'Bibliographic control of grey literature', I struck a problem with the professional literature: very little had been written in Spanish or Portuguese [7]. Secondly, I noticed that a large proportion of the literature on the topic had been published in journals to which the Schools did not necessarily subscribe. To obtain the information, I inevitably had to look further afield.

Another question I asked myself was 'how to awaken the interest of the students in the course': how was I going to arouse interest in a topic so foreign to the usual preoccupations of the profession which is immersed in the new demands of new technologies, in dealing with the management and sale of services, or with new courses like bibliometric studies or information networks.

The topic of grey literature posed a problem of definition. The first thing my colleagues on the staff asked me was, what was grey literature? The first thing to be dealt with was my colleagues' lack of knowledge of grey literature. Moreover, it could be said that GL was seen as too specialised, as a topic of limited relevance to current professional interests.

As a result, these considerations were reflected in the number of students enrolling for the course. In Venezuela, I had four students, and in Puerto Rico seven.

Development of the course.

Concerning the justification of the topic, I considered the strategic role which scientific and technical documentation played in the production and transmission of knowledge, and the fact that in many cases these documents are not commercially published. Further, the circulation of these documents, and access to them, is primarily restricted to scientists and researchers and much less to information specialists. Hence the need to provide bibliographic control, apply appropriate methodological and technical processing, and guarantee access to the distribution circuits by professionals in the area of library, archives and documentation studies.

Aims of the course:

- analyse grey literature as a product of scientific and technical documentation.
- examine the way grey literature circulates, how to locate and access it.
- study the processing, analysis, retrieval and dissemination of grey literature.
- establish a typology of the material.
- analyse the institutions which work in bibliographic control of grey literature.
- develop guidelines and definitions for policies for access to and retrieval of grey literature in Venezuela and Puerto Rico.

The course was organised over 17 weeks in 5 modules. The first three modules analysed different definitions and the typology of the material, and dealt with the theme of identifying and accessing grey literature in different environments: in universities, in scientific research establishments, and in industry. The analysis also covered electronic documents. For technical processing and databases, an analysis was made of the examples of NTIS, EAGLE and INIST.

The last two modules covered the analysis and conduct of a short study project of a real situation in Venezuela and Puerto Rico. For this purpose a series of visits were made to institutions - preferably to academic institutions, and to city halls in the case of Puerto Rico - which were likely to have grey literature in their collections, to observe how these documents were processed and distributed.

The result of the course was to generate a series of proposals to allow local information professionals to integrate the processing of this material and access to grey literature into their professional practice, for knowledge generation, not just from the perspective of difficulties in processing material regarded as 'ephemeral'.

In that way GL became something tangible, accessible, and a subject of discussion, because many questions arose when it was observed how grey literature was in fact absent from the collections of institutions reputed for the quality of their students' work.

- For example, access to theses: even in libraries where online access to a union catalogue was possible on NOTIS, it was observed that theses had not always been adequately processed nor even distinguished from other types of traditional documents such as monographs. Due to lack of analytic abstracts, information that would have been very relevant to research projects could not be retrieved.

- In the case of the University of Puerto Rico Library at Rio Piedras, it was noted that reports and proceedings were subject to much longer processing times than monographs or journals, from the date of acquisition.

The students carried out individual studies on their specific subjects. For example, in Caracas (Universidad Central de Venezuela) I had a student interested in developing a policy for collecting grey literature for the documentation centre of the milk products factory where he worked; and another student was interested in the problem of the obsolescence of grey literature in a specific collection in the social science documentation centre of UCV.

In San Juan I had a student who investigated the difficulties in accessing theses in the department of Hispanic Studies of the University of Puerto Rico [8]; and another who analysed the situation of grey literature (ephemera) in the library of the Planning and Budget Department of San Juan municipality [9].

2. RESULTING PROJECTS.

One immediate result of the course was that analysis of local circumstances impelled the development of proposals for control of grey literature in each country. In the case of Venezuela, a proposal was developed specifically for UCV: 'Strategies for the

collection of grey literature for scientific and humanistic knowledge in Venezuela"[10]. In the case of Puerto Rico, the students developed a proposal for the organisation of the Puerto Rican materials collection of the UPR University Library System [11].

The Venezuelan project.

The project was located in the Universidad Central de Venezuela. Its aim was to improve the availability of and access to grey literature in the humanities in the two university libraries: the central library and the library for postgraduate studies in history, geography, pyschology, literature and education. In order to carry out the project, it was proposed to make an inventory of grey literature in the humanities to gain quantitative and qualitative data. It was also proposed to develop methodological guidelines, and guidelines for two databases: one of ongoing research projects, and another of the papers and lectures of the researchers.

Finally, in integrating these humanities databases with other pre-existing databases in libraries specialising in social sciences, the intention was to create a nucleus of coordinacion to ensure follow-up of specialised grey literature in the social sciences and humanities.

The Puerto Rican project.

The aim of the Puerto Rican Materials Collection is to serve the university community, both at the Rio Piedras campus and through the Library System of the University of Puerto Rico, in its search for material concerning Puerto Rico, for information and research. The collection consists of works written by Puerto Ricans, and works about Puerto Rico wherever published. Among the collection are monographs, journals, official publications, theses, conference papers, and research reports. This wealth of documents covers the following branches of knowledge: philosophy, social sciences, languages, literature, natural sciences, music, art and history. 'Grey' documents, apart from theses, dissertations and official publications, were treated as ephemera. This meant that research reports and conference proceedings were treated in an unsystematic way, in the absence of any acquisitions policy or selection criteria.

The proposal emphasised the need to systematise each type of document as a separate category, and set out a collection development policy for each type. As far as theses were concerned, the proposal was to create a union catalogue, because the greatest problem for users was access to theses not all of which were processed (in fact, only 50% of theses on Hispanic Studies were processed).

4. LOOKING BACK.

What were the positive results of the course?

- First: it aroused an interest in grey literature that was not limited to the students following the course. I was asked to run workshops for other professionals in the university libraries of San Juan in Puerto Rico, who wanted to understand more practically what grey literature was. These workshops set a discussion going and provided elements of methodology for the processsing of material referred to as 'ephemeral'.

- Second: the focus on grey literature created its own reality: it could be seen that local information collected in reports, research studies and conference papers was poorly circulated, and that its circulation was even limited to a group of researchers. Specialised librarians did not have access to it, at least not until much later, meaning that information was lost.

- Third: the development of the course served to analyse the most frequent ways in which grey literature is processed in specialised libraries, and how it circulates. Quite simply, it is given a very low priority: processing of research reports and conference proceedings takes too long, and not all theses presented in all the university's teaching programmes are available in the union catalogue.

- Fourth: the course lead to concrete projects. For example, in the National Library of Venezuela, the heading "grey literature" was created in the collections, and a survey of all the Venezuelan grey literature in the Library was carried out. As a result, this material was no longer just put straight into vertical files but was processed. In the case of Puerto Rico, the project continues in the Library School (EGBCI), aiming to create a union catalogue of theses for the University of PR.

- Fifth: the course showed that the inclusion of practical workshops for different types of specialised libraries helped to understand the problem of grey literature in the collections. It showed how, due to lack of knowledge and lack of an internal policy for technical processing both in UCV and UPR, grey literature was not adequately processed and was delayed. When I realised this, it became obvious that short workshops were needed for the staff working in technical processing.

- Sixth: the course showed the need to explain what is covered by the concept of grey literature. I observed that the course in fact served two purposes: research into the subject under discussion, and updating of professional training. It also happened that the course lead to the inclusion of the subject of technical processing of grey literature in undergraduate programmes, linked to collection development.

- Seventh: the students requested that material be translated into Spanish: having to read material in English was a deterrent. Four texts in Spanish (about the use of theses and conference proceedings in Spain) aroused more interest: the students

commented to me that it was like reading about something unrelated to their environment. However, by reflecting on their own realities and visiting institutions, observing the state of collections, they grasped the subject and made it work for them.

5. FUTURE PLANS.

The plan is to teach the course again in July 1998 in the Escuela Interamericana de Bibliotecologia, at the University of Antioquia in Medellin, Colombia. Should this be confirmed, some changes would be made, not in the conception of the course but in its practical application. In this case, in parallel with the course, I would study the way in which organisations work with grey literature in Colombia, particularly Colciencias, and analyse the training needs on the basis of this professional experience.

In this way, I would seek to develop work related to a practical purpose, which could contribute to the creation of grey literature centres within the country, and in each region progressively.

However, I would do this with caution. For example, while I was working on the development of the course, I received offers. From the EGBCI in San Juan came the proposal to make a union catalogue of theses for the University of PR; but this did not get very far, due to lack of funds.

It is also clear that, with the modern use of electronic documents, there has been a change: we now speak more of **grey information**. However, in practice, use of the Internet in national (state) universities such as UCV or UPR is not great, neither by library professionals nor by students. Electronic mail is available in the universities but navigation of the Internet is developing only slowly.

It should be borne in mind that private universities in Latin America continue to be areas of modernity and information access, but only for restricted groups, professional circles who have access to the markets. These universities are generally not the places where the civil servants and decision-makers of the country are trained, those who are going to build the institutions of society.

Such persons are generally trained in the national universities. It is precisely these decision-makers that we need to work with, because they will decide on the information policies within which our libraries will have to work, they are responsible for the future of our libraries. This is where we need to introduce new notions of research.

6. CONCLUSION.

So a course taught in two countries of the Spanish Caribbean opened the door to a debate, encouraged professionals to include grey literature as a specific category of document to be processed in special collections, and seemed to point logically toward a follow-up activity.

Two possibilities could be: to run a seminar on grey literature in Latin America, and to do a survey; creating a working group with members in certain regions, because much local [regional] information is not considered when processing document collections.

It has been observed that this information remains in the offices of decision-makers or researchers without necessarily circulating to documentation centres and special libraries. The bibliographic control of this material is weak, which indicates that it is necessary to create regional centres in Latin America to put into practice a systematic collection development policy for grey literature - so that collection should not just be left to isolated projects.

Finally, I consider it important to spread information about grey literature to other cultural and linguistic regions, by a series of specialised seminars. In this way we could revitalise professional training from the ground up, and not leave it to chance discoveries when new professionals enter the world of work.

Notes:

[1] Foubert, C. The IDOC Documentation Handbook, A Guide to Appropiate Technology and Information Systems. Rome, IDOC, 1982.

[2] Revesz, B. et al. Piura: region y sociedad: derrotero bibliografico para el desarrollo. Cuzco, CBC, 1997.

[3] Hurtado Galvan, L. Desarrollo desde arriba y desde abajo: informacion, documentacion y comunicacion de las ONGs en America Latina. Cuzco, CBC, 1995.

[4] Maura, M., et al. "Sumario del encuentro de educadores latinoamericanos en el area de bibliotecologia y ciencia de la informacion" In: Reunion de Investigadores y Educadores de Iberoamerica y del Caribe en el area de bibliotecologia y ciencia de la informacion / comp. E. Ramirez. Mexico, CUIB, 1996: 344-357.

[5] Guevara, N. "Estudios de bibliotecologia y ciencia de la informacion en Venezuela". In: Reunion de Investigadores y Educadores de Iberoamerica y del Caribe en el area de bibliotecologia y ciencia de la informacion / comp. E. Ramirez. Mexico, CUIB, 1996: 340-343.

[6] Vigo, L. "Programas de bibliotecologia y ciencia de la informacion en Puerto Rico". In: Reunion de Investigadores y Educadores de Iberoamerica y del Caribe en el area de bibliotecologia y ciencia de la informacion / comp. E. Ramirez. Mexico, CUIB, 1996: 333-335.

[7] Moreno-Torres, R. "El acceso a la literatura gris: actas de congresos y tesis doctorales". In: Boletin Anabad 36 (4): 671-696, 1986; Lara Guitard, A. "La literatura gris como medio de comunicacion cientifica" In: Rev. Esp. Doc. Cient. 8 (2): 187-189, 1985; Curra, E. Estructuracion de un progrma de sistema experto para la literatura gris. Memoria de trabajo de investigacion realizado en la Universidad de California. Los Angeles, UCLA, 1990; Poblacion, D.A. "Literatura cinzenta ou nao convencional: um desafio a ser enfrentado". In: Ci.Inf. Brasilia, 21 (3): 243-246, set.-dec. 1992.

[8] Morales Arteaga, T. "El acceso a las tesis presentadas en el Departamento de estudios Hispanicos, Universidad de Puerto Rico. San Juan, UPR, 1996.

[9] Sanchez Diaz, M. "Analisis de la situacion de los miscelaneos en la biblioteca de planificacion y presupuesto del Municipio de San Juan. San Juan, UPR, 1996.

[10] Hurtado Galvan, L. Proyecto: estrategias de recuperacion de la literatura gris para el conocimiento cientifico y humanistico venezolano. Caracas, UCV, 1995.

[11] Morales Arteaga, et al. Propuesta de como organizar la literatura gris en la coleccion puertorriquena del sistema de bibliotecas de la Universidad de Puerto Rico. San Juan, UPR, 1996.

INTERNATIONAL GUIDE

TO PERSONS & ORGANISATIONS IN *Grey Literature*

Grey Literature - Grijze Literatuur
Letteratura Grigia - Litterature Grise
Graue Literatur - Gri Yayinlar
Literatura Grise - Literatura Cinzenta
Sive Literature - Sede Literatury

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CERIST	Centre of Scientific and Technical Information	Algeria
CIAO	Columbia International Affairs Online	USA
CNR	Consiglio Nazionale delle Ricerche, Biblioteca Centrale	Italy
CNR - ISRDS	Consiglio Nazionale delle Ricerche, Istituto di Studi sulla Ricerca e Documentazione Scientifica	Italy
CORDIS	Community Research & Development Information Service	Belgium
CPS - UNB	Centre for Property Studies, University of New Brunswick	Canada
CRL	The Center for Research Libraries	USA
CSU	California State University	USA
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EAGLE	European Association for Grey Literature Exploitation	Holland/HQ
EBSCO	Information Services Europe	Holland
➤	European Parliament Documentation and Library	Belgium
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IFLA	Int. Federation of Library Associations and Institutions	**Holland/HQ**
IFLA	Office for International Lending	**United Kingdom**
IISL	International Institute for the Sociology of Law	**Spain**
INIST	Institut de l'Information Scientifique et Technique	**France**
INRA	Institut National de la Recherche Agronomique	**France**
ISFOL-CDS	Centre for Specialised Documentation	**Italy**
IVIR	Instituut voor Informatierecht, University of Amsterdam	**Holland**
IZ	InformationsZentrum Sozialwissenschaften	**Germany**
JDC-LC	Japan Documentation Center, The Library of Congress	**USA**
JST	Japan Science and Technology Corporation	**Japan**
JST-CNRS	Japan Science and Technology Corporation, Paris Office	**France**
KUB	Tilburg University Library	**Holland**
LAL	Latvian Academic Library	**Latvia**
➤	Loughborough University Department of Information and Library Studies	**United Kingdom**
➤	Ministere de l'Education nationale et de la Formation professionelle	**Luxembourg**
NASA-LARC	Visual Imaging Branch, NASA Langley Research Center	**USA**
➤	National Library of Estonia	Estonia
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