1. INTRODUCTION

Librarianship is now at crossroads. The avalanche of document and information has posed serious problems to the traditional methods of organizing libraries and information centres. Actually, these methods are fast crumbling down. Now methods of handling documents and information have been thought out in the West and librarians in the United States are already in the dawn of the paperless society. In Japan, which has gone several steps further than the developed countries of the West, the home computer has become a normal feature. Probably, in the 21st century, there will be no need for large collections of books, nor for huge, imposing buildings to house such collections. It would also not be necessary to appoint a fleet of professional staff to look after such libraries. Everybody concerned – the librarians and the information scientists, the readers and the research workers – would have to stay at their homes and operate their computer terminals to supply the information required or to receive the information needed (Deshpande 1986).

Information scenario keeps changing with 'the development of national and global information infrastructure. The concept of Digital Library (DL) arose from the analogy with a place-based repository library containing an organized collection of print-on-paper and other physical artifacts combined with systems and services to facilitate physical, intellectual, and long-term access (Borgman 1996). DL is a distributed technology environment which reduces the creation, dissemination, manipulation, storage, integration, and reuse of information by individuals and groups (Borgman 1999). In USA, in 1994 the National Science Foundation (NSF), the Department of Defense Advanced Research Projects Agency (DARPA) and the National Aeronautics and Space Administration (NASA) launched a Digital Library Initiative (DLI) jointly. Some of the currently existing digital libraries are:

1. USA: Stanford Digital Library Technologies,
   http://www-diglib.stanford.edu/WP /WWW/
2. China: Peking University Digital Library
   http://162.105.138.23/tapian/tp.htm
3. India: Archives of Indian Labour
   http://www.indialabourarchives.org/
4. New Zealand: New Zealand Digital Library

http://nzdl.org

5. International: UNESCO Project
http://www.unesco.org/webworld/build_info/gct/bestpractices/anthologies.shtml

The components of the DLs include: digital objects, metadata, repositories and harvesting, rights management, indexing, resource discovery, searching and retrieving, linking, interfaces and interaction, architectures, and interconnections. DLs are developed in highly distributed environments (Sornil 2000).

Library objects are served to remote client processes, which will send information requests and receive results by employing varied communication protocols. Client processes will make diverse interfaces available to users. Repositories on the server side rely on advanced database management systems (DBMSs) for object storage, indexing, and selective retrieval.

There are so many terms related to the DL, which include multimedia database, information mining, information warehouse, information retrieval, on-line information repositories, electronic library, and wide area information services. A DL services an assemblage of digital computing, storage, and communications machinery together with the software needed to reproduce, emulate, and extend the services provided by conventional libraries based on paper and other material means of collecting, storing, cataloguing, finding, and disseminating information (Kilker and Gay 1998). Public, private, professional, school, commercial, and other kinds of libraries emphasise different services, different types of information, and different service styles.
A DL must accomplish all essential services of traditional libraries and also exploit digital storage, searching, and communication. In addition to delivering documents, DL services will involve all stages of the creative process, from reformatting files, to summarizing the daily news, editing collaborative works, and even helping to plan new ventures. Services will be customized to fit specific tasks, and personalized to fit individual organisations and users.

The initial emphasis was on the retrospective conversion of print-on-paper objects to digital objects. The vision of digital libraries is, 'Integration and use of computing, communications, and digital content on a global scale, combined with the increasing

possibility of cost effective digitization and convergence of formerly separate media types to create the conditions for new infrastructure/environments to support humans as individuals and organisations in distributed knowledge-based activities'. The DLs support individuals or organisations in a broad range of distributed knowledge based activities from electronic commerce to scientific collaboration. They support teaching and learning, especially in the context of distance or lifelong learning. Now the digital libraries are there at universities, publishers, government agencies and public libraries.

DLs can handle multimedia data, which can present information more effectively than print media and can be accessed easily and understood even by those who are illiterate. The following points illustrate the potential differences between traditional and digital libraries (Borgman, 1999, Kilker and Gay 1998):

- Traditional libraries are based upon centralised control and relatively few access locations; digital libraries can be distributed and ubiquitous
- Traditional libraries support one-way, loosely coupled (slow) interaction; digital libraries support two-way communication with tight" fast interaction
- Traditional libraries are based upon a model of one-way search: a consumer looking for an object; digital libraries support symmetric search: consumer looking for an object and the producer of the object looking for a consumer.
- In traditional libraries structured text queries (and some browsing) are used to aid intellectual access; in digital libraries complex interactions of query, navigation/browsing, and social filtering can be used
- Only a librarian may add to the collection of conventional library, because of the discipline essential to create a quality catalogue. In a digital library, cataloguing discipline and search restrictions to authorized data can be automatically enforced.

Digital Libraries (DLs) are an access to the collections of electronic documents over network. They serve the scientific community with large amount of electronic data and thereby increase the levels of education and literacy in the society. Software agents have been proved to be the best for the handling of distributed information. This paper surveys about the digital libraries and software agents and analyses the adoption of agents for various issues of distributed DLs (Kumar and Srinivas 2004).

Acquisition, Organization, Storage, and Retrieval of publications for making them available to member users were/are mandates of Library. The user of the library of the future need not be a person. The user may be another knowledge system or any intelligent agent with a need for knowledge. Library will have metamorphosis into a network of knowledge systems in which people and machines collaborate (Kalyane and Kalyane1992). Transition phase is in progress. To the statement: "In my view the library of the future will be an access point for information rather than a place of information storage." many British scientists agreed than disagreed (The Royal Society, the British library, and the Association of Learned and Professional Society Publishers 1993). "Virtual Library" model demands continuous user training/assistance programme.

The prospects for development after 1960 were foreseen (Pekelis 1984) as follows:

Year		Forecasting
1970	-	Translating machines
2000	-	Artificial intelligence, Global library
2020	-	Logical languages
2030	-	Robots, Contacts with extraterrestrials
2050	-	Memory playback
2060	-	Mechanical educator
2080	-	Machine intelligence exceed man's
2090	-	World brain

1.1 Personal correspondence

Personal correspondence was the predominant means of scientific communications until the middle of the 17th century (Kalyane and Kalyane 1994).

1.2 Preprints

'Preprint', or 'meeting paper', is the term usually applied to papers made available before or at the meetings and conference where they are presented by their authors. The practice is especially common in the United States, and many large American technical and engineering societies issue preprints in advance of their meetings, where each paper is usually identified by a serial code. After the meetings have taken place, the papers are reviewed and a certain proportion selected for inclusion in the society's permanent records. The remainder are simply listed, and although they are not intended to be a part of the permanent literature, they are nevertheless quoted and asked for. A further

complication is that not all the papers announced and assigned preprint numbers are actually issued; some may be read and then withdrawn, some never written at all.

Preprints ought not to be confused with reports, since quite clearly they are advance copies of journal or transaction papers, but because they carry numbers which resemble in some respects report numbers, and because, too, they have a pamphlet format, many users of the reports literature tend to regard them as reports as well. Abstracting and indexing services are well aware of the distinction, and major services such as Engineering Index treat them as part of the conventional serial literature (Auger 1975).

Todorov; Kralevska; and Stanev (1978): The preprint, a quasi-published scientific document upon which traditional editorial work has not been carried out, is the most common means of speeding information on ideas, projects and intermediate results. It is produced by offset printing, the cheapest and quickest method and issued in a form previously approved by experts, who are always searching for more rational production methods. Recently some organizations have issued preprints on microfiche.

Martin (1978): A project of cross-referencing reprint and preprint series distributed by observatories to the collection of the National Radio Astronomy Observatory is described.

Martin (1979): Describes experience at the National Radio Astronomy Observatory Library, Charlottesville, Virginia, with an current project of cross-referencing reprint and preprint series. This material is distributed by observatories and seems to be valuable to the users. Cross-referencing to the journal collection allows the library to maintain the intent of identifying works with a particular institutions and at the same time allows for space-savings and simplification of the collection by keeping a particular article at one location only.

Valas (1983): The distribution of preprints was first used as a publication method for elementary particle scientists in the mid 60s. Describes this method of information dissemination, its development and future trends.

Shtern (1984): Microfiche catalogues are becoming increasingly popular but their efficient production really requires a computerised cataloguing system. The computer centre library of the Siberian branch of the Academy of Sciences has produced an experimental microfiche catalogue of its preprint holdings. In this way researchers working on the same problem but geographically separated can easily exchange summaries of their work. Such semi-official documentation has acquired an important role but requires new approaches to cataloguing. This particular catalogue is produced on a BESM-6 computer using BOYaZ-6 software which condenses 4,000 bibliographical descriptions on to a single microfiche.

Iketani; Akiya; Chiba; and Kuribayashi (1987): A questionnaire was sent out by JICST (Japan Information Center for Science and Technology) to acquire information on preprints and proceedings produced by Japan's academic and learned societies and associations. The survey covered 1,112 organisations and societies selected from 'Zenkoku gakukyokai soran 56 nendo' (Directory of learned societies in Japan, 1981) and '85 igakkai soran' (Directory of medical science societies in Japan, 1985). The questionnaire aimed to identify the volume of preprints and proceedings produced, bibliographic data on them and their availability. 844 replies were received and these showed that 670 organisations, 79.4% of respondents, published preprints or proceedings with an average of 149 items in each publication. There are likely to be even more publications of this nature in future.

Andreeva (1988): Discusses the acquisition of preprints as practised by the Academy of Sciences library. The preprints in question are usually produced by research institutions belonging to the academy. The lack of organisation detected in this area arises from a lack of clear definition of preprints. The number of preprint producers is growing as well as the demand for them and therefore it is necessary to bring order into these proceedings and ensure accurate information about existence and location of preprints.

1.3 Preprints in Electronic era

Because of advanced Information Technology, today, one can send electronic mail, participate in a computer-based conference, dispatch an article to a print journal, or deposit in E-Print archive simultaneously. Perhaps same information may be involved

in all three activities. Indeed, a turning point for progressing back to the pre-journal days but empowered to accelerate global broadcast. Motivations for this rush are to:
make best use of the available technology,
get priority of documentation date,
reach appropriate target audience,
increase probability of hits,
enhance chances of getting cited quickly,
document cited-ness as prestige/visibility index,
upgrade presentation quality and enrich knowledge continuously (by depositing revised versions), and
ensure intact digital preservation for currency as well as posterity.

1.4 Electronic Communications

Binder (1983): It is hard to forecast the speed and direction of electronic publishing progress. The non-commercial sector is suffering financial problems, so must learn to combine commercial and non-commercial elements. A periodical's scientific and technical qualities, speed of editing, production and marketing are more important than the number of pages. Readers expect much from electronic periodicals, where CD-ROM turned library users into network users, electronic periodicals are turning libraries and end-users into invisible library' clients.

Cruz; Garcia; and Lopez (1995): Paper presented at the GL'95, the Second International Conference on Grey Literature. Lists the characteristics of preprints of scientific articles that qualify them as grey literature and notes the way in which advances in electronic publishing, such as the Internet and World Wide Web (WWW) are modifying the traditional role of preprints in the process of scientific communication. Concludes that electronic networks have radically changed the conventional preprint distribution, shortening to minutes the time a working paper needs to go from the author to the user.

Lim (1996): Argues that preprint servers, which were originally designed as an informal publishing mechanism for the distribution of preprints, contain many of the characteristics of traditional scholarly publishing, and could conceivably serve as a new

model of scholarly publishing in the electronic environment. Original abstract-amended.

Kreitz; Addis; Galic; and Johnson (1997): Discusses how control of the grey literature in high energy physics preprints developed through a collaborative effort of librarians and physicists. Highlights the critical steps in the development process and describes one model of a rapidly evolving virtual library for high energy physics information. In conclusion, extends this physics model to other areas of grey literature management.

Canessa (1997): Discusses the implementation of the International Centre for Theoretical Physics (ICTP) Scientific Preprints Repository Online and on their new World Wide Web (WWW) service for one shot preprint searches. It is possible to retrieve full text preprint articles in TeX based (.TEX), PostScript (.PS) and Adobe Portable Document (.PDF) formats through the ICTP WWW Web server (URL http://www.ictp.trieste.it). This new feature offers fast and complete availability of the results of scientific research carried out at ICTP to the whole of the scientific community. Since April 1996, ICTP has offered an alternative experimental WWW service for a global lookup search throughout most popular online scientific preprint repositories in the World (URL http://www.ictp.trieste.it/indexes/preprints.html).

Youngen (1998): The number of physics and astronomy preprints (manuscripts intended for publication but circulated for peer comment prior to submission) available electronically has increased dramatically over the past 5 years and Internet accessible preprint Web servers at the Stanford Linear Accelerator Laboratory (SLAC) and the Los Alamos National Laboratory (LANL) provide unrestricted access to citations and full text of many of these papers long before they appear in print. Includes data for periodicals ranked by number of citations to preprints and electronic preprints (e-prints). Identifies the growing importance of e-prints in the published literature and addresses areas of concern regarding their future role in scientific communication, including: inclusion of e-prints in abstracting and indexing services; connecting electronic periodicals with e- prints; guidelines for withdrawal and revision of e-prints; and maintaining the integrity of the e-print servers.

Karlsson; and Krichel (1999): Paper presented at the conference: Electronic publishing '99: redefining the information chain - new ways and voices, May 1999. Electronic dissemination of Economics working papers began in 1993 with the start of the Working Papers in Economics (WoPEc) project. By March 1999 this single archive had grown into the Research Papers in Economics (RePEc) network of over 60 archives holding over 13,000 downloadable papers and over 50,000 descriptions of offline papers, as well as data about over 4,000 academic Economics departments and research institutes. An example of a national initiative within RePEc is Swedish Working Papers in Economics (S-WoPEc) at (http://www.swopec.hhs.se/). Describes the historical background before the foundation of RePEc; discusses some important aspects of RePEc, such as its structure and user services; describes the features of S-WoPEc; and outlines the benefits of participating in RePEc.

Smith (2000): The Physical Review periodicals, particularly Physical Review D (PRD) on particle and gravitational physics, have been near the centre of a revolution in electronic publishing caused by the Los Alamos eprint archive, which began posting papers in theoretical particle physics nearly eight years ago. Describes how the periodicals, particularly PRD, have responded and thrived with this revolution in scientific communication and how things are expected to continue to develop in the future.

Tomaiuolo; and Packer (2000): Reviews the growth and development of the preprint movement, looking at its history, usage and implementation on preprint servers. Preprint servers are vital for finding information in the sciences, humanities and social sciences, where they not only facilitate the location of information to answer questions, but also indicate a critical emerging trend toward rapid research communication in the electronic environment. Consulting with peers has traditionally dominated the way researchers gather information. Electronic preprints allow access to information without the time lag inherent in traditional publishing. The immediacy of electronic preprint dissemination may also foster a richer collegial interchange. Considers also how peer review and traditional publishing fit into the e-print world. A checklist of preprint servers is also provided (URL http://www.infotoday.com/searcher/oct00/tomaiuoloadpacker.htm).

Cruz; and Krichel (2000): Cataloguing resources that assist in educating a domain specific community can require a finer level of granularity than objects that are to be accessed by a more general domain community and can become a costly process. One possible approach towards cataloguing such resources is to arrange for a community of providers involved in cataloguing the materials that they provide. Introduces RePEc (http://netec.wust.edu/RePEc), initially standing for Research Papers in Economics, as an example for such an approach. RePEc is mainly a catalogue of research papers in Economics and is based on a set of over 80 archives, which all work independently but are interoperable. Describes the method used to evaluate the success in providing data of reasonable quality through a decentralized approach.

Town (2001): The continuing debate concerning the electronic archiving and distribution of preprints of scientific articles and its status in regard to traditional, commercial publishing is illustrated with particular reference to ChemWeb's Chemistry Preprint Server (CPS). Describes the example of a chemist who simultaneously submitted a paper to CPS and to the American Chemical Society's Journal of Organic Compounds (JOC), where the latter insisted that the author withdrew the paper from the CPS on pain of being prevented from publishing again in JOC. It is argued that such action is not necessary and that there is and always will be room for an unofficial method that enables scientists to communicate with each other and share ideas.

Brown (2001) : Examines the philosophies, policies and practices of top tier physics and astronomy journals regarding eprints from the Los Alamos eprint archive, arXiv.org. Finds that, even though the use of the traditional literature has not changed since arXiv.org began in 1991 and the policies concerning eprint citation and publication were inconsistent, the number of citations (35,928) and citations rates (34.1 per cent) to 12 arXiv.org archives were large and increasing. Concludes that arXiv.org eprints have evolved into an important facet of the scholarly communication of physicists and astronomers.

Till (2001): Although there was an early experiment in the 1960s with the central distribution of paper preprints of periodicals in the biomedical sciences, these sciences have not been early adopters of electronic preprint servers (where servers are defined as a computer or software used to control a central repository of data that can be

downloaded and manipulated in some way by a users). Describes some barriers to the development of a 'preprint culture' in the biomedical sciences. Multiple factors that, from the 1960s,
fostered the transition from a paper-based preprint culture in high energy physics to an electronic one are also described. A new revolution in scientific publishing, in which journals come to be regarded as an overlay on electronic preprint databases, will probably overtake some areas of research much more quickly than others.

Kaji (2001): The Japanese database JMEDICINE now has a related full text preprints section of articles from 156 Japanese medical and pharmaceutical academic societies, searchable by keywords, authors, and society name. The current participating societies and their publications are listed. The articles are available as PDF files. The aim is to include material from 200 academic societies. Future developments may include similar projects in other fields.
Zelman (2002): explained the communicative dynamics concerns of the SOEIS (Self Organization of the European Information Society) as the internal and external.

Internal: Print and electronic writing differed in their architectural make-up; the SOEIS print communications proved to be heavily codified and aggregative, whereas electronic communications appeared resistant to codification.
Print and electronic keyword distributions were different in their
respective emphases. The SOEIS print communications were shown to bias function oriented words, which were shown to increase over the dataset, in contrast to the electronic communications which were shown to have a decreasing occurrence of function words in favour of words which contributed to the activity of the SOEIS project. The email communications were found to supplement project activity.

External: SOEIS publications were shown to bias Policy and Informatics oriented journals as evidenced by the strong predominance of *Scientometrics* and *Research Policy*. The SOEIS group was shown to cite *Research Policy* articles in an effort to authenticate the policy relevance of scientometric research; the group was in turn cited by journals published in *Scientometrics* thereby revealing a one way publication flow.
SOEIS mailing list environment revealed that email does foster unique network relations between researchers, but that email serves to supplement the print medium.

The project mailing list EuroCon-Knowflow was found to behave like field level lists, as revealed by its high level of mail activity and thread participation.

1.5 Response of Library professionals

"Scholarly communication has been described as comprising four essential components: **Registration** – establishing the intellectual priority of an idea, concept, or research; **Certification** – certifying the quality of the research and/or the validity of the claimed finding; **Awareness** – ensuring the dissemination and accessibility of research, providing a means by which researchers can become aware of new research; and **Archiving** – preserving the intellectual heritage for future use."
In traditional scientific publishing model, all four functions were fulfilled by scientific journal. Each future model will also have to ensure fulfillment of these functions, but it is already predictable that an "deconstructed scholarly publishing model" will take place, and particular functions will be carried out by different instances. Parallel with alternative publishing models, numerous initiatives and projects have appeared that aim to: accent dissatisfaction with existing publishing models, anticipate future development and accelerate it (SPARC, Open Archive Initiative, Public Library of Science, Budapest Open Access Initiative, RoMEO, FIGARO). Common motive of all these initiatives can be expressed by the phrase: "Returning scientific publishing to scientist".

In most of the mentioned projects, members of librarian community are taking leading role. Also, by most of those initiatives, libraries are recognised as key actors in the process of "returning science to scientists". How can libraries contribute? What are librarians' responsibilities? First of all, librarians in scientific libraries should get acquainted with scientists' information seeking and publishing behaviour, their needs as well as their prejudices and inhibitions. Only then they can become their advisors and advocates of open access to information. Finally, they should activate their skills and knowledge in development of new models of scientific communication and publishing . Melinščak Zlodi, and Pažur (2003)

1.6 Survival during Transition Flux

As long as printed books on library shelves and journals titles in the racks will exist, librarians will continue to exist. You will have books on shelves in 21st century also because you will still need to possess much of the materials you are holding now (Kalyane and Kalyane 1992).

Information sources are many and increasing exponentially and the access mechanism are also diversified. Electronic sources have come to stay as a storage and dissemination media. As we approach 21st century, the digital medium will increasingly become the medium of choice for information seeking pattern by the society at large. In the Indian context, it is not an utopian concept. It will certainly gain sufficient momentum in the near future and slowly substitute to a large extent the print based information sources (Babu 2004).

In order to cope-up-with the change Librarians/Information professional/Information technologist, etc. need to do research and exchange their views, experiences, etc. and learn from each other continuously and upgrade skills. Thus, they can not survive without doing research themselves. They have to sustain the flux from conservers/organizers of knowledge to facilitators/educators/guide to users. The purpose of classifying information remains the same in the 21st century as in the 20th century-assisting users in locating relevant information (Oyler 2002).

So current scenario is the emergence of the **Research in Computer, Library and Information Science** (RCLIS). It may be interesting to know how this group stands as a community of research communicators. Hence, deposits at the site eprints.rclis.org which is a recent phenomena in E-LIS voluntary efforts was considered for present study.

Before 19th century the treasury of knowledge was under the control of "**Religious Scholars**". The exponential growth of knowledge during 19th and 20th century necessitated the group responsibility, which was transferred to the intermediaries like librarians, curators, editors, publishers of primary, secondary and tertiary sources of information, and many others. The last decade of 20th century was a transition shock of digital era. No doubt 21st century belongs to digital era. Now, librarians/information preservation professionals too are struggling with methods of digital preservation. In

this process Open Access Initiatives and the Live E-Print Archives will dominate and will be characterized by the digital linking and global exposure, which will be under the control of "**Computer Technology Scholars**". It is a turning point of control of knowledge from: Scholars to intermediaries and back to Scholars.

Present study merely provides a snapshot.

2. STATEMENT OF THE PROBLEM

2.1 Rational, Significance, or Need for the Study

Can the E-Print Archives emerge as a free channel for free flow of Scholarly Communications? Does it have significance for global participation in exchange of knowledge? What are the types of documents shared? What are the contents of the documents archived? These questions need to be answered. Hence, justifying the urgent need for the study.

2.2 Theoretical Framework for the Proposed Study

The birth of digital depository aiming at free access to anyone, having the Internet connection, in itself is great advancement for global professionalism. Time series study can highlight trends in growth of depository. Strengths and weaknesses of deposited areas of knowledge can be identified.

The general notion is that "anything free is worthless". Does it hold good in 21st Century? Or does it justify that: "the idea is so practical and beneficial that only by sharing it, the prestige and credibility of idea generators enhances, as long as it is acknowledged." More the number of users of the research product the cost of research inputs decrease. This theoretical framework might justify present study.

2.3 Statement of the problem

Nothing is known about the characteristics of the E-Print Archives of LIS. Hence present study is historical, metadata analysis, through an exploratory approach.

2.4 Elements of the problem

Every deposit in the archive is an element of the study. Metadata contents of each element need to be harvested and explored including: Title, Author(s), Abstract (English only), Keyword(s)/Key-phrase(s), Subjects, Date of deposit, Publication Date of the document (Only in case of post-prints), Document type, and Published Source for post-prints and in-press documents.

2.5 Delimitation and limitations of the study

Date of metadata harvesting was fixed and limited to all deposits approved up to 7th July 2004.

Present study has delimited itself to:

- Author(s)
- Abstract (English only)
- Year of deposit submitted
- Year of publication of the submitted documents as post publication
- Document type
- Source used prior to deposit, intended source to be used, or in-press source
- Keywords/Key-phrases

2.5.1 Definition of terms

In 1998, Joint Information Systems Committee (JISC)/Publishers Association (PA) published a set of Guidelines (Pedley 2003) for Fare Dealing in an Electronic Environment (Available at: www.ukoln.ac.uk/services/elib/papers/pa.) These Guidelines were intended specially for the higher education center. The agreement contents the following definitions:

- **Electronic publication:** Publication created in electronic format or originally in paper form and converted under copyright law.
- **Part:** One article from a journal issue, one chapter from a book, or 10% of other works.
- **Issue:** Collection of articles issued at the same time under same issue number.

Channels of communication are the sources chosen by the author to communicate research.

Collaboration coefficient is the ratio of the number of collaborative papers to the total number of papers published during a fixed period of time.

Core collaborators are those authors who have made substantial contribution (in terms of the number of papers) in association with the principal author.

Principal author is the one common author among the authors forming a collaborative group in byline of all publications.

Productivity is the measure of the number of publications brought out by the author. Productivity coefficient is the ratio of the productivity age (corresponding to the 50 percentile productivity) to the total productivity life.

3. TARGET AUDIENCE

Target individual and group of audience for present study are:

administrators of library and information science establishments;

biographers of library and information professionals;

computer and information technology managers;

documentalists;

e-prints archives managers;

faculty responsible for framing syllabus of library and information science course;

gatekeepers of information;

historians of library science;

information scientists;

journal editors of library and information science publications;

knowledge managers;

library and information science professionals;

manpower developers in library and information science;

news group of library and information science;

open archives initiative systems managers;

policy makers of library and information science;

quality control of R&D in library and information science;

research and development managers;

scientometricians;

teachers of library and information science;

users of library and information science literature;

value additions to the library and information science;

web designers;

x: any one interested in Research in Computer Library and Information Science, and Information Technology;

young library and information scientists;

zero-budget self-archiving-authors; etc.

4. REVIEW OF LITERATURE

The idea to bring in one place, the essence of knowledge generated by all human beings on earth, was mooted by the great H. G. Wells, in the *World Brain: The Idea of a Permanent World* Encyclopaedia, as documented in Encyclopedie Francaise, Agust 1937 (Carr 2001, Encyclopaedia Britanica 1980). The theme being "Let knowledge grow from more to more and thus be human life enriched." He expressed that the encyclopaedia should not be " a miscellany, but a concentration, a clarification and a synthesis."

When Louis Shores became editor in chief of *Collier's Encyclopedia* in 1962, he said that he considered the encyclopaedia to the " one of the few generalizing influences in a world of over-specialization. It serves to recall that knowledge has unity."

4.1 Theme

"Let knowledge come to us from all over the universe."

4.2 Preprint to E-Print

Lim (1996) defines preprints as manuscripts, which may fall into one or more of the three categories:

- that have been reviewed and accepted for publication,
- that have been submitted for publication but for which a decision to publish has not been made, and
- that are intended for publication but are being circulated among peers for comment prior to being submitted for publication.

Of particular interest from the perspective of electronic preprints are those preprints that are intended for publication, and are self-archived by their authors either prior to, or after, acceptance for publication. However, 'e-print' (or 'eprint') can be defined in other

ways. Here, the focus will be on 'e-preprints', with a particular emphasis on those that have been self-archived by their authors.

The name derives from the original meaning: a preprint (pre-published article) in electronic form. 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. Here it means any electronic (not necessarily printable), research-related information provided by the author.

Electronic communication provides a potential solution, which enhances speed and accessibility while adding value in a number of ways, although its economics remains unclear. What is certain is that a new pattern for the communication of scientific information will require changes in the pattern of behaviour of all those involved; the author and his or her funding agencies, the facilitators such as publishers and librarians and the end user (Elliott 2003).

Paul Ginsparg, a physicist at the Los Alamos National Laboratory (LANL), developed the first preprint archive in August 1991. Originally dedicated to papers in high-energy theoretical physics, the “arXiv.org e-Print archive” at http://www.arxiv.org/ took several months to attract 1,000 users; presently it reports from 35,000 to 150,000 visits per day (http://www.eprints.org/results/report.html). Professional societies, government sites, and universities usually provide preprint services.

Particular questions that were asked in the early stages of the project were:

- Why do authors use the archive?
- Do researchers archive or use the archive more than others?
- At what point does an author decide to archive a draft?
- Do authors cite pre-prints, published post-prints, or both, and under what conditions?
- When an author cites a pre-print, do they update the citation when the cited paper is revised or published?
- If a paper is eventually accepted by a journal, does the author update the text of the paper or just the reference information?
- What are the authors' practices in archiving successive drafts?

- What are the authors' practices in citing successive drafts?
- What is the relationship between the impact factor of an author and download frequency and other online performance indicators and practices?

4.3 Advantages of E-Prints

A decade ago scholarly communication involved mail, fax, or more recently, FTP, and electronic mail. While traditional production and publication of documents requires a significant investment of time, materials, and money, placing a preprint or e-print on the World Wide Web involves no printing costs and practically no distribution costs. Electronic communication has created new ways to distribute such results and is forcing researchers and publishers to reassess the old procedures and consider new possibilities as we learn to use the Internet. Now, not only can authors easily disseminate their results, but also networked readers can have cheap, fast access to more scientific literature and have it in a form that facilitates its use in their own research (Bachrach et al 1998).

Scholarly communication converges on a stable set of electronic forums, such as "pre-print" servers, discussion lists, and electronic journals. A second common argument is that the variety of e-media initiatives reflects a creative period in scientific communication, and this, in itself, is a good thing (Kling and McKim 2000).

With on-line archives (both preprints and post-prints), all papers can be located by anyone quickly and easily -- and at no cost. Authors can put draft copies and successive updates up for public view, until the final, peer-reviewed (published) version appears. Users can follow the research through all of its successive stages from pre-prints through to the post-prints.

The Internet is a boon to the scientific community, students, and the public. Anyone can share information, ideas, and events with others. Electronic preprints need not simply represent what would appear in print journals. E-prints may offer numerous value-added elements, including audio and video, as well as linked references to other documents.

E-print archives services are very formal mode of communication in which each entry is archived and indexed for retrieval at later times. Usenet newsgroups and bulletin boards, represent an informal mode of communication, more akin to ordinary

conversation, with un-indexed entries that typically disappear after a short time (Ginsparg 1996). The time elapsed for getting comments and suggestions from experts working in the same area of work has been drastically reduced. Aim of Libraries will not be to have up-to-date information but up-to-the-minute information (Jones, 1991). As libraries evolve in the changing electronic revolution, they can continue to have an important role in supporting research (Luce 2003). The peer-review process at this e-print age is depicted in Figure 4.1 and Interactions for scholarly communications in E-Print age shown in Figure 4.2.

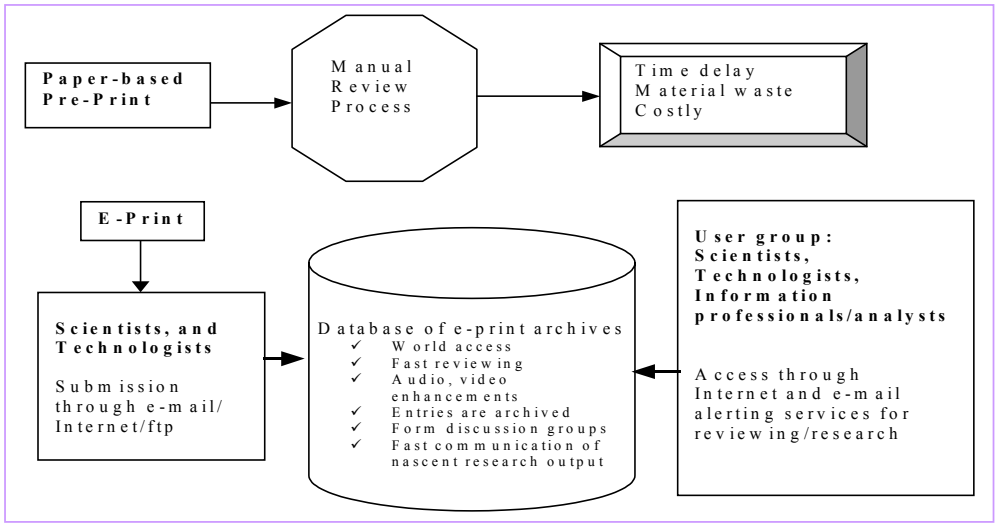

Fig. 4.1: Comparative Review Process of scholarly communications in Preprint and E-Print age

Discussion group interaction has often led to immediate reposting of reworked preprints with acknowledgements to individuals who have offered comments and criticism on the original preprints (Boyce 2000). The interactions are depicted in Figure 4.2

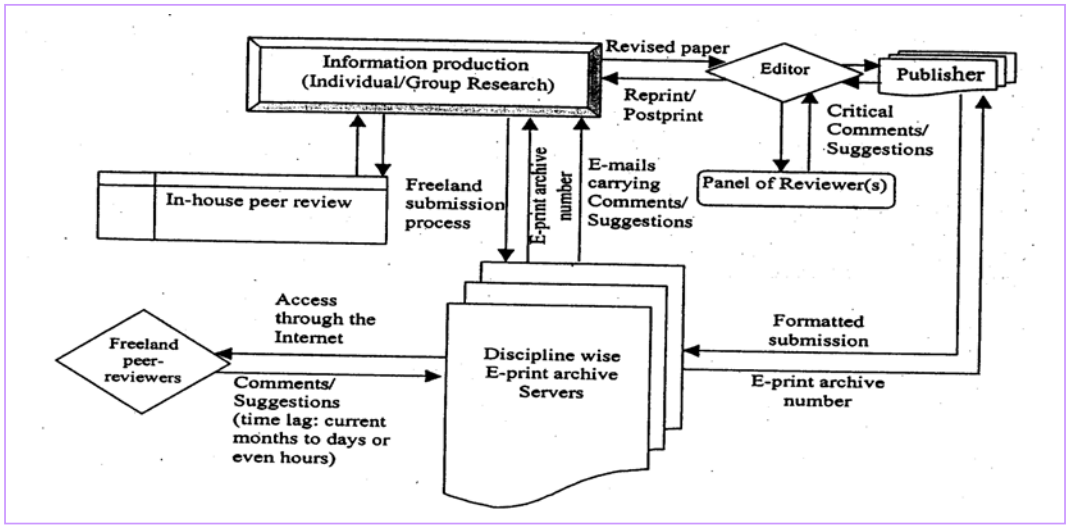

Fig. 4.2: Interactions for scholarly communications in E-Print age

4.4 Discipline-wise E-Print archives services

Disciplines such as astronomy, chemistry, computer science, mathematics, and physics have taken the lead in preprint distribution. Perhaps because scientists and researchers in these fields possessed the first high-level computers, preprint servers became available and then prevalent in these disciplines. Fields in the humanities and social sciences have recently begun following the trend, but still lag significantly behind in terms of server repositories and papers.

Indeed, for graphically dependent sciences, preprint publication on the Web is preferable to paper journals because of the possibilities for inclusion of audio and video and other multi-dimensional intense graphics. Electronic preprints do not represent the only example of the technological impact of the greater efficiency and storage capacity of digital media. Glimpses of popular discipline based e-print archive services with the name of the service and started year (if known) are given in the following list.

4.4.1 Physics

http://xxx.lanl.gov/ (LANL's; 1991)
http://preprints.cern.ch/ (CERN Document Server: Preprints; 1994)
http://www-slac.slac.stanford.edu/find/spires.html (SLAC SPIRES-HEP; 1994)
http://publish.aps.org/eprint (American Physical Society E-Prints; 1996

4.4.2 Physics, materials, and chemistry, portions of biology, environmental sciences and nuclear medicine

http://www.osti.gov/preprint (PrePrint Network Energy)

4.4.3 Computer science

http://www.ncstrl.org/ (Networked Computer Science Technical Reference Library (NCSTRL))

4.4.4 Chemistry

http://www.chemweb.com (ChemWeb; 2000)

http://www.chem.brown.edu/chem-ph.html (Chemical Physics Preprint Database; 1996)

4.4.5 Mathematics

http://www.msri.org/publications/preprints (MSRI; 2001)

http://www.ams.org/preprints (Mathematics E-Math)

4.4.6 Topology

http://at.yorku.ca/topology/preprint.htm (Topology Atlas Preprints; 1995)

4.4.7 Psychology, anthropology, philosophy, and linguistics

http://cogprints.soton.ac.uk (CogPrints; 1997)

4.4.8 Human geneticists and molecular biology

http://www.informatik.uni-rostock.de/HUM-MOLGEN/ (HUM-MOLGEN; 1998)

4.4.9 Clinical medicine and health

http://clinmed.netprints.org/ (Clinmed Netprints; 1999)

4.4.10 Economics

http://netec.mcc.ac.uk/WoPEc.html (WoPEc; 1999)

4.4.11 European-integration studies

http://eiop.or.at/erpa/ (Archives of European integration; 1998)

4.4.12 Social Science

http://www.ssrn.com/ (Social Science Research Network)

4.4.13 Theoretical Ecology

http://www.nceas.ucsb.edu:8504/esa/ppr/ppr.Query (Theoretical Ecology Preprint Database)

Although some might consider tracking preprints to be the proper responsibility of indexing and abstracting services, for the foreseeable future, Web searching will remain the primary strategy for locating these reports. However, some indexing and abstracting services have finally recognized the value of tracking preprints.

CERN Document Server (CDS) at http://weblib.cern.ch/Home/, One-Shot World-Wide Preprints Search at http://www.ictp.trieste.it/indexes/preprints.html etc. allows category searching for various disciplines (Tomaiuolo 2000).

4.5 Open Archives Initiative (OAI)

In October, 1999, a meeting was held in Santa Fe, New Mexico, where participants included librarians, publishers, and computer scientists. The unifying goal was the establishment of a universal preprint archive. Laying the foundation for the resolution of technical challenges such as archive maintenance, accessibility, and interoperability, the project was called the "Open Archives Initiative" [Van de Sompel and Carl, 2000]. The Open Archives Initiative activities centered at Cornell University, develops and promotes interoperability standards that aim to facilitate the efficient dissemination of content.

Samyuktha (2004) has discussed the changing scenario of Open Access Initiatives with special reference to India.

4.6 Productivity Analysis of E-Print archives

Already a few studies were initiated on E-Prints (Prakasan et. al. 2003a, Prakasan et. al. 2003b, Prakasan et. al. 2004a)

4.6.1 Growth of physics e-print archives:

A near linear and steady growth in the number of physics e-print archives was observed. Among the total of 7770 e-print archives considered, 75% of them were added during 1999-2002. Research category-wise chronological distribution of physics

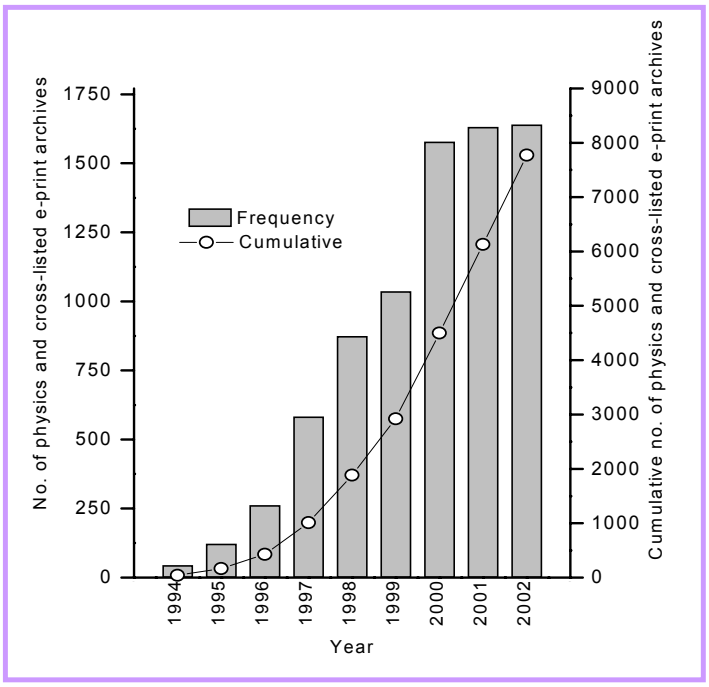

Fig. 4.3: Year-wise frequency and growth of physics e-print archives

e-print archives is presented in Figure 4.3 depicts the growth pattern of physics e-print archives. The growth pattern of six cross-listed subject categories is depicted in Figure 4.4. All of the subject categories have shown a steady and positive growth rate except for Chemical Physics. During the period 1996-1997, there is a rapid growth in the number of e-print archives for 'Quantum Physics' and 'High Energy Physics-Phenomenology'.

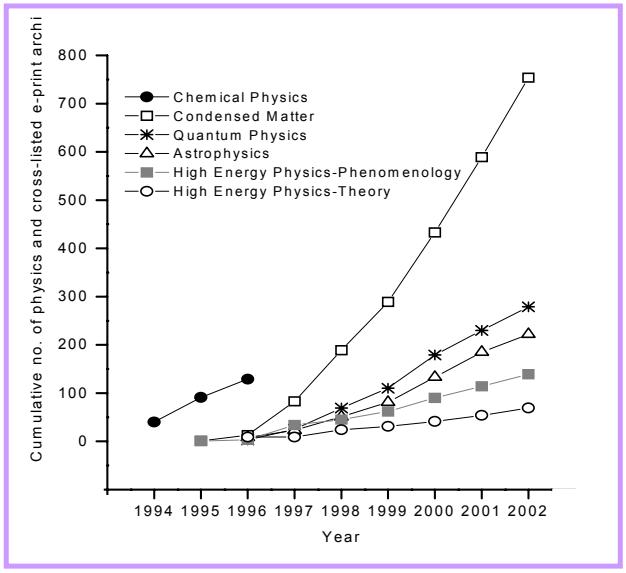

Figure 4.4: Growth of top most six categories of cross-listed e-print archives

4.6.2 Prominent authors of physics e-print archives:

Total authors observed in the bylines of the 7770 e-print archives were 12331. Number of authors having only one e-print to their credit was 8898. Linear curve in log-log scale for the Lotka's Law (Potter 1981, Kalyane and Sen 1995, Gupta 1996, Youngen 1998, Deokattey 2001) for the observed, expected (α = 2), and modified (α = 2.3) values are depicted in Figure 4.5.

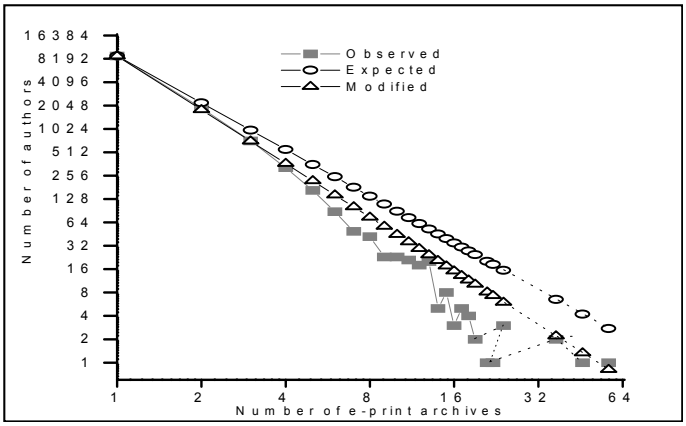

Fig. 4.5: Author productivity in physics and cross-listed e-print archives (1994-2002) observed, expected (α=2) as per Lotka's Law, and modified Lotka's Law (α=2.3) presented in log-log scale

Physicists are always one step forward in accepting new technological opportunities and challenges. Contributions of individual physicists from India and Australia are high. B.G. Sidharth of Centre for Applicable Mathematics & Computer Sciences, B. M. Birla Science Centre, Hyderabad (India) has contributed 57 items to the physics e-print archives.

4.6.3 Resubmission of physics e-print archives to conference or journal:

It is not necessarily certain that the preprints will be published, and the type of publication in which they might appear may vary greatly. Some might appear in highly respected research journals, while others exist only as internal technical reports of the research centre. Some preprints never appear in any form other than a preprint. The goal of the preprint is to quickly disseminate research information, avoiding the long publication delay commonly associated with refereed journals (Deokattey 2001)

The analysis of the 'Journal-ref:' field has given an idea of how many e-print archives holdings have the information about the source in which these archives are formally

published. Among the 7770 item studied 2993 (38.51%) possess details of the source in which they are published. The analysis of the sources reveals that physicists who are contributing to e-print archives preferentially publish their papers in e-Conferences.

The five core journals with Impact Factors (*Journal Citation Reports*-2001) publishing 1168 articles in the first zone are: *Physical Review Letters* (6.668), *Physical Review A* (2.81), *Physical Review E* (2.235), *Nuclear Instruments and Methods A* (1.26), *Journal of Chemical Physics* (3.147). Growth pattern of the papers in these highly preferred journals are presented in Figure 4.6 Hence, a library of an R&D institution where researchers are interested in physics related domains should subscribe to these five journals at least.

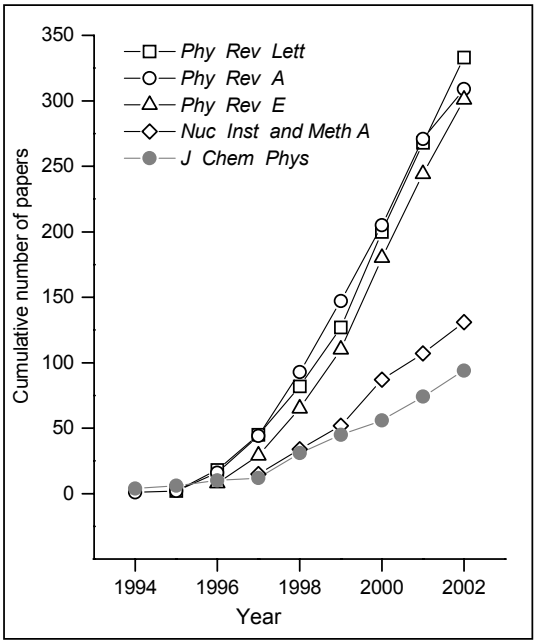

Fig. 4.6: Cumulative number of papers in highly preferred journals publishing physics and cross-listed e-print archives (1994-2002)

4.6.4 Implications of the e-print archives

There is a clear correlation between the number of times an article is cited and the probability that the article is online (Allen 1991). A study was conducted on the citations in the *Science Citation Index* (1992-2002) to the e-print archives of Los Alamos National Laboratory submitted during 1992-2002 on the subject categories 'Nuclear Experiment' and 'Nuclear Theory'. Out of the total 1152 submitted 'Nuclear

Experiment' e-print archives, 309 (26.82 %) were cited at least once. Similarly, out of the total 7664 submitted 'Nuclear Theory' e-print archives, 2033 (26.47 %) were cited at least once. Thus, the e-print archives are accepted as a genuine source of information (Willinsky 2003). These e-print archives received high citations in *Nuclear Physics A* (1326), *Physical Review C* (1278), *Physics Letters B* (836), *Physical Review Letters* (311), *Journal of Physics G* (266), and *Physical Review D* (228).

4.7 Access to E-Print Archives

4.7.1 Citations to offline and online publications

Lawrence (2001) reported that there is a clear correlation between the number of times an article is cited and the probability that the article is online. More highly cited articles, and more recent articles, are significantly more likely to be online, in computer science. The mean number of citations to offline computer science articles is 2.74, and the mean number of citations to online articles is 7.03, an increase of 157%.

4.7.2 Selling Free Access

The entomological Society for America (ESA), publisher of four leading entomological journals, recently began selling immediate free access (see http:/ / csssrvr.entnem. ut1.edu/-walker/tjwbib/walker.htm). The results suggest that a market-driven transition to free access for all articles in all journals is possible.

ESA's business plan is simple: it will provide immediate free web access, at a fair price, to authors who want it. As the cost of offering this rises (because of subscription cancellations), the price will increase. No author will be required to purchase it, and sales of subscriptions to the journals will continue as long as they are profitable. The endpoint of this plan is uncertain, but it may lead to the demise of paper publication and subscriptions, as authors and the institutions that support them embrace free access and strive to reduce costs.

Direct costs of the present system include printing paper issues, limiting access to electronic versions, and making past and present volumes accessible in hundreds of research libraries. Indirect costs are: reduced impact of articles and severely restricted

access by researchers in smaller institutions and in developing countries. Nonetheless, many stakeholders believe that printed issues, or at least tolls in the form of subscriptions and site licences, will continue indefinitely.

ESA began selling immediate free web access in January 2000. During the first two months of the service, authors bought it for 13% of articles, rising steadily to 59% during March and April 200 1. The price for the service is currently 75% of the price of 100 paper reprints, for example $90 for a 7 -page article. This price provides a greater profit margin than for paper reprints, which are expensive to produce and deliver. Immediate free web access requires only that the PDF file of the article is made freely accessible on ESA's web server (Walker 2001).

4.7.3 Institution-based self-archiving

There is now a way both to accelerate the rate of self-archiving in physics and to extend the practice to the other disciplines (Harnad 2001).

4.7.3.1 The transition scenario

As soon as all refereed journal articles are self-archived by their authors in their institution's e-print archive, the literature is freed from all access barriers and impact barriers. Self-archiving could be done virtually overnight. The day after, all refereed research becomes freely accessible online to researchers the world over.

One possible outcome is that that will be the end of it. The refereed literature will be free online for those who want it and cannot get it any other way, but those who can afford to get it the old way via paying journals will continue to do so. In this event, the access/impact problem will be solved, but the library's budget crisis will not: it will simply become less important.

An alternative outcome is that when the refereed literature is accessible online for free, users will prefer the free version (as so many physicists already do). Journal revenues will then shrink and institutional savings grow, until journals eventually have to scale down to providing only the essentials (the quality-control service), with the rest (paper version, online PDF version, other 'added values') sold as options.

In none of these outcomes is peer-review itself compromised or put at risk; nor do authors have to give up, even temporarily, submitting to their established journals of choice. All they have to do is self-archive their preprints and post-prints in their institutional e-print archives.

Nor are copyright restrictions an obstacle to self-archiving: preprints can be self-archived without any restriction at the time the paper is submitted to a journal. When the final draft is accepted, authors can ask the journal to retain their right to give away that draft online by self-archiving it. In practice, many publishers will agree to this if the author asks, although most do not publicly state it as policy. For these papers, the author can self-archive the refereed post-print alongside the pre-refereeing preprint(s). For those publishers who insist that all rights are transferred, authors can sign the agreement and self-archive a linked 'corrigenda' file, listing for the user what changes have to be made in the preprint to make it equivalent to the post-print.

4.7.3.2 Current Break-through

The new breakthrough is agreement on metadata tagging standards that make the contents of distributed archives interoperable, hence harvestable into one global virtual archive, all papers searchable and retrievable by everyone for free. The open archives initiative (OAI) has now provided the metadata tagging standards and a registry for all OAI-compliant eprint archives. The self-archiving initiative is providing free software for institutions to create OAI-compliant archives, interoperable with all other open archives, ready to be registered and for their contents to be harvested into searchable global archives, interlinked to one another by citations

Distributed, institution-based self-archiving benefits research institutions in three ways. First, it maximizes the visibility and impact of their own refereed research output. Second, by symmetry, it maximizes their researchers' access to the full refereed research output of all other institutions. Third, institutions themselves can hasten the transition to self-archiving and so more quickly reduce their library's annual serials expenditures to 10% (paid to journal publishers for refereeing their submissions).

The institutional library can help researchers to do self-archiving and can maintain the institution's own eprint archives as an outgoing refereed collection for external use, in

place of the old incoming collection via subscription costs for internal use. Institutional library consortial power can also be used to provide leveraged support for journal publishers who commit themselves to a timetable of downsizing on the way to becoming pure quality-control service providers (Harnad 2001).

4.7.4 Open Citation Linking Project (OpCit)

The OpCit is a funded project, currently developing tools to make the existing resources more powerful by completely citation inter-linking all of the papers in The Los Alamos E-print Archive (arXiv) and eventually to extend this to all the rest of the disciplines in other open archives. The user need only click on the citation to view that paper -- as long as it too is archived online. A fundamental part of the usage of an on-line archive is the habits of the users themselves. The aim has been to extend the ongoing research by investigating the relation between the objective online indicators and the authors' own verbal reports of their practices and rationale in archiving their work [http://www.eprints.org/results/report.html].

The first initiative of e-print archive services was from Los Alamos National Laboratory in almost --- subject categories. Still this service remains as a giant on the Internet. E-Print archives are still in their infancy, having only started to appear ten years ago. Yet despite the explosion of the WWW, only a minority of authors (30-40 %), and in very few fields (mostly Physics, Mathematics, and Computer Science) is using this channel for their scholarly communication.

It is perhaps the best-known example of the way the Internet has already changed the scholarly communication habits of scientists. The tighter integration of formal and newly rising informal e-print systems represents an enormous opportunity for libraries and information providers -- all to the benefit of the researcher.

The way scientists accepted e-print archives they started to cite them in their research works. The recency in citing them must be very high as their information content is very nascent ideas.

4.7.5 Preprint Usage and Citations of E-Print Archives

Various reports from the information science literature and other fields indicate that use of preprint servers, especially in the sciences, is very high. Youngen observed that the number of electronically posted preprints in astrophysics doubled every year during the 1992 through 1997 study period. Using the Institute for Scientific Information's SciSearch, slightly over 100 citations to preprints were retrieved in 1995; in 1997, the number of citations to electronic preprints rose to over 400. Youngen concluded, "The growth rate in citations reflects not only the authors' acceptance of the e-print, but the publishers and editors (acceptance) of the manuscripts as well" (Youngen, 1998). The use of electronic forms of scholarly information has typically been growing at 50 to 100 per cent per year (Odlyzko, 2000).

The growth of citations received along with the posting trend of nuclear experimental and theory e-print archives on arxiv.org are studied (Prakasan et al., 2004). Highly cited e-print archives in both these categories and the highly citing journals are also identified in the paper. All journals are highly reputed, relevant and influential in the respective fields.

4.7.6 Nuclear Theory and Nuclear Experiment E-print Archives

The repository of the subject category 'nucl-ex' is intended for nuclear experiments that investigate: (a) Nuclear Structure and Dynamics, (b) Quark Structure of Matter, (c) Phases of Nuclear Matter, (d) Fundamental Interactions (in nuclei or at low energies) and (e) Nuclear Astrophysics. This category also includes: (i) Baryon- meson- electron- photon- muon- and neutrino- scattering on nuclei (including A=1 and meson `targets' where appropriate) at all energies, (ii) Strong, electromagnetic and weak decays of nuclei, baryons and mesons, (iii) Light- heavy- and radioactive- ion scattering at all energies, and (iv) Properties of nuclear ground and excited states.

Scientists, publishers and information professionals alike now accept the e-print archives as primary information sources (Prakasan, et al., 2003b). Scientists started to utilize these emerging sources of information and to cite e-print archives in their

research publications. This has also been the case in the ISI *Science Citation Index* (*SCI*)/*Web of Science* from the year 1994 onwards.

A typical entry of a cited reference of e-print archives in the *SCI* is:

FILIMONOV-K-0000-NUCL-EX0109017

where FILIMONOV-K is author of the e-print archive, 0000 is the code followed for e-print archives in *SCI* database instead of the publication year for journal articles, conference papers etc., and NUCL-EX0109017 is the e-print archive number.

4.7.6.1 Growth of e-print archives vs citations

The number of e-print archives in the 'nucl-th' and 'nucl-ex' subject categories on LANL have overall rising trend every year. The time span for posting first 50 % of the total number of e-print archives on the category 'nucl-th' was seven years where as latest 50 % took only four years. The time span for posting first 50 % of the total number of e-print archives on the category 'nucl-ex' was seven years whereas latest 50 % took only two years. The year-wise growth of e-print archives posted for these two categories are depicted in Figure 4.7

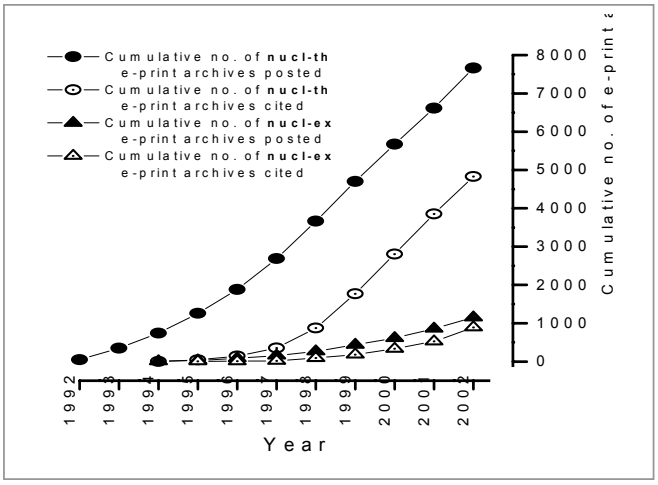

Fig. 4.7 : Growth of 'nucl-th' and 'nucl-ex' e-print archives

The citing pattern of top five journals (*Physical Review C*; *Nuclear Physics A*; *Physics Letters B*; *Physical Review Letters* and *Journal of Physics G*) is depicted in Figure 4.8.

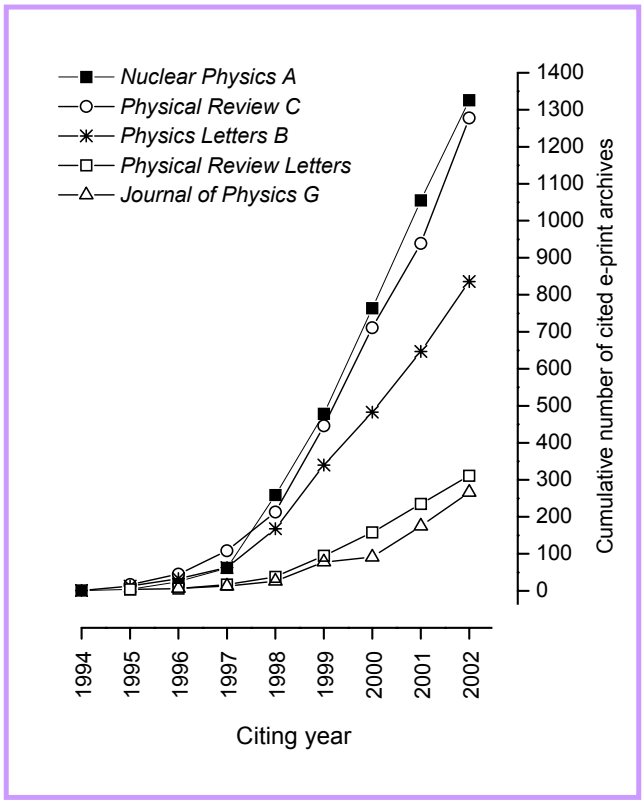

Fig. 4.8: Top five journals citing 'nucl-th' and 'nucl-ex' e-print archives in the *SCI*.

The citations to the e-print archives are very interesting to the information analysts and scientists as well. The sources publishing (reprinting of e-prints) as well as citing se-print archives are very reputed and influential in the respective fields. The citing pattern of e-print archives and the respective reprints of the same e-print archives establishes the importance of its thought contents, which are spearheading the leading edge of high research activity domains.

4.8 Most important developments in the Discipline "Library and Information Science" related E-Print Archives

Some of the provocative developmental news worthy arguments which Library and Information Science Professionals must keep abreast with are explained herewith.

4.8.1 The Public Library of Science (PLS),

Declan Butler: More than 25,000 scientists signed the PLS open letter, in which they pledged to stop buying, publishing in, or reviewing for any journal that refuses to place its research papers in free online archives six months after publication.

Michael Eisen, a geneticist at the University of California, Berkeley, and one of the leaders of the PLS initiative, says that one of the main goals of the campaign was to stimulate publishers into experimenting with business models other than the traditional 'reader pays' arrangement.

But most publishers seem uninterested, says Eisen, and the PLS has therefore "somewhat reluctantly" concluded that it will probably need to create its own publishing system, to show the economic viability of alternatives and to provide the scientists who have supported its campaign with a place to publish that provides free access.

For the moment, the PLS has few detailed plans about how it would put such a scheme into practice, but says that it has discussed the idea with many of the signatories of the open letter with a view to soliciting reviewers. Under its initial proposals for the scheme, all journals would be published online only, with page charges and institutional charges covering the estimated cost of US$200–500 per manuscript.

“A boycott is a negative thing. People have careers and need to publish; we want those who have supported the initiative to have a positive option supporting a new publishing venture," Eisen says.

4.8.2 Science must ‘push copyright aside

Richard Stallman: It should be a truism that the scientific literature exists to disseminate scientific knowledge, and that scientific journals exist to facilitate the process. It therefore follows that rules for use of the scientific literature should be designed to help achieve that goal.

The rules we have now, known as copyright, were established in the age of the printing press, an inherently centralized method of mass-production copying. In a print

environment, copyright on journal articles restricted only journal publishers — requiring them to obtain permission to publish an article — and would-be plagiarists. It helped journals to operate and disseminate knowledge, without interfering with the useful work of scientists or students, either as writers or readers of articles. These rules fit that system well.

The modern technology for scientific publishing, however, is the World Wide Web. What rules would best ensure the maximum dissemination of scientific articles, and knowledge, on the Web? Articles should be distributed in non-proprietary formats, with open access for all. And everyone should have the right to 'mirror' articles; that is, to republish them verbatim with proper attribution.

These rules should apply to past as well as future articles, when they are distributed in electronic form. But there is no crucial need to change the present copyright system as it applies to paper publication of journals because the problem is not in that domain.

Many journal publishers appear to believe that the purpose of scientific literature is to enable them to publish journals so as to collect subscriptions from scientists and students. Such thinking is known as 'confusion of the means with the ends'.

Their approach has been to restrict access even to read the scientific literature to those who can and will pay for it. They use copyright law, which is still in force despite its inappropriateness for computer networks, as an excuse to stop scientists from choosing new rules.

Journal publishers sometimes claim that on-line access requires expensive high-powered server machines, and that they must charge access fees to pay for these servers. This 'problem' is a consequence of its own 'solution'. Give everyone the freedom to mirror, and libraries around the world will set up mirror sites to meet the demand. This decentralized solution will reduce network bandwidth needs and provide faster access, all the while protecting the scholarly record against accidental loss.

Publishers also argue that paying the editors requires charging for access. Let us accept the assumption that editors must be paid; this tail need not wag the dog. The cost of editing for a typical paper is between 1% and 3% of the cost of funding the research to

produce it. Such a small percentage of the cost can hardly justify obstructing the use of the results.

Instead, the cost of editing could be recovered, for example, through page charges to the authors, who can pass these on to the research sponsors. The sponsors should not mind, given that they currently pay for publication in a more cumbersome way through overhead fees for the university library's subscription to the journal. By changing the economic model to charge editing costs to the research sponsors, one can eliminate the apparent need to restrict access. The occasional author who is not affiliated with an institution or company, and who has no research sponsor, could be exempted from page charges, with costs levied on institution-based authors.

Another justification for access fees to online publications is to fund conversion of the print archives of a journal into on-line form. That work needs to be done, but we should seek alternative ways of funding it that do not involve obstructing access to the result. The work itself will not be any more difficult, or cost any more. It is self-defeating to digitize the archives and waste the results by restricting access.

The US Constitution says that copyright exists "to promote the progress of science". When copyright impedes the progress of science, science must push copyright out of the way.

Richard Stallman is the founder of the GNU project, launched in 1984 to develop the free operating system GNU (an acronym for 'GNU's Not Unix'), and thereby give computer users the freedom that most of them have lost. GNU is free software: everyone is free to copy it and redistribute it, as well as to make changes either large or small. The GNU/Linux system, combining the GNU system and the Linux kernel, has an estimated 17 to 20 million users.

4.8.3 Whither competition?

Johnson (2002): Librarians have hotly debated the future of scientific publishing for several years, largely in response to the 'serials crisis' caused by the skyrocketing prices of many scientific journals. Until now, however, the problem has attracted little attention from the very scientists that the scientific communication system exists to serve.

One explanation is that researchers generally do not pay directly for journals, and they are often unaware of issues faced by their libraries. Libraries themselves have shielded researchers from the reality of rising journal prices by engaging in financial contortions. For example, monograph budgets have often been squeezed to pay science, technology and medical (STM) journal subscriptions. This approach is not only unsustainable but also insufficient. Despite such measures, most libraries have been forced to cancel more and more STM subscriptions.

Libraries are embracing substantial changes to redress the situation. In the 1990s, many explicitly recognized the objective of providing access to information, whereas traditionally libraries have emphasized ownership. This represents a fundamental shift for an institution with a centuries-old heritage of developing collections. Library consortia have also emerged as effective in squeezing somewhat better deals out of publishers for electronic licences, thereby increasing access and reducing per-use costs of information. They have demonstrated that demand rises with decreasing prices in the digital world.

But traditions militating against a systemic change in STM publishing - change that would place the interests of science first - are deeply entrenched. Scientists depend on publishing for career advancement, but as they do not pay for journals they have little incentive to stop submitting to high-priced titles. And libraries continue to come under pressure to buy journals, some of which they cannot afford. This fundamental market distortion means that the system as it stands cannot regulate itself.

Indeed, science publishing can be compared with the reform of US election campaign funding. We are asking the chief beneficiaries of the system, the publishers, to reform it. But if the US Congress can reform itself, so perhaps can publishing.

It is important to remember who are the consumers in scientific communication: the authors, who want their work to be widely disseminated and recognized; readers, who would like convenient, barrier-free access; and institutions, which require cost-effective means both to support and evaluate employees, and to teach students.

What is needed is to harness the motives of all the players in the system to best serve the interests of consumers. More effective incentives are needed throughout the system

to encourage broad, dynamic, cost-effective communication. The unleashing of competitive forces is fundamental to achieving these goals.

4.8.3.1 Consumer boycotts are 'powerful weapons'

The thousands of authors who have signed the Public Library of Science pledge may ultimately represent a potent force for competition. If the journals in which they have published in the past do not comply with their call for open access to back issues, signatories threaten to move to other publication venues that better satisfy their demands for access. Consumer boycotts can be a powerful weapon in a market economy. The current debate also shows how far we have come since the days when discussion of the journals crisis was largely limited to librarians talking to other librarians. Ultimately, however, greater competitive forces must be introduced throughout the system itself.

Although journals run by not-for-profit publishers generally cost less than those produced by commercial publishers, the latter currently dominate the US$9.5 billion STM information market (*Industry Trends, Size and Players in the Scientific, Technical & Medical (STM) Market,* Outsell, Burlingame, California). The Scholarly Publishing and Academic Resources Coalition (SPARC), comprising some 200 research institutions and libraries, was launched in 1998 to help not-for-profit and independent publishers inject more competition into science publishing.

Among other things, SPARC has aided the launch of high-quality journals aimed at competing head-on with expensive titles, with its member libraries subscribing to the lower-price version. The most dramatic example of rebellion is perhaps the decision in 1998 by Michael Rosenzweig, a biologist at the University of Arizona, to defect, along with the entire editorial board, from the Kluwer journal, *Evolutionary Ecology*. Rosenzweig had become disenchanted with price increases - averaging 19% annually - at the journal, which he had established a dozen years earlier. So he formed an alliance with SPARC to create an alternative, *Evolutionary Ecology Research*, and sell it to institutions at around one-third of the $777 price of the Kluwer journal. *Evolutionary Ecology Research* now attracts the top research in the field, whereas *Evolutionary Ecology* has fallen a year behind schedule in publishing issues and recently slashed its price by 40%.

4.8.3.2 Web 'portals' bring new risk of monopolies

With the advent of the Internet, journals may be supplanted as the basic currency of scientific communication by individual articles or other modules of information. Modular information can be grouped in multiple ways, for example in a narrow discipline-specific, or 'vertical', fashion, or as large aggregations. Increasingly, scientists turn to variants of such aggregations - portals, vortals, communities and channels - which bring together journals in a field, as well as other relevant information. It is therefore essential for competition that no single aggregration be allowed to obtain a monopoly; the dominant channels will set the norms for access terms and pricing.

Many of the large publishers have nearly completed digitizing the archives of their journals, and are moving to the next phase in which they will present vertical channels. Competition in this arena will be broader than that among individual journals; publishers will target authors and users of clusters of related journals, and increasingly the channel's brand may be the main competitive element, as opposed to journals.

Content on such channels may be inextricably interwoven with task-oriented tools designed to hook the user. For example, consider two recent strategic acquisitions of the giant Elsevier Science Publishing: *Endeavor*, a library automation software provider; and *Afferent*, a developer of 'workflow products' for chemists. The potential to integrate journal content tightly with such tools also means that users become accustomed to the system, and can be reluctant to expend the effort and disruption that switching to competing systems inevitably involves. This strategy is aimed at protecting the publisher's high-profit revenue streams.

It may already be too late to ensure competition in some fields where, through acquisitions and mergers, some publishers have built such a critical mass of content and value-added services that no one can challenge their 'first place to look' status. In other areas, however, the best and largest share of content is still in the hands of scientific societies and others - including some responsible commercial publishers -- who are more motivated by the needs of their communities than are many commercial publishers. But for these players to be competitive on the Internet, they may need to cooperate, sharing the costs of Web infrastructure and assembling a critical mass of

content to attract large numbers of users. Only in this way will they be able to offer at a reasonable price the competitive array of services required by the market. BioOne, a collaboration of societies and libraries co-founded by SPARC, is one model. Others include HighWire Press and Project Euclid, a collaboration between Cornell University Libraries and Duke University Press that will offer independently published mathematics journals a shared infrastructure for publishing.

4.8.3.3 Reinventing scientific publishing

In the long term, the best approach to scientific publishing may be to engineer the separation of the information repository function from the information service function. (This framework has been effectively articulated by Herbert Van de Sompel of Cornell University and others, and has recently been advanced by release of the Open Archives metadata harvesting protocol (see Open Archives Initiative). And in this nature.com web debate, Steven Harnad has outlined his view of the benefits of institution-based self-archiving.

The pioneering Los Alamos e-print repository in physics encapsulates this concept of storing the raw literature in free-access databases, with journals, portals and other services acting as value-added overlays. So far, only a few other disciplines have adopted the model, but its time may now have come.

This approach offers the promise of breaking the publishers' monopoly - and the pricing power that goes with monopoly - on unique individual articles. Openly accessible repositories would co-exist with published journals. Since the repository does not answer the need of the scientist to have her work 'certified' (as through peer review) or conveniently accessible, societies and other publishers have a continuing relevance in the scientific communication economy. But their new business models must be based on the utility they add to information.

Imagine if academic institutions, which are the largest source of published research, acting individually or perhaps in concert through library consortia, were to establish e-repositories for the work of their faculty. Government labs and even private industry might do the same. These articles could in turn be 'harvested' for inclusion in journals and portals that support themselves via fees (for example, subscriptions, author charges,

sponsorship and advertising, and so on) based on the market value buyers attach to their enhancements and convenience. Perhaps then the market could regulate itself.

Broad adoption of this model has been hampered by the widespread perception of serious stumbling blocks. On closer inspection, however, those concerns most frequently raised seem surmountable:
The risk of making non-peer-reviewed research available. The fact that authors would need to be affiliated with an institution would already provide a filter of sorts. In particular disciplines, other screening mechanisms could be supplemented if required. Such archives could be provided to researchers, clearly labelled as not having been peer-reviewed; the latter would be left to overlay journals or portals. So free access and minimum screening do seem to be feasible.
Confusion as to what is the 'official' version of an article. This would always be the peer-reviewed version. Reciprocal links could be maintained between the archive reports and the peer-reviewed one.
Ownership. This requires that universities and other institutions work out protocols with their employees recognizing the right of the institution to keep an archive documenting the research conducted there.
Journals may refuse to publish articles that are available in institutional repositories. Journals will modify their policies if authors collectively insist on it.

Undoubtedly, a large shift in this direction would require careful consideration of these and other obstacles; but the advantages of the access it would offer seem compelling. Institutions are beginning to experiment with the approach. MIT Libraries and the Hewlett Packard Company are developing the DSpace project, for example, to build a stable digital archive for the intellectual output of MIT's faculty and researchers. DSpace could serve as a model for other institutions, resulting in a federation of systems that make available the collective intellectual resources of the world's research institutions. CalTech's Scholars Forum and the Open Archives Initiative are two other undertakings aimed at refocusing scholarly communication on the core purposes of scholarship.

The outcome of such experiments is difficult to predict, but it is clear that the Internet is provoking a sea change in the way we think about scientific communication. We now have an opportunity to explore associated issues such as access control, rights

management, versioning, retrieval, community feedback, service development and economic models. Academic institutions functioning as repositories would in principle encourage publishers - non-profit and commercial alike - to focus their efforts on providing services on top of these.

There will be no single magic bullet solution to broadening access to scientific information. But the successful reforms will be those that best compete for consumers - authors, readers, and institutions. All of these groups share a desire for broad low-barrier access to the results of research. If they can act together to make the needed changes, the future seems bright for driving down costs and expanding access to scientific data and reports.

4.8.3.4 The Public Library of Science and the ongoing revolution in scholarly communication

Odlyzko (2004): I enthusiastically support the goal of making scholarly articles easily available on the Internet to everyone, without any fees or other barriers to their use. However, I have not signed the Public Library of Science (PLS) petition. My own contribution to the freeing of scholarly literature has been both to have long lobbied for this through articles and lectures, and to make all my e-prints available for free on my home page, and e-print servers. When discussing copyright transfers to journal publishers, I have also consistently reserved the right to post e-prints on the Web, and urge other scientists to adopt this policy.

The difference between my outlook and that of the PLS (which requires publishers to make articles available for free access from centralized servers within half a year of publication) is one of degree. Both courses of action produce improved access to scholarly publications. The improvement is especially dramatic for the general public, but also for those not fortunate to be at the few hundred institutions around the world that have first-class libraries. Both courses of action also serve to encourage scholars, publishers and librarians towards embracing the new era of learned discourse that is evolving.

The reason I do not endorse the PLS petition is because it assumes a certain fixed model for scholarly publishing. By requiring free public access to published articles

after six months, but not earlier, it implicitly says that publishers need some barriers to induce subscribers to pay. Yet why should it be six months and not six days, or six weeks, or six years? Furthermore, the petition requires the posting of articles on centralized servers, whereas the choice between publishing on centralized servers rather than distributed databases is far from clear-cut. I do not wish to commit myself to not publishing in outlets that might wish to experiment with different policies.

The PLS petition also fails to promote the free circulation of e-prints. While published papers that are peer-reviewed might be of greater utility to the general public, for active researchers it is the early versions that matter most. Some journals still adhere to the policy of refusing to consider for publication papers that have been widely circulated as e-prints. This practice serves to impede progress in science, and should be discouraged.

One thing that is certain in these uncertain times is that there will be much experimentation. This is unavoidable, since nobody can be sure how scholarly communication will evolve. We will be working our way free of the shackles imposed by Gutenberg's print technology and exploring the novel flexibility of the electronic medium for some time to come. A prominent feature of the evolution that is unfolding is the acceleration of communication. A recent article (by A. M. Campbell in *Science* in April 2001) about a new high temperature superconductor noted that '…every superconductivity laboratory in the world immediately began to make measurements on this new material and dash into print. Fifty e-prints had been posted on the Web by the end of February -- before the original paper was even published.' Some traditionalists bewail this hurried pace of research and publication, but that is how the world is evolving. No group that has embraced rapid electronic communication has been willing to relinquish it. The leisurely pace we have grown used to was forced on us by the print medium and was not a result of an informed choice.

The faster pace of communication, including e-prints, but also other informal means, such as phone, fax and e-mail, is creating a continuum of publication. This will require a continuum of peer review as well. Some of the opposition to the PLS (or earlier to any kind of electronic publishing) was based on fears that the peer review system might collapse. I am not concerned about that danger, as displacement of traditional journals from their central role will not be so rapid as to incur such risks, while novel forms of peer review will quickly emerge. Modern communication enables scholars to organize

quickly. It is noteworthy that the fifty papers on the new superconductor were not written at the same time by chance; some form of informal peer review helped persuade the authors that this was a promising subject to investigate.

Some of the coming transformations may appear uncomfortable today. For example, the notion of a final definitive version of an article, which seems so basic to scholarly publishing, is likely to fade away. Could anyone propose a definitive version of the human genome database? It already is a living object, constantly enlarged, corrected and updated. Increasingly, scholarly communication will take the same road.

While I do not endorse PLS fully, I do see it as a sign of an imminent transition in scholarly communication. The huge number of signatories to the petition shows that scholars are waking up to the opportunities that free distribution of their works offers to them as authors and to society in general. The scholarly publishing area is full of complicated feedback loops and perverse economic incentives, to the extent that I have often compared it to the American medical sector. Both fields are full of inefficiencies and resistance to change. Moreover, there are no magic solutions in either. Many simple solutions (such as demanding lower prices from journal publishers) are doomed to fail, since they ignore not only the dynamics of the free-market system but also where many of the real costs of the system are -- namely inside the libraries. There are also paradoxical phenomena, such as print sales increasing as a result of making a complete book or journal available for free on the Web. All these factors make it impossible to plan the evolution of scholarly publishing. However, rapid evolutionary change is coming, especially since authors, who ultimately possess the greatest power, are slowly realizing this and beginning to accelerate the pace of change.

The PLS may fail in their boycott threat. But change is on its way. We are reaching the point where even in fields that have not traditionally relied on e-print distribution, there are demands for freer circulation of e-prints and reprints. A direction that used to be of interest only to a small group of early adopters is gradually becoming accepted as part of mainstream scientific communication (see Open Archives Initiative). We are entering a period where the new rapid communication technologies will begin to dominate in very visible ways. The transition to the new era will not be easy, but it does offer enough opportunities that it will accelerate. It is exciting to watch this evolution, even if the slow speed at which it is unfolding is often frustrating.

4.8.3.5 Paradigm shift

The way towards a new paradigm of the scientific communication is not easy because multiple reasons, but the OAI context is able to offer not only a technical framework but also a new social approach in which most of the barriers and constraints of the traditional publication model are resolved (Comba 2002).

All refereed journals will soon be available online; most of them already are. This means that anyone will be able to access them from any networked desk-top. The literature will all be interconnected by citation, author, and keyword/subject links, allowing for unheard-of power and ease of access and navigability. Successive drafts of pre-refereeing preprints will be linked to the official refereed draft, as well as to any subsequent corrections, revisions, updates, comments, responses, and underlying empirical databases, all enhancing the self-correctiveness, interactivity and productivity of scholarly and scientific research and communication in remarkable new ways. New scientometric indicators of digital impact are also emerging (http://opcit.eprints.org/ to chart the online course of knowledge. But there is still one last frontier to cross before science reaches the optimal and the inevitable: Just as there is no longer any need for research or researchers to be constrained by the access-blocking restrictions of paper distribution, there is no longer any need to be constrained by the impact-blocking financial fire-walls of Subscription/Site-License/Pay-Per-View (S/L/P) tolls for this give-away literature. Its author/researchers have always donated their research reports for free (and its referee/researchers have refereed for free), with the sole goal of maximizing their impact on subsequent research (by accessing the eyes and minds of fellow-researchers, present and future) and hence on society. Generic (OAi-compliant) software is now available free so that institutions can immediately create Eprint Archives in which their authors can self-archive all their refereed papers for free for all forever (http://www.eprints.org/. These interoperable Open Archives (http://www.openarchives.org/ will then be harvested into global, jointly searchable "virtual archives" (e.g., http://arc.cs.odu.edu/). "Scholarly Skywriting" in this PostGutenberg Galaxy will be dramatically (and measurably) more interactive and productive, spawning its own new digital metrics of productivity and impact, allowing for an online "embryology of knowledge" (Harnad 2003).

4.9 Keywords and Keyphrases

Any serious bibliographic database designed to aid electronic information retrieval consist of Keywords typically (Hartley and Kostoff 2003)

- allow readers to decide whether or not an article contains material relevant to their interests;
- provide readers with suitable terms to use in web-based searches to locate other materials on the same or similar topics;
- help indexers/editors to group together related materials in, say, the end-of-year issues of a particular journal or a set of conference proceed-ings;
- allow editors/researchers to document changes in a subject discipline over time and
- link the specific issues of concern to issues at higher meta (abstraction) levels

4.9.1 The advantages and disadvantages of supplying keywords as perceived by 22 editors were;

Advantages are:

- They make it easier for people to do electronic literature searches
- Readers can use them to look up relevant articles in the index
- Readers and researchers can quickly and easily locate particular articles within their area of interest
- They are useful for abstracting and indexing services
- They help editors glean from the authors those things about their papers that they consider critical in terms of relating it to the broader literature in the discipline
- They can help editors prepare the index at the end of each volume
- They can provide editors with a way of tracking the coverage of articles in the journal, both currently and over time
- They can be useful for assigning papers to reviewers

Disadvantages are:

- Relevant articles may be missed if the author doesn't use the right key words. Currently authors do not appear to give much thought to their importance for information retrieval
- If the keywords are not accurate or general enough, they can mislead as well as help
- Authors sometimes use Keywords to make wider claims for their papers than the content justifies
- Keywords sometimes seem inappropriate (e.g. in arts journals) where the field is very diverse, where authors may be talking about their work in a personal way, and/or where they may be using arcane distinctions
- Authors sometimes forget to include them, and this causes more work

4.9.2 **Different methods for supplying keywords** are:

- Authors supply them with no restrictions on the numbers allowed
- Authors supply up to a fixed number (e.g. six)
- Authors supply Keywords as appropriate from a specified list
- Editors supplement/amend authors' key words
- Editors supply key words
- Editors supply Keywords from a specified list
- Referees supply Keywords from a specified list
- Keywords are allocated according to the 'house-rules' applied to all journals distributed by a specific publisher
- Keywords are determined by computer program (e.g. LISA) at proof stage

4.10 Development of Eprint Archives in Chronological Order:

Harnad (1990): The whole process of scholarly communication is currently undergoing a revolution comparable to the one occasioned by the invention of printing. On the brink of intellectual perestroika is that vast PREPUBLICATION phase of scientific inquiry in which ideas and findings are discussed informally with colleagues (currently in person, by phone and by regular mail), presented more formally in seminars, conferences and symposia, and distributed still more widely in the form of preprints and tech reports that have undergone various degrees of peer review. It has now become possible to do all of this in a remarkable new way that is not only incomparably more thorough and systematic in its distribution, potentially global in scale, and almost instantaneous in speed, but so unprecedentedly interactive that it will substantially restructure the pursuit of knowledge.

The prepublication phase of scientific inquiry, after all, is the one in which most of the cognitive work is done. Some of this work is relatively non-interactive, to be sure, for example, actually executing experiments, running computer simulations or proving theorems, but the rest -- from the interplay of the prior ideas out of which the experiments were designed and the theories constructed to the analysis and interpretation of the findings and their fit to the theories -- clearly consists of activities that profit from peer feedback. For most investigators the formal submission of a manuscript for peer review is not the first stage at which it has been subjected to peer scrutiny. That is what all those prior discussions and symposia and preprints had been intended to elicit. And all this prepublication interaction is clearly continuous with the lapidary stage at which the manuscript -- usually further revised in response to peer review -- is accepted and archived in print. Nor does it really end there, for of course the literature may respond to a contribution directly or indirectly for years to come, and there are even ways of soliciting post-publication feedback in the form of "open peer commentary"

Taubes (1993) : Ginsparg started the e-print archives in August 1991; since then, he says, they have countered what he calls "this bizarre miscon-ception that the publishers add so much essential 'added-value' that we should all be willing to pay big bucks for it." The electronic preprint distribution system now serves 17 disciplines in physics and last year handled over 13,000 submissions. "The archives have become a very

important part of the research community," says Cohen, "one of our most valuable tools"

Davis (1995): Computer scientists have long been using the Internet as a medium for transporting reports and documentation of many kinds, including, but not limited to, technical reports about computer science. The material available on the Internet has grown in size, and equally important, has become better organized. Three pioneering systems, UCSTRI, WATERS, and Dienst, led us to being within range of having a true computer science technical report library, with a collection built from the technical reports of the nation's computer science and engineering universities and research laboratories. Davis has described the Networked Computer Science Technical Report Library (NCSTRL), an attempt to reach this goal.

Okerson and James, (1995): Does the responsibility for scientific and scholarly findings lie at the grass roots with individual scholars or should there be institutionalization and centralization -- or both? Nobel Prize Winner Joshua Lederberg, looking to the practical uses of more and better information that the scientist can use, introduces the idea of institutional rather than discipline-based archives. From the library community, encouragement to recover some control over the economic fate of faculty products; then discussion of the place of the large learned societies in the publishing landscape ensues.

Ideas can change the world. Will these? The uncertainties are many. The model that Paul Ginsparg has already brought to life is one that clearly can work, at least under specific conditions. Where a well-defined group of users, all acclimated to the same kind of discourse and even familiar with standard software packages that transmit well by network, concentrate on producing rigorously analytical material, the relatively unobtrusive preprint server can be a powerful tool. Does it scale up? When the group gets larger or more diverse, when research interests start crossing disciplinary boundaries, when fundamental disagreements of method and style are a substantive part of the field itself -- does this kind of communication bog down? Are third parties needed to organize, control, and referee the conversations?

The way to find the answers to these questions is to begin to do, wherever possible, substantial projects of the kind the Ginsparg has outlined. The "hard sciences" are the obvious place to begin, for theirs is the academic culture most dependent on the journal

form (to the near exclusion of the monograph) and on timely and wide distribution of resuls of their investigations. But there are areas of the social sciences and even the humanities where similar enterprises can reasonably expect to succeed. What is striking in 1995, five years after the first electronic scholarly journals came on-line, is that there has been so restrained a rush to this new medium. The growth curve has continued upwards, but considerably flatter than that for the Internet use among academics as a whole. If the model is so enticing, why the delay?

One reason is clearly the economic immunity of the professoriate. The "serials crisis" and the problems publishers have marketing monographs clearly have not yet had an appreciable impact on the authoring public of academe. It is not palpably difficult to "get published": rejection of a given article is taken as a personal, not an institutional, problem, and most articles in which their authors believe find homes eventually. The insulation of scholars and scientists from the economic burdens of their own publications means that they can remain content with the system as it is. A natural tendency to prefer the familiar, usually expressing itself as a concern about whether e-publication will be accepted by promotion and tenure committees, exerts its staying hand as well.

The nature of the scientific or scholarly "paper" or "article" has been shaped by the medium of publication and distribution. Each item must be an independent grain of information, linked if at all by indexes and abstracts and cross-references. There is value (for promotion and tenure) in piling up total number of such grains. It is known the difference between an "article" and a "monograph" by several criteria, but a crucial one is length -- if it's too long to be an article, then it should think about becoming a monograph.

But in a world where the artifacts are distributed electronically, numerous changes are somewhere between possible and inevitable. Grains of knowledge will attract each other: if I publish a note this year and add a note next year, at the very least they will be linked to each other dynamically (whether they appear in different "journals" or not) and it may very well make more sense to replace the first note with a longer, coherent version summarizing the two stages of research. All sorts of question of version control and citation authority arise, to be sure, but as reader and as author I think my interests would be served if those can be solved and connections made stronger. Similarly, I need not worry about my article getting too long (in plain text of almost any kind, the difference for costs of storage and transmission between a two page article and a two

hundred page monograph will be negligible), and so the article and the monograph may cease to be distinct categories and a new configuration emerge.

Other changes will ensue. If in a WWW document I now need to cite another WWW document, I can make the link dynamic, so that instead of a footnote that says "Smedley, op. cit. 235" I can make a link and let you *read* Smedley's page 235 if you wish, to see whether what she says corroborates what I say or not. On this principle, not only my own works will be linked to each other, but a growing body of scholarly literature may be enmeshed in a net of links and connections that multiply the value of each item appreciably. At some point when that happens, the intrinsic superiority of the electronic to the paper medium will become ineluctable and the rush to cyberspace will be on in earnest. But still it is unknown for sure what it will cost. Debates such as the one included here on the percentage of costs of print publication devoted to printing, binding, and distribution (which almost always omit consideration of the costs to libraries of cataloguing, binding, shelving, circulating, and maintaining) are not well equipped to address a deeper question. How much of what we are now willing to pay for will we continue to be willing to pay for?

Harnad et al. will argue that HTML-tagged texts on the WWW are perfectly satisfactory for reading purposes, but such texts are undoubtedly problematic, not least because the author/editor cannot control *completely* the look and feel on the screen at the reader's end the way author and editor can now control it. Is that a value worth keeping? It might seem not, but recall how the first camera-ready copy for short run printing in the 1970s, based on photographed typescript, was very reluctantly received, and desktop publishing only really came into its own when the visual quality of the output was able to compete with print. Where is that threshold of acceptance in electronic audiences? It will vary from audience to audience, and for now it doesn't know.

It is also known that how much technology and support will *need* now. It is easy enough now to say that the traditional article will take up little or no bandwidth and so place a minimal strain on the network. But what if a scientist begins to believe he/she needs to give you full motion video, from six different angles, of a crucial experiment? Or if a report on an experiment conducted on the space shuttle feels it *must* be accompanied by gigabytes and gigabytes of the raw telemetry data sent back to earth? In principle (this is the power of the medium) such full presentations of data are possible and desirable, but in practice, they may begin to add costs (getting that video

formatted in a standard way for transmission to all platforms) that it does not now properly anticipate.

For all these concerns, it is impossible not to have at least some guarded optimism about this future. Now it needs not imagine substitution or totalitarian takeover by any of the players on the cyberspace frontier. What needs to be foreseen, instead, is the shift in the mixture of kinds of information available on what terms. There is already a lot of *free* information in the world (that is, information given away at no direct cost to end user): the phone book for one, all the information in the Borders or Barnes and Noble store that gets consumed by browsers who never buy -- the travel section at Borders in my neighborhood takes a pummelling in late winter as people plan their summer vacations for free, television news (paid for by soap-sellers) for another. Some information, on the other hand (stock tips from really qualified advisors), it pays for at a high price.

But life on the Internet has been marked, at least so far, by a far freer exchange of information by its producers than seems to be the case in the world of print. This "circle of gifts" culture exploits the power of the individual to multiply her words indefinitely at minimal cost of time and effort. So it is that documents which one scholar produces for more or less personal use (say for classroom distribution), or which one hobbyist produces purely for pleasure (say a Civil War hobbyist obsessed with the history of his small town in Tennessee), can now take on a utility they were denied before. Collaborations are possible, like the TOCS-IN project at the University of Toronto where a collective of classicists all over the world each take one or two scholarly journals to track, typing in the table of contents of each new issue as it appears; the whole is greater than the parts, and this easily gopherable resource is now widely used as a way of keeping current in the field, at no net cost to anyone.

It is examples like these that encourage us to dream large dreams about the free flow of information in the future, but even if those dreams fall short of realization, it must be considered likely that the *proportion* of the total information economy that will be occupied by this free exchange will be larger than is now the case. What this will mean, none can say, but it will influence the market for purchase and sale of information in many ways.

It is perhaps the word that Steven Harnad started with that begs the question: "esoteric". His idiosyncratic use of the word is meant to highlight publication with relatively few authors and readers, too negligible economically to be of interest to commercial

publishers and relatively easy to redirect towards free net distribution. At some level, Harnad is undoubtedly right. Some information will move this way. But "esoteric" as he uses it is a word that defines the position of a certain sector of information as it is produced and consumed in the world of *paper* publication. When once the power of the networks has been harnessed and a substantial part of the academic population has migrated to using it, a new economy will emerge. What we cannot now predict with accuracy is what will seem "esoteric" *there* and what will be commercially viable. The lines may very well fall in *very* different places from where they fall in the world of paper publication.

The responsible course for universities and research institutions concerned about the future is to press the claims of that sector, to experiment responsibly and venture bravely, to see if those lines can be drawn in a way that favors the widest and freest flow of information of a scholarly and scientific nature.

Lynch; and Garcia-Molina (1995): The CS-TR (The Computer Science Technical Report) project provides a model of a working distributed digital library that will be useful to participants in the NSF (National Science Foundation) Joint Initiative Digital Library Projects and as the conceptual framework for further research by other digital library developers. The NCSTRL (Networked Computer Science Technical Report Library) system that evolved from the CS-TR and WATERS projects will contribute significantly to the broader digital library community.

Taubes (1996a, 1996b): While traditional publishers try to extend their publishing empires onto the Internet, an underground movement of researchers to head them off. Its goal is to turn the electronic medium into a means of "author empowerment," in the words of physicist poul Ginsparg of the Los Alamos National laboratory. Led by Ginsparg and Stevan Harnad, director of the Cognitive Sciences center at the University of Southampton in England, they are trying to prove, as Ginsparg puts it, that not only can scientific articles be published over the Internet "unbelievably efficiently," but they can be offered virtually free to all comers.

Even if Harnad can reproduce the Los Alamos archives' success in fields beyond physics, however, traditional journals will still hold an ace: peer review. As Cohen puts it, "Many physicists believe refereeing is a good

thing. Bad papers are filtered out, and papers containing errors are sometimes corrected."

For the past 5 years, the American Society (APS) has listened to Physicists extol the virtues of the electronic archives located at the Los Alamos National Laboratory (LANL). The society has also been beset with predictions that its print journal will soon go the way of the dinosaurs, the victim of Los Alamos's brand of fast, virtually free, electronic distribution (Science, p. 767). Now the APS has decided that the way to beat the unbeatable is to imitate it.

On 1 July 1996, after a year and a half of cogitation and debate, and the formation of an e-print archive task force, the APS went on-line with its own prototype preprint server {http://publish.aps.org/eprint/). In its first 2 weeks of operation, it has garnered all of five submissions, which suggests it has a long way to go to catch up to the nearly 300 submissions the Los Alamos archive gets per week, but the APS says that overtaking Los Alamos is not the point. The society started its archives to serve not just as a repository of un-peer-reviewed preprints but also the point from which articles are submitted to any APS journal for review and publication. The APS also views it as a learning exercise and a test bed for technological innovations that might fit its needs and those of physicists better, says Arthur Smith, the physicist who created the APS e-print archive.

Anderson; Lasher; and Rich (1996): In 1992, the Advanced Research Projects Agency (ARPA) awarded a three-year grant to the Corporation for National Research Initiatives (CNRI) and five research universities to build a large-scale, distributed digital library of computer science technical reports produced by project participants. The participating universities were Carnegie Mellon University, Cornell University, the Massachusetts Institute of Technology, Stanford University, and the University of California at Berkeley. CNRI served as a collaborator and agent for the project.

The Computer Science Technical Reports (CS-TR) project was one of the earliest sustained investigations into the system engineering of digital libraries, and it pioneered multi-institutional collaborative research in this increasingly important area. The CS-TR project investigated a broad spectrum of technical, social, and legal issues related to the development and implementation a very large, heterogeneous, distributed digital library

Libraries are operational, production-oriented service organizations. A librarian's evaluation of a research project tends to focus on how successfully the products of this project are integrated with (or replace) existing services and how well they can be supported and renewed in a production environment. The CS-TR project built several new prototypes, which became true production systems. During the course of the project, it addressed many key aspects of designing a digital library:

- **Discovery**: matching the technology with the service vision.
- **Delivery**: nurturing and developing this match in a prototype atmosphere to examine its feasibility and readiness for implementation.
- **Service**: the ongoing operations of the service and the continuous improvement of the service.
- **Support**: provision of assistance, documentation, and training.
- **Integration**: fit of the new service with the organization's overall architecture and services.

The CS-TR project made the most progress in the areas of discovery and delivery. More precise questions for each of the above processes were articulated. The project's discussions about integration issues related large-scale, distributed digital libraries will have a lasting impact on the field.

Ginsparg (1997): Once the mere fact of publication in a journal no longer gives a particularly useful guide, readers are forced to perform the majority of the selection on their own by some set of additional criteria, and their primary need is simply access to the information as quickly as possible. For this reason, a systematic preprint system was set up for high-energy physics institutions in the early 70's and largely usurped the role of conventional journals as conveyors of topical information. This widespread preference for rapid access over the limited filtering provided by peer review was even more dramatically reinforced with the advent of the electronic preprint (e-print) archives in the early 90's, which quickly grew to supplant as well the conventional archival role of journals in many fields.

Ginsparg describes a set of automated archives for electronic communication of research information that have been operational in many fields of physics, and some related and unrelated disciplines, starting from 1991. These archives now serve over 35,000 users worldwide from over 70 countries, and process more than 70,000 electronic transactions per day. In some fields of physics, they have already supplanted

traditional research journals as conveyers of both topical and archival research information. Many of the lessons learned from these systems should carry over to other fields of scholarly publication, i.e. those wherein authors are writing not for direct financial remuneration in the form of royalties, but rather primarily to communicate information (for the advancement of knowledge, with attendant benefits to their careers and professional reputations). These archives have in addition proven equally indispensable to researchers in less developed countries.

A major lesson we learn is that the current model of funding publishing companies through research libraries (in turn funded by overhead on research grants) is unlikely to survive in the electronic realm. It is premised on a paper medium that was difficult to produce, difficult to distribute, difficult to archive, and difficult to duplicate -- a medium that hence required numerous local redistribution points in the form of research libraries. The electronic medium shares none of these features and thus naturally facilitates large scale disintermediation, with the resulting communication of research information both more efficient and more cost-effective. A correctly configured fully electronic scholarly journal can be operated at a fraction of the cost of a conventional print journal, and could for example be fully supported by author subsidy (page charges or related mechanism, as already paid to some journals), ideally allowing for free network distribution and maximal benefit both to authors and readers.

Another lesson is that authors are unlikely to accept "electronic clones" of print journals (i.e. electronic versions identical in content, functionality, methodology and appearance, to paper versions), whether transmitted via CD-ROM or via the network. The electronic medium should not be constrained by any former print incarnation and, in particular, easily implemented quality appraisal mechanisms in the electronic realm will be dramatically superior to the binary (i.e. one-time, all-or-nothing) procedure employed by the print medium, which in turn frequently conveys inadequate signal. Moreover, authors and their funding institutions will be empowered to insist upon retaining the right to distribute electronic research documents and attachments in the format produced by the authors. Authoring tools already allow a highly sophisticated end-user format, including automatic network linkages, and will continue to improve.

The essential question at this point is not *whether* the scientific research literature will migrate to fully electronic dissemination, but rather *how quickly* this transition will take place now that all of the requisite tools are on-line. Secondary open questions include determining the most effective means of cost recovery for the disseminators of this

information, what agencies will be responsible for insuring the long-term archival integrity, indexing, and cross-compatibility for the various research databases, and how peer review will be organized for those disciplines that depend on the value-added it can in principle provide.

Finally, Ginsparg described some of the major improvements, enhancements in functionality, and other expansions projected over the next few years for the existing archives.

Leiner (1998): Networked Computer Science Technical Reference Library (NCSTRL) is a confederation of over 100 institutions with the goal of providing a federated library of computer science material, i.e., a seamless federation of collections and associated library services accessible to the broad community. This document, written on behalf of the NCSTRL Steering Committee, provides a high level view of the approach being taken to achieve the open architecture required for the federated digital library of NCSTRL. NCSTRL is an ideal test bed for such a federated library approach, and the overall approach has already been demonstrated to be feasible and useful. The intention is to continue development and evolution of this architecture and the NCSTRL. At the same time, though, it is believed that this architecture is useful for environments other than NCSTRL and would welcome partnerships in exploring its applicability across the community as an open architecture approach to digital libraries and, more generally, to information management.

Halpern (1998): Computing research relies heavily on the rapid dissemination of results. As a result, the formal process of submitting papers to journals has been augmented by other, more rapid, dissemination methods. Originally these involved printed documents, such as technical reports and conference papers. Then researchers started taking advantage of the Internet, putting papers on ftp sites and later on various web sites. But these resources were fragmented. There was no single repository to which researchers from the whole field of computing could submit reports, no single place to search for research results, and no guarantee that information would be archived at the end of a research project.

This changed in September 1998. Through a partnership of ACM (Association for Computing Machinery), the LANL (Los Alamos National Laboratory) e-Print archive, and NCSTRL (Networked Computer Science Technical Reference Library), an online

Computing Research Repository (CoRR) was established. The Repository is available to all members of the community at no charge. They can submit papers, browse and search papers currently on the Repository, and subscribe to get notification of new submissions.

Andreoni; Baldacci; Biagioni; Carlesi; Castelli; Pagano; Peters; and Pisani (1999): the ERCIM Technical Reference Digital Library (ETRDL) is a digital library service which has been set up to assist the scientists of the European Research Consortium for Informatics and Mathematics (ERCIM), <www.ercim.org>, to rapidly access, manage and disseminate technical reports and other reference material in the IT domain.

Authors have described the implementation of a Digital Library (DL) for a European Consortium of national research institutions. The DL has been developed as a specialized sub-collection of the US Networked Computer Science Technical Reference Library (NCSTRL). The paper focused on the experience of authors in catering for user requirements at three different levels: that of the global NCSTRL service, that of a European library with its specific needs, and that of the member institutions of the Consortium.

Nentwich (1999): The ERPA(European Research Papers Archive) Initiative: In November 1997 the four most prominent producers of online working papers in the field decided to coordinate their electronic publishing operations. Their aim was to provide "a common access point for the online working paper series of the participating institutions in order to help researchers in the field of European-integration studies searching the growing number of working papers now available in the Internet." The founding members of the network were:

- the Academy of European Law and the Robert Schuman Centre of the European University Institute in Florence, Italy,
- the Harvard Jean Monnet Chair in Boston, Massachusetts,
- the Max Planck Institute for the Study of Societies in Cologne, Germany, and
- the European Integration online Papers (EI*oP*), based in Vienna, Austria

Until the advent of the Internet, with its opportunities to publish with much less effort and at much lower cost than in printed formats, the market for academic publications

was quite different. Working papers played a minor role in academic discourse because distributing them was so difficult. Journals and books needed commercial publishers and, therefore, outlets for scholarly work were more limited. While publication in print through a publishing house was by no means a guarantee of high quality, the double bottleneck of a limited number of publishers and of a fixed number of papers per journal issue created an environment of competitiveness. That usually meant higher quality, but it also meant slower publishing, since the top journals always had the most thorough review.

Now electronic publications are widespread in a growing number of disciplines and the situation has changed. An increasing number of sites offer academic papers without submitting them to a rigorous filtering process. These working papers, once available to only a small group, are now easily retrieved worldwide. Most important, the models are a first step. The door is open for even more imaginative solutions, combining both more transparency and comprehensiveness with more freedom of choice.

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Harnad (1999): Most researchers (after circulating earlier drafts informally to peers for preliminary feedback) are ready to make public the preprint that they have formally submitted to their chosen journal for peer review. And all researchers are ready to make public the final refereed draft that has been accepted for publication by the journal.

The two embryonic stages in the life-cycle of a research paper -- the submitted preprint and the accepted final draft -- that populate the Los Alamos Archive (with an interval of 9 months in between, which corresponds to the time it takes for the peer-review/revision/acceptance cycle to take place). Some fields may be more coy about making the preprint phase of their work public, but, by definition, no field is coy about making it public after it has passed peer review and been accepted for publication.

So why are at least the accepted final drafts of all papers written today not already being self-archived publicly on the Web by all authors in all disciplines?

Van de Sompel; and Lagoze (2000): The Open Archives initiative (OAi) promotes and encourages the development of author self-archiving solutions (also commonly called e-print systems) through the development of technical mechanisms and organizational structures to support interoperability of e-print archives. Such interoperability can stimulate the transition of e-print systems into genuine building blocks of a transformed scholarly communication model. The authors described the Santa Fe Convention of the OAi. This is a set of relatively simple but potentially quite powerful interoperability agreements that facilitate the creation of mediator services. These services combine and process information from individual archives and offer increased functionality to support discovery, presentation and analysis of data originating from compliant archives scope of these initiatives:

- arXiv.org, hosted by Los Alamos National Laboratory, is considered the premier example of e-print archives. The archive was started in 1991 by Paul Ginsparg, who is internationally recognized as one of the leaders in the area of scholarly publishing alternatives. Over the past decade, the arXiv archive has evolved towards a global repository for non peer-reviewed research papers in a variety of physics research areas. arXiv has also incorporated mathematics, non-linear sciences and computer science.
- CogPrints, hosted by the University of Southampton in the U.K., is modeled on arXiv and focuses mainly on papers in Psychology, Linguistics and Neuroscience.
- NCSTRL (Networked Computer Science Technical Reference Library) is an international collection of computer science research reports. NCSTRL is based on a distributed model. Documents are stored in distributed archives and are made available through distributed services that communicate via the Dienst protocol.
- NDLTD aims at building a digital library of electronic theses and dissertations (ETD) authored by students of member institutions. In ongoing research, NDLTD addresses issues such as the creation of a workflow to submit ETDs, the development of an XML DTD for ETDs and the support of a digital library for ETDs.
- RePEc, an initiative in economics, also operates on a distributed model. It provides authors with the option to submit working papers to a departmental archive or -- if

one does not exist -- to the EconWPA archive at Washington University. These archives support the so-called Guildford protocol that guarantees interoperability between the RePEc archives and has enabled the creation of a variety of end-user services.

The technical results of the Santa Fe meeting may be perceived as quite modest, and indeed they are. However, the technical moderation should be viewed in a broader context. First, it played an important role in bringing the Santa Fe meeting to a successful conclusion, with agreement among diverse parties. This agreement amongst a core group is an important step towards the development of a broader e-print community with a strong focus on cooperation and interoperability. The organizational framework provided by the Santa Fe Convention is intended to actively contribute to the creation and extension of such a community. Second, the limited nature of the technological requirements lowers the cost of entry for new participants, and hopefully builds momentum for the development of scholarly publishing alternatives. This momentum will provide a basis for future agreements that may extend and enhance the current Santa Fe Convention.

If successful, the Convention will attract early adoption by existing archives and encourage the establishment of new scholarly archives that will support the mechanisms defined by the Convention. The former, early adoption, seems to be occurring with participants at the meeting representing arXiv, the California Digital Library, clinmed, CogPrints, RePEc and NCSTRL, stating their intention to comply with the Santa Fe Convention in the near future.The CogPrints team at Southampton also work on the implementation of a free software for e-print archives that will comply with the Santa Fe Convention (The Santa Fe Convention of the Open Archives Initiative, http://www.dlib.org/dlib/february00/vandesompel-oai/02vandesompel-oai.html)

Van de Sompel; Krichel; Nelson; Hochstenbach; Lyapunov; Maly; Zubair; Kholief; Liu; and O'Connell (2000): A meeting was held in Santa Fe, New Mexico, October 21-22, 1999, to generate discussion and consensus about interoperability of publicly available scholarly information archives. The invitees represented several well-known e-print and report archive initiatives, as well as organizations with interests in digital libraries and the transformation of scholarly communication. The central goal of the meeting was to agree on recommendations that would make the creation of end-user

services -- such as scientific search engines and linking systems -- for data originating from distributed and dissimilar archives easier. The Universal Preprint Service (UPS) Prototype was developed in preparation for this meeting. As a proof-of-concept of a multi-discipline digital library of publicly available scholarly material, the Prototype harvested nearly 200,000 records from several different archives and created an attractive end-user environment. This paper describes the results of the project. This is done in two ways. On the one hand, the experimental end-user service that was created during the project is illustrated. On the other hand, the lessons that the project team drew from the experience of creating the Prototype are presented.
In a four-month timeframe, the project team demonstrated the feasibility of creating a cross-archive end-user service by means of its UPS Prototype system. The project identified a number of issues that are crucial in making the creation of such services more straightforward and that aim at the creation of rich, diverse and high quality services. These issues were incorporated in recommendations made to the Open Archives group during their first meeting in Santa Fe. An important concern in the formulation of these recommendations was the balance between the efforts required at the end of the data provider to implement the recommendations and the objective of making it easy for the service provider. The Santa Fe Convention, that is the result of the discussions at that meeting, has adopted many of these recommendations.

Other recommendations were outside the immediate scope of the first meeting, and they might become elements for future meetings. This is definitely the case for the submission mechanism and its relation to the quality of the metadata. Other issues that might be studied later include identifiers for other metadata elements such as author-affiliation and subject, and also the case for the inclusion of citation data in the metadata.

Chan; and Kirsop (2001): One development that has great potential value for poorly-resourced countries is "open archiving", or the deposition of scholarly research papers into networked servers accessible over the Internet. Networked servers are often referred to as "repositories" or as "archives", hence the term open archiving. However, the servers are not archives in the technical sense or the library community's understanding of repositories or archives. This process allows scientists in the south to retrieve research results from the north through an online interoperable mechanism.

Equally, it allows scientists in the south to contribute to the global knowledge base through participation. The purpose of this article is to inform scientists and publishers in the developing world about this and related initiatives and so allow informed decisions to be made about participation. Our intention is not to provide technical details about electronic publishing and the set up of "eprint" servers for open archiving, but rather to focus on the strategic significance of open archiving for scientists from developing countries.

This is an encouraging time for scientists everywhere as means of communication improve. Opportunities are great, but to ensure that the needs of academic communities in the developing world are not left out, further awareness, consultation and partnership building are required. Authors recommended that scientists keep aware of these initiatives, keep all publishing options open and inform colleagues of opportunities now underway through regional discussions.

Pinfield (2001) : It has been suggested that institutional e-print services will become an important way of achieving the wide availability of e-prints across a broad range of subject disciplines. However, as yet there are few exemplars of this sort of service. This paper describes how physicists make use of an established centralized subject-based e-prints service, arXiv (formerly known as the Los Alamos XXX service), and discusses the possible implications of this use for institutional multidisciplinary e-print archives. A number of key points are identified, including technical issues (such as file formats and user interface design), management issues (such as submission procedures and administrative staff support), economic issues (such as installation and support costs), quality issues (such as peer review and quality control criteria), policy issues (such as digital preservation and collection development standards), academic issues (such as scholarly communication cultures and publishing trends), and legal issues (such as copyright and intellectual property rights). These are discussed with reference to the project to set up a pilot institutional e-print service at the University of Nottingham, UK. This project is being used as a pragmatic way of investigating the issues surrounding institutional e-print services, particularly in seeing how flexible the e-prints model actually is and how easily it can adapt itself to disciplines other than physics.

arXiv is used on the ground was very useful for the authors and it has helped to identify some of the things that are most important to researchers and to consider how these might be of practical significance in running an multidisciplinary institutional service.

There are, of course, differences in how a subject-based service and an institutional service may work, just as there are differences in the way different disciplines themselves work. The arXiv service was designed by Physicists for Physicists, but at least some of the principles upon which it is based have the potential to be transferable. Many of the practical managerial considerations of running an e-print service should be the same across e-print archives for different disciplines. However, the arXiv service has been ten years in the making. For this reason, perhaps we should not expect instant results from our new services. Rather, it is a need to continue working through the issues discussed in this article and see how other services might develop in practice. Many people in institutions (researchers, librarians and managers) are beginning to see the potential of e-print archives and to think about the issues involved. Perhaps the best thing to do now is to give it a try.

Text conversion and mediated submission may then be necessary but of course come at a price (staff, administrative and equipment costs). It has been argued that institutions are in a good position to subsidize a new service during start up and provide the organizational framework for its continuation. At Nottingham, Library Services is absorbing the e-print facility into its remit.

Luce (2001): The e-print arXiv at the Los Alamos National Laboratory acts as a repository for electronic versions of papers in physics and mathematics, providing a rapid and convenient way for scientists to rapidly share their results with colleagues. Recently the arXiv was transferred to the Research Library, as part of its Library Without Walls. This article traces the development of the arXiv and examines some of the implications for libraries. Opportunities and challenges exist to integrate new forms of scholarly communication with newly developed digital library services offered by leading-edge libraries.

The journey in the e-print revolution has witnessed a decade of upheaval in the scientific research community. This new technology was started and adopted by researchers frustrated with the lack of effective and efficient communication with the process of scientific publishing. As the e-print system evolved, it has become an important and fundamental source of communication for the community. It is now incorporated into scientific research arena in a unique manner. The details change, but the underlying principles continue. As libraries evolve in the changing electronic revolution, they can continue to have an important role in supporting research.

Brown (2001): Examination of the role of e-prints in physics literature was conducted by citation analysis. Two databases were analyzed. Citation analysis was performed on e-prints from the Los Alamos e-print archive, arXiv.org, using the Stanford Public Information Retrieval System's High Energy Physics (SPIRES-HEP) and the Institute for Scientific Information's SciSearch databases. The SPIRES-HEP data represents citations to e-prints by e-prints while SciSearch data represents citations to e-prints by journal articles. Citations from 1991 to 1999 were examined. E-prints in the SPIRES-HEP database were cited approximately 10 times each by other e-prints, while those found in SciSearch were cited approximately 0.5 times each by journal articles. Despite this difference, the citation patterns were similar for both e-prints and journal articles. The citation rate by both e-prints and journals was highest from the high-energy particle physics archives. The data from SPIRES-HEP indicates that e-prints are used to a greater extent by physicists than previously measured and that e-prints have become an integral and valid component of the literature of physics.

Lynch (2001): The Open Archives Metadata Harvesting Protocol opens many new possibilities, which are yet to be explored. This means that it is difficult, and speculative, to establish strategies to exploit the new technology. But these opportunities are too important to be ignored.

For content suppliers, the way forward seems clear. They should prepare to offer metadata through the Metadata Harvesting Protocol (MHP) interface. Yet they will need to think very carefully about what they are doing, both in terms of what metadata they want to expose and at what level of granularity, and in terms of the potential reuse of this metadata. This is particularly true for operators of online catalogs, though it is also a question for organizations mounting special collections of all kinds. Any organization offering access to a sophisticated networked information resource may find the MHP is a new way to make content available to a variety of innovative service providers.

For data-intensive scholarly communities in which data is widely distributed rather than centralized into a few key community databases, this interface may offer a new way to translate rather abstract investments in metadata standardization into tangible opportunities to contribute to operational systems for locating information resources. And it may have other far-reaching implications; for example, in communities where

the resources to underwrite centralized databases haven't been available, or where the community practices emphasize local control of datasets by individual research groups, the base of available information may become much more visible to the community.
Finally, OAI metadata harvesting may offer a new bridge to bring innovation in networked information services and applications out of the research community more rapidly than has been the case in the past. Organizations that manage large databases and production information services are generally slow to innovate because their first priorities appropriately reflect the needs to exercise stewardship over the data and to provide reliable service to their user communities; most of their resources tend to be tied up in operations and maintenance. Researchers who want to explore new ways of organizing, presenting, or using these large data resources will now have a standardized way of extracting content without much disruption or cost to existing operational systems. This may be a powerful mechanism for enabling the development of new applications and services that have never before been possible.

O'Connell (2002): The Stanford Linear Accelerator Center (SLAC) and Deutsches Elektronen Synchrotron (DESY) libraries have been comprehensively cataloguing the High Energy Particle Physics (HEP) literature online since 1974. The core database, SPIRES-HEP, now indexes over 400,000 research articles, with almost 50% linked to fulltext electronic versions (now has over 15 000 search hits per day). This database motivated the creation of the first site in the United States for the World-Wide Web at SLAC. With this database and the invention of the Los Alamos E-print archives in 1991, the HEP community pioneered the trend to ``paperless publishing'' and the trend to paperless access; in other words, the ``virtual library.'' The authors examined the impact this has had both on the way scientists do research and on paper-based publishing. The standard of work archived at Los Alamos is very high. 70% of papers are eventually published in journals and another 20% are in conference proceedings. As a service to authors, the SPIRES-HEP collaboration has been ensuring that as much information as possible is included with each bibliographic entry for a paper. Such meta-data can include tables of the experimental data that researchers can easily use to perform their own analyses as well as detailed descriptions of the experiment, citation tracking, and links to full-text documents.

Pinfield; Gardner; and MacColl (2002): They have used a number of different dissemination methods:

- Setting up a project web site (linked to from the archive itself). This can act as a focus for developments and news(Examples at Nottingham, http://www-db.library.nottingham.ac.uk/ep1/information.html, and Glasgow, http://www.gla.ac.uk/createchange/).
- Producing a briefing paper. This is useful for presenting to committees. It should include specific recommendations for action and should be no more than two sides of A4.
- Distributing literature, such as the SPARC *Create change* leaflet (For online equivalent see http://www.gla.ac.uk/createchange/).
- Using university magazines, including the Library user newsletter.
- Presenting at departmental meetings and university committees.
- Organising special advocacy events for university staff.

Nixon (2002): Philip Hunter talked about an e-Prints Revolution in the last issue of Ariadne (http://www.ariadne.ac.uk/issue31/editorial/intro.html) and the technical revolution is here. The OAI have just released version 2.0 of the Open Archives Initiative-Metadata Harvesting Protocol (OAI-PMH) (http://www.openarchives.org/news/oaiv2press020614.html) and there is an increasing range of software choices beyond eprints.org for setting up institutional archives.
The challenge, ultimately will not be the technical implementation of an e-prints service but rather the cultural change necessary for it to become embedded and commonplace in the activities of the institution. That change will be assisted however by national programmes such as FAIR and international declarations such as that of the Budapest Open Access Initiative (http://www.soros.org/openaccess/read.shtml) At Glasgow the development of the e-prints service has been incremental but we have made steady progress and have been encouraged by the enthusiasm for such an archive which our early adopters have shown. The authors reported the making on this initial service and, with DAEDALUS implement a range of new services and, more importantly continue to nurture an e-prints / open access culture

MacColl; and Pinfield (2002): The current structure of scholarly communication may have made some sense in a paper-based world. However, in a digital world it is looking

increasingly anomalous. Where there is a need for the rapid and wide dissemination of content to the research community, it is found wanting. It is also extremely expensive for the very research community it is trying to serve. The development of institutional repositories is one possible response to the current problems. SHERPA is one project which hopes to go some way in testing out this model. There are key technical, managerial, and cultural issues which need tackling urgently. As the project begins to do this it will disseminate the lessons learned to the wider community in the hope that others will begin the process as well. SHERPA is, of course, just one project within a larger programme. FAIR is just one programme within a larger set of international developments. But it is hoped that FAIR projects, along with others working in this area, can begin to generate some kind of momentum, which will enable us to improve the way in which scholarship is carried out in the future.

Johnson (2002): Institutional repositories offer a strategic response both to the opportunities of the digital networked environment and the systemic problems in the today's scholarly journal system. This response can be applied immediately, reaping both short-term and on-going benefits for universities and their faculty and advancing the transformation of scholarly communication over the long term.

Nixon (2003): This article set out to provide a flavour of two of the software options available for building institutional repositories. They have much in common and the choice of which, or both, or neither [http://cdsware.cern.ch/], will hinge on a range of local factors. It is not a question of which software is better but rather which is appropriate for the institutional services, which you are building, their purpose and the content. Will it be to free research papers or is it to manage and preserve digital content, or both?

The choice of software is only one component in a larger collection of issues for the implementation of an institutional repositories service. There is a range of policy decisions, which must be made and from that will flow the decisions on assets, advocacy, access and audience.

At the University of Glasgow it can be seen GNU EPrints and DSpace as complementary products, which have enabled to take a twin-track approach to the

advocacy work in gathering different institutional assets, which present different challenges. Ultimately it is the cultural change and advocacy work, which will ensure that these services have content and do not languish empty and unfulfilled. Experience has shown that it is not enough to merely build such services, the real challenge is to gather the content but that is another article.

Dobratz, Susanne, and Birgit Matthaei. (2003): The Open Archives Forum project conducted a survey on the European activities taking part in OAI. To see the relationship between European activities to worldwide activities, the following resources were used:

Open Archives Initiative:

http://www.openarchives.org/service/listproviders.html

http://www.openarchives.org/Register/BrowseSites.pl

Open Archives Forum:

http://www.oaforum.org

Signal-Hill OAI Site:

http://www.signal-hill.org/nav/archives2.html

Eprints.org:

http://software.eprints.org/#sites

http://software.eprints.org/

The Open Archives Forum project has set up a European authority registry for open archives, (not restricted to OAI-compatible archives) that provides additional information about the content of those archives. The registry supports collaboration and dissemination by making available information about OAI-compliant Data and Service Providers, both EC-funded initiatives and other national initiatives in Europe. Users of the registry will fill the database themselves.

For each provider, the database includes details regarding scope of project, content, collection development policy, metadata formats, version of OAI used or other protocol implemented, contact names, and tools in use. The database uses a self-registering interface with a priority on sustainability and automated input techniques.

The database provides information on: Services for open archives; Metadata schemas and Interoperability; Open archives software tools; and Current OAI implementations in Europe and beyond.

Smith; Barton; Bass; Branschofsky; McClellan; Stuve; Tansley; and Walker (2003): For the past two years the Massachusetts Institute of Technology (MIT) Libraries and Hewlett-Packard Labs have been collaborating on the development of an open source system called DSpace™ that functions as a repository for the digital research and educational material produced by members of a research university or organization. Running such an institutionally-based, multidisciplinary repository is increasingly seen as a natural role for the libraries and archives of research and teaching organizations. As their constituents produce increasing amounts of original material in digital formats—much of which is never published by traditional means—the repository becomes vital to protect the significant assets of the institution and its faculty. The first part of this article describes the DSpace system including its functionality and design, and its approach to various problems in digital library and archives design. The second part discusses the implementation of DSpace at MIT, plans for federating the system, and issues of sustainability.

Van de Sompell; Young; ickey (2003): The Open Archives Initiative's Protocol for Metadata Harvesting (OAI-PMH) was created to facilitate discovery of distributed resources. The OAI-PMH achieves this by providing a simple, yet powerful framework for metadata harvesting. Harvesters can incrementally gather records contained in OAI-PMH repositories and use them to create services covering the content of several repositories. The OAI-PMH has been widely accepted, and until recently, it has mainly been applied to make Dublin Core metadata about scholarly objects contained in distributed repositories searchable through a single user interface. This article describes innovative applications of the OAI-PMH that we have introduced in recent projects. In these projects, OAI-PMH concepts such as resource and metadata format have been interpreted in novel ways. The result of doing so illustrates the usefulness of the OAI-PMH beyond the typical resource discovery using Dublin Core metadata. Also, through the inclusion of XSL [Extensible Stylesheet Language, http://www.w3.org/Style/XSL/] stylesheets in protocol responses, OAI-PMH repositories have been directly overlaid with an interface that allows users to navigate the contained metadata by means of a

Web browser. In addition, through the introduction of PURL [PURL - Persistent URL, http://purl.org/] partial redirects, complex OAI-PMH protocol requests have been turned into simple URIs that can more easily be published and used in downstream applications

Marcondes; and Sayao (2003): SciELO, the Scientific Electronic Library Online, uses a methodology developed by BIREME/PAHO/WHO [BIREME/PAHO/WHO: BIREME (Latin America and Caribbean Center on Health Sciences Information); PAHO (PanAmerican Health Organization); and WHO (World Health Organization)] that enables the implementation of web digital libraries of scientific journal collections of full text articles. Various SciELO gateways are now in operation, providing access to academic journals from Brazil and other countries in Latin America and the Caribbean. SciELO plays a very important role in the worldwide dissemination of the technical and scientific literature published in developing countries, thereby increasing visibility of this literature that otherwise would be accessible only within the borders of those developing countries.

The SciELO methodology utilizes ISIS software for formatting and maintaining the SciELO metadata database. UNESCO developed this software as well as other associated software, which serve as the bases for Science, Technology and Medicine (STM) information systems, databases and networks in several developing countries. This article reports on the results of a pilot-project in which a generic ISIS metadata database interface — used by SciELO — compliant with the Open Archives Initiative (OAI) was developed.

Stephen Pinfield (2003): The JISC FAIR programme in the UK includes some interesting and important projects aiming, at least in part, to address some of the key issues that have emerged from early work on open archives. But FAIR is, of course, only one current programme in this area. The Mellon Foundation OAI programme in the USA and DARE project in the Netherlands are examples of similar activities in other countries <http://www.arl.org/newsltr/217/waters.html>, and http://www.surf.nl/en/actueel/index2.php?oid=7]. Individual institutions are also doing interesting work without external funding. As all of these programmes are now underway, perhaps more could be done to ensure that the projects communicate with

each other so their activities are complementary and mutually supportive. It can be hoped that between them these kinds of projects can take on board the lessons of the early open archive work and begin to encourage the implementation of OAI-compliant repositories on a scale not previously achieved. An increasing number of information professionals and researchers are beginning to recognize that the various OAI programmes and activities have the potential to make a real difference to the scholarly communication process and therefore bring enormous benefits to the scholarly community.

Jantz (2003): The variety and complexity of digital objects are at times overwhelming and will be increasingly so as the authors develop new technologies for delivering information. It isn't practical to try to preserve all of this complexity. Ultimately digital preservation becomes a matter of trust in some person, group, commercial enterprise or institution [http://www.clir.org/pubs/abstract/pub107abst.html]. Digital preservation and archiving are natural extensions of the traditional roles of academic libraries with regard to the preservation of non-digital content. As an institution, the library offers a degree of permanence in academia not easily provided by other university departments or by commercial information organizations. Although considerable change will be required in roles, processes, and policies, it seems appropriate that academic libraries take on this challenge. The Eagleton Poll Archive represents one of the first such projects for Rutgers University Libraries; however, we expect the insight and experience gained from this project will also benefit many of our other digital projects.

Muller; Klosa; Andersson; and Hansson (2003): The DiVA (the Digital Scientific Archive or Digitala Vetenskapliga Arkivet in Swedish) project has created exciting possibilities for further development. The project team at the Uppsala University Library has initiated cooperative projects with other universities in Sweden and Denmark. Although the original focus of DiVA was not on research, but rather focused on developing a practical electronic publishing implementation, several spin off projects—including both research and operational projects—have been started as a result of DiVA system development.

The valuable cooperation taking place within the consortium of universities using the DiVA system provides a platform in which both technical and organizational matters

are being discussed and plans for future development are being made. Authors hope cooperation within Sweden in the field of electronic publishing will be established between users of a variety of systems and, in this way, that it will be possible to share experiences and expertise.

Although the current operational DiVA system satisfies the original project goals and requirements set up in 2000, we see a lot of potential for enhancing DiVA system functionality, as well as building new services. Although many problems and challenges will need to be tackled for future development, a solid base has been put in place from which to move forward.

Gadd; Oppenheim; and Probets (2003): The RoMEO (Rights Metadata for Open archiving) Project has been a most interesting exercise. The findings, particularly the Directory of journal publishers' self-archiving policies, should encourage academics that self-archiving is a realistic approach. Nevertheless, the project has also highlighted a number of concerns about publishers' copyright agreements, which—if dealt with—could greatly improve an author's rights under the current journal publishing system. The RoMEO project has shown that academics do not require the level of copy protection currently provided by (UK) copyright law and/or publishers' e-journal licences. Therefore, the provision of an alternative means of protecting academics' works through rights metadata, such as that proposed by the project's development phase, should be a welcome one. RoMEO has also demonstrated that whilst most Data and Service Providers are happy to share metadata in the spirit of open-access, they too are interested in protecting some of their interests as rights-holders. It is hoped that the metadata protection solution proposed by the RoMEO project team will protect those rights. In this vein, the RoMEO team is delighted to be working with the OAI in establishing a dedicated Technical Committee, OAI-RIGHTS, to further develop their technical proposals into generic guidelines for disclosing rights expressions under the OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting). It is hoped that the work of the committee will be available for general comment in the spring of 2004.

Smith (2004): The ambition of DSpace at MIT, and at a growing number of other institutions, to make our research material in many forms publicly available is proving to be quite achievable. However finding incentives for faculty to participate, and

working with publishers and government regulators to insure that these efforts continue to be allowed and, hopefully, become easier, is a long process that has only just started. But having a platform available with which to experiment and build these services at research institutions is going to support unprecedented progress in that process. There is nothing so rewarding as being able to get started and see what happens. We look forward to getting more institutions involved, and to working together with them to achieve real, and long-overdue, change.
To find out more about the DSpace software (http://dspace.org) and how it's being adopted at a number of research institutions.

Beier; and Velden (2004): The eDoc-Server project is part of the strategy of a multi-disciplinary research organization to embrace the Internet as a powerful medium, which will revolutionize scientific and scholarly communication and to increase access to all information resources relevant for its research.
With the eDoc-Server the Heinz Nixdorf Center for Information Management in the Max Planck Society (ZIM) provides the research institutes of the Max Planck Society (MPS) with a platform to disseminate, store, and manage their scientific output. Moreover, eDoc serves as a tool to facilitate and promote open access to scientific information and primary sources. Since its introduction in October 2002 eDoc has gained high visibility within the MPS. It has been backed by strong institutional commitment to open access as documented in the 'Berlin Declaration on Open Access to the Data of the Sciences and Humanities', which was initiated by the MPS and found large support among major research organizations in Europe.
This paper will outline the concept as well as the current status of the eDoc-Server, providing an example for the development and introduction of an institutional repository in a multi-disciplinary research organization.

Guy, Powell; and Day (2004): As more work is carried out in the area of eprints there is an increasing realisation that the metadata creation process is key to the establishment of a successful archive. There is still much research work to be done in areas such as consideration of the processes involved and the use of metadata tools. However this article has outlined a number of procedures through which those setting up eprint archives may be able to improve the quality of the metadata being produced for their own service and external service providers. The consistent application of

relevant metadata is extremely important in supporting the creation of high-quality services based on it. In order to achieve this, data providers need to consider their own functional requirements and those of relevant service providers. They also have to define an appropriate metadata application profile to support these requirements and make clear decisions on the quality levels needed for them to operate properly. The provision of cataloguing guidelines and authoritative information on controlled vocabularies can help support the metadata creation process, e.g. by being incorporated in metadata editors. Finally, there are a number of quality assurance techniques that can be used to measure the quality of the metadata after it has been created. These include the evaluation by information specialists of random samples and the use of graphical analysis tools. It may also be possible to focus on improving eprint deposit and metadata creation workflows and to undertake some usability testing of the archives while they are being developed.

Jones (2004): The level of configuration available within the DSpace (http://dspace.org/) administrative area puts it far ahead of ETD-db (The Electronic Theses and Dissertations - database: http://scholar.lib.vt.edu/ETD-db/) in this category. Although this is not quite as sophisticated as we might want it is only necessary in a few, more advanced, cases to delve into the code itself to make changes - but this is true of ETD-db also. The rigidity of its workflow, though, could stand in the way of creating the steps that different institutions could fit into their current working methods.
ETD-db is designed to allow the easy authoring and supervision of E-theses, and the tools that it provides for this purpose are straightforward and relatively effective. DSpace provides none of this functionality and would need to have it added before a service could be provided. We have also seen that when withholding items, ETD-db provides far simpler - although potentially flawed - functionality than DSpace.
Overall the methodology employed by DSpace is superior to that of ETD-db, and many of the shortcomings of the DSpace system can be reasonably solved. Conversely, the work required to bring the ETD-db up to the same standard in all other respects is fairly extensive and may require rewriting of much of the software.

Mackie (2004): Filling a repository for published and peer-reviewed papers is a slow process, and it is clear that it is a task that requires a significant amount of staff input from those charged with developing the repository. Although we have succeeded in

adding a reasonable amount of content to the repository we have also been offered significant amounts of content that cannot be added because of restrictive publisher copyright agreements. In some cases academics have offered between ten and twenty articles and we have not been able to add any of them to the repository. This is a clear demonstration that major changes need to take place at a high level in order for repositories to be successful. Although some academics have taken the decision to try and avoid publishing in the journals of publishers with restrictive policies, this is still relatively rare. We can inform staff about the issues, but we cannot and should not dictate in which journals they publish. Change is only likely to happen if staff are required, either by the funding councils or by their institution, to make their publications available either by publishing in open access journals or in journals that permit deposit in a repository. Academics also need to be assured that their chances of scoring highly in the Research Assessment Exercise will not be adversely affected by publishing in open access journals. It is clear that while academics can see the benefits of institutional repositories, there has not yet been a sufficient cultural shift to persuade them to take action. It will be very interesting to see whether the policy adopted by the Queensland University of Technology requiring academics to deposit their research outputs in the University's Eprint repository (Queensland University of Technology: E-print repository for research output at QUT (Policy document) http://www.qut.edu.au/admin/mopp/F/F_01_03.html) is more widely adopted.

On a more positive note, there have been a number of recent encouraging developments, in particular the statement from the Wellcome Trust supporting open access (Wellcome Trust Position Statement in support of open access publishing http://www.wellcome.ac.uk/en/1/awtvispolpub.html), and the ongoing Parliamentary Inquiry into Scientific Publications. Changes in the scholarly communications process at this level will make a huge difference to the success of the institutional repository movement. At the same time open access issues are starting to become mainstream news for academics, and greater awareness of the issues can only help the development of repositories. It will be critical for repositories to start to prove themselves in the foreseeable future, and it is to be hoped that such developments will go a long way towards helping them to do this.

Awre (2004): An account is given of the work of the FAIR Programme in developing and supporting projects in the sharing of digitally-stored institutional assets within the higher and further education sectors in the United Kingdom.

The first 18 months of the FAIR Focus on Access to Institutional Resources) Programme has been a period where many issues have emerged. This process has been encouraged so that they can be fully addressed within their projects and their institutions. The cross-project themes identified so far are Overall, the projects within FAIR are proving very successful in addressing the aims of the programme and will produce services available, but these will only offer access to a single institution's assets. The ePrints UK project is building an OAI service provider to fulfil the role of serving cross-institution access, and there are a number of international service providers (e.g. OAIster , http://www.oaister.org/o/oaister/) and subject-based services (e.g. ogPrints,http://cogprints.ecs.soton.ac.uk/) that can already provide this service. HaIRST (HaIRST - Harvesting Institutional Resources in Scotland Testbed - is one of 14 projects funded by the Joint Information System Committee (JISC) under the FAIR programme) is also examining the requirements of a service provider for valuable information and experience for institutions and others to learn from, both in the use of OAI and in the wider issues of disclosing and sharing institutional assets. All projects have widely disseminated their aims and findings through workshops, conferences and journal articles. The timing of the FAIR Programme will both allow projects to benefit from wider interest and developments and to feed into and influence these Developments.

Wheatley (2004): The key recommendations from the report of Recommendations for Institutional Repositories in the context of Digital Preservation are for the continued development of specific requirements for trusted digital repositories, and also for the creation of independent certification services for digital repositories that will evaluate how repositories meet these requirements. A clearer picture can then be presented as to how well institutional repository software, as well as specific digital repositories, can deliver effective digital preservation.

The report also makes the following recommendations:

• Preservation functions require integration with institutional repository design and must be considered from the outset both in the development of repository software and in the establishment of a given repository.

• Digital preservation developments are at an early stage in many areas so where possible, developments in institutional repository software should be made as modular, flexible and extensible as possible to allow integration with digital preservation developments as they become available. If an element of fore thought is given to the demands of digital preservation as described above, this process can be considerably simplified.

• Careful consideration must be given to the preservation needs of materials to be archived within an institutional repository. Very good reasons must be identified for not addressing digital preservation.

• Community wide efforts must be invested in developing the solutions to identified requirements for digital preservation in a repository context.

The following areas are considered to be crucial:

• Ingest

• Representation Systems

• Rendering

• Where possible concentrate development on distributed preservation functions which offer community wide sharing, and community based ownership and maintenance.

• Continue to build on the OAIS (Open Archival Information System) model particularly with respect to Representation Networks, the value of which has been ignored in many sectors.

5. OBJECTIVES

Present study of E-Print Archives intends to:

5.1 survey the status of E-Print Archives related to Library and Information Science (LIS),

5.2 identify LIS E-Print Archives having highest E-Prints in the Live Archives,

5.3 focus on the identified highest status E-Print Archives for further quantitative documentation including:

5.3.1 classification system used and developed by whom

5.3.2 type of submission (conference paper, journal article, etc.)

5.3.3 deposited on (month and year)

5.3.4 status (published/unpublished)

5.3.5 public domain (yes/no)

5.3.6 authors

5.3.7 subjects/content analysis

5.3.7.1 single domain

5.3.7.2 two domains

5.3.7.3 three domains

5.3.7.4 four domains

5.3.7.5 five domains

5.3.7.6 six domains

5.3.7.7 seven domains

5.3.8 year (Publication Year)

5.3.9 abstract (for Readability Analysis)

5.3.10 publication source (Journal)

5.3.11 alternative locations (No link/Single link)/Multiple links)

5.3.12 keywords

5.4 focus on single domain specified e-print archives

5.4.1 Domain A: Theoretical and general aspects of libraries and information.

5.4.2 Domain B: Information use and sociology of information.

5.4.3 Domain C: Users, literacy and reading.

5.4.4 Domain D: Libraries as physical collections.

5.4.5 Domain E: Publishing and legal issues.

5.4.6 Domain F: Management.

5.4.7 Domain G: Industry, profession and education.

5.4.8 Domain H: Information sources, supports, channels.

5.4.9 Domain I: Information treatment for information services (Information functions and techniques).

5.4.10 Domain J: Technical services libraries, archives and museums.

5.4.11 Domain K: Housing technologies.

5.4.12 Domain L: Information technology and library technology.

6. MATERIALS

In practice, any given historical account must be limited by its choice of coverage, technique of analysis and objectives. Effective use of already available knowledge is as valuable as creation of new knowledge. Hence, present effort is to highlight it through librametric mapping and stimulate the target groups to open up and use the treasure trove of past experiences (Kalyane et. al. 2003, Kalyane et. al. 2004) as well as frontiers of the "**Knowledge Generating System**" (Swarna et. al. 2004).

Self-archiving the preprint is the critical first step. Before it has even been submitted to a journal, your intellectual property is your own, and not bound by any future copyright transfer agreement. So archive the preprints (as physicists have done for 10 years now, with over 150,000 papers, and cognitive scientists have done for 3 years now, with over 1000 papers). This is a good way to establish priority, elicit informal feedback, and keep a public record of the **embryology of knowledge** (Harnad 2003)

Focus of the present work is on domains and sub-domains highlighting contributions by the elites from **Computer Science**, **Library Science**, **Information Science**, **Information Technology**, etc., who are self-motivated to share their data, information, knowledge, experiences, etc. to their contemporaries globally and develop instantaneous networks among themselves.

The Pre-prints plus Post-publication literature when deposited in digital formats are being called as "**E-Prints**". For the present study the site http://eprints.rclis.org downloaded on and up to 7th July 2004 formed the case study material. The retrieved status had 983 E-Prints.

Materials of the present study encompass:

- individual self-archiving
- research group self-archiving
- institutional self-archiving
- country self-archiving

The documents included may be:

- not for publication in traditional print media/electronic media
- pre-publication, to be submitted for publication
- pre-publication, being exposed to in-house refereeing
- pre-publication, already forwarded for publication
- pre-publication, awaiting external referees critical comments
- pre-publication, improved after receiving in-house referees, and/or external referees comments and suggestions
- pre-publication, which has already been accepted for publication in traditional print media/ simultaneous publication in traditional print media and electronic media/ electronic media, in same or different versions
- post publication in non conventional literature (grey literature, technical report, etc.) traditional print media/ simultaneous publication in traditional print media and electronic media/electronic media

The metadata inputs by each of the self-archiving-author for the 983 E-Prints in the Live Archives of eprints.rclis.org considered for the present case study included.

- **Type of source**
- **Deposited On (Month and year)**
- **Status (published/unpublished)**
- **Refereed (Yes/No)**
- **Public Domain (Yes/No)**
- **Authors**
- **Subjects (JITA classification)**
- **Year (Publication Year)**
- **Abstract (for Readability Analysis)**
- **Publication/source (Journal)**
- **Alternative Locations (No link/Single Link/Mulliple Links)**
- **Keywords**

7. METHODS

The word "**Modern**" does not signify any longer just a certain period-a few specified centuries-in human history, it signifies a certain cast of mind (Mukhopadhyay 2004). The 20th century may be described as the century of the development of metric sciences. In this century itself there were the developments of librametrics, bibliometrics, scientometrics, technometrics, biometrics, sociometrics, econometrics, cybermetrics or webometrics (Sen 2004), and lastly informatics.

The term "**Librametry**" was coined by S. R. Ranganathan on 18th September 1948 while giving remarks on the speech by Prof. Bernal, who had referred to library statistics in his lecture at the Leamington Spa, annual conference of Aslib (Aslib, 1949, Ranganathan, 1969; and Subba Rao, 1993). The term "**Librametry**" is similar to the term "**Geometry**" which was for the measurement of land on the surface of the Earth. But now "**Geometry**" deals with all sorts of shapes and sizes. Similarly, instead of continuing as "**Librametry**" which was in vogue for some time in India, and it continued as "**Librametrics**".

The term "**bibliometrics**" was first used by Pritchard (1969) to replace the name "**statistical bibliography**" for the growing field of quantitative analysis of bibliographies. For some years, however, both "**bibliometry**" and "**bibliometrics**" were in vogue. Borgman and Furner (2002) have reviewed the relationship of scholarly communication and bibliometrics.

"**Bio-bibliometrics**" deals with biographical life-time achievements of an individual. Sen coined the term "Bio-bibliometrics" and Gan (1990) to quantitatively document, analyse and establish functional relationships between bio-data and biblio-data elements. There are many Bio-bibliometrics studies, but appearance of the term "**Bio-Bibliometrics**" (Tiew 1999) and "**Bibliometric**" (Subramanyam 1983, Sinha and Dhiman 2001, Sen and Karanjia 2003), "**Bibliometrics**" (Kragh 1990) is rare in title of an article.

A few other terminologies documenting works of individuals are: "**Statistics of Individual variations of Productivity**" (Shockley 1975), "**Research Collaborator**" (Kademani et. al. 2002), "**Citation Analysis**" (Ruff 1979 and Gupta 1983), "**Impact**" (Cawkell and Garfield 1980), "**Citography**" (Gupta and Gupta 1983), " **Publication Activity**" (Todorov and Winterhager 1991), "**Visible Scientist**" (Brittain 2000), "**Bibliometric Indicator** (Kademani and Kalyani 1996), "**Influence Examined Bibliometrically**" (Lancaster 1992, Lancaster 1993) and "**Outstandingly Cited**" (Kademani and Kalyane 1996).

Currently "**Bio-bibliometrics**" term is used in Biosciences, Genetics, Biomedical sciences, Population Genetics, Genome analysis, etc. For a method of retrieving and visualising biological information that uses co-occurrence of gene naming terms in Medical Sciences to generate semantic links between genes (Stapley and Benoit)

Russians' independently used the term "**Scientometrics**" (Nalimov 1966) in late sixties. For quantitative aspects of studies in "**science of science**". Now scientometrics means Scientometric dimensions (Kalyane and Kalyane 1991, Swarna et. al. 2002), studies of quantitative aspects of science of science and technology and would include "**Technometrics**" as well.

CD-ROM databases were used as source of for R & D mapping (Kalyane and Kadam 1998a, Kalyane and Kadam 1998b, Deokattey et. al. 2001, Deokattey et. al. 2003, Kalyane and Kadam 2001, Kalyane and Kadam 2002, Vijai Kumar et. al. in press)

Kalyane and Kalyane (1993) used the phrase "**Scientometric Portrait**" to document bio-bibliometric studies on scientist and continued to do so (Kademani et. al 1994a, Kademani et. al 1994, Kalyane and Kademani 1994, Kalyane and Kalyane 1994, Kalyane 1995, Kalyane and Kademani 1995, Kademani 1996a, Kademani 1996b, Kalyane and Sen 1996, Kalyane and Kademani 1997, Kademani and Kalyane 1998, Kalyane and Sen 1998, Kademani 1999, Kademani 2000, Kalyane 2001, Kademani 2001, Kalyane and Sen 2002, Kademani 2002, Munnolli and Kalyane 2003, Koganuramath 2003, Kalyane V. L. 2004, Angadi et. al. 2004). Similarly, "**Informetrics**" term was used to document contributions of individual scientist in some of the papers (Kalyane and Devarai 1994, Kalyane and Samanta 1995) and

Devarai et. al. (1998) used "**Informetrics**" for a Sociologist. "**Information profile**" (Sinha and Bhatnagar 1980, Sinha and Ullah 1994) "**citation Profile**" (Sinha and Ullah 1993), "**Micro-Bibliometrics**" (Sen 1994), "**Scientometric Appreciation**" (Russton 2001), "**Research Productivity**" (Kalyane and Sen 2003), "**Bibliographic Analysis**" (Mahapatra 1992) phrases were also used. Kragh (1990) had used the phrase "**Scientific Biography**".

"**Informetrics**" (Kalyane V. L. 1993, Venkataramana P. et. al. 1994, Kalyane V. L. and Kadam S. N. 1998), should be considered as quantitative aspects of all informational processes. This would include bibliometrics and librametrics. Bibliometrics may be considered as a means of quantitative studies of sociocultural evolution through bibliographic records. In this a part of scientometrics depends on bibliometrics. Librametrics would mean all of the quantitative aspects of library, information centre and data base services and management. Informetrics and scientometrics have many overlapping fields of studies.

The term "**Bibliographics**" is used to mean the various graphic representations that can be made out of any bibliometric study. Bibliometrics/ Scientometrics/ Informetrics as a discipline uses quantitative methods to map the status and development of scientific knowledge and technical innovation communication productivity through research output parameters such as number of publications or patents. Due to the availability of fairly comprehensive databases on publications and patents, it has now become possible to arrive at fairly rapid estimates of the nature and extent of scientific or technological activity at the national, regional and global level. This makes scientometrics and informetrics (Figure 7.1) an important tool for managers, funding agencies and Institutions. Information on the nature of collaborative activity, multivariate comparisions between countries and between states and regions within a country. In terms of their research priorities, relative contributions made by major scientific organisations, universities and Industrial houses, can also provide useful Input to policy planners and managers. New text and language processing techniques such as co-word or co-authorship analyses have enabled the mapping of cognitive linkages, with a potential of indicating emergent areas of activity. with implications for policy. Research information is published through scientific journals. reports, books and patents. The

number of publications is growing at an ever increasing pace. To facilitate the handling of the multitude of information. reference Journals are published.

Historically speaking, bibliometrics and scientometrics are both products of our receding print mode of communication and cybermetrics is a product of the emerging electronic mode of communication. Together they form a long lineage of metric techniques, each of which are relevant to our inquiry into the commensurability between metric approaches and varied theoretical priorities. Stated another way, this analysis rests on the cusp of those approaches which view mediated communication as a symbolic phenomenon and the metric approaches that aim to model its properties. (Zelman, 2002).

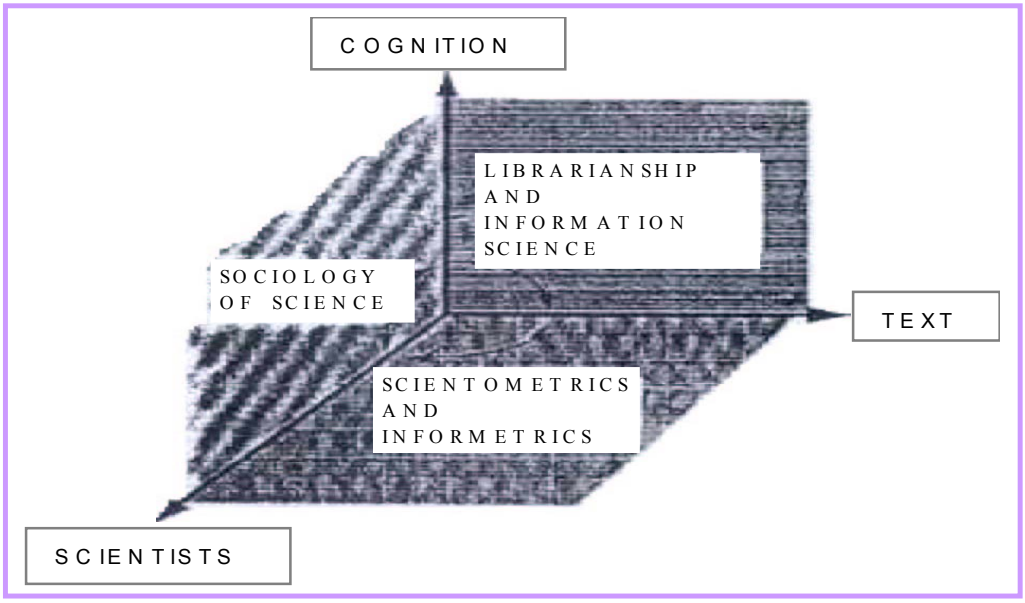

Figure 7.1: The study of science as a multldimentional problem

Like bibliometrics and scientometrics, cybermetrics shares a common emphasis on co-analysis. Cybermetrics is used here as a broad term meant to incorporate a number of notable developments; namely, infometrics, webometrics, and cybermetrics. **Infometrics** was formalized as a research agenda in the 1980s and differs from bibliometrics and scientometrics in that the latter refer solely to communications media and the sciences. Infometrics is neither limited to specific media nor the sciences; it refers to the quantitative analysis and modelling of a myriad of different information sources including credit databases, information flow on the Internet, and genetic histories for such purposes as demographic monitoring, enhanced surveillance of

workplace activities, and insurance eligibility (Egghe & Rousseau, 1995). Abraham develops the field of what he terms '**Webometry**' whereby he aims to sort the complexity of the World Wide Web by creating a chronotopography (Abraham 1996, Abraham 1999). And Almind and Ingwersen (1997) use infometric methods for webometric analyses. Elsewhere, Ingwersen (1998) offers a means of calculating Web Impact Factors by adopting infometric methods to test national, sector and institutional impact factors.

A three-dimensional space such as the one depicted in Figure 7.2 can be used to describe all kinds of bibliometric questions that can be phrased in terms of discipline, geographic area and institution. Along the geographic dimension it is possible to reach different levels of granularity: World, Nations, Regions, Provinces, Towns: similarly, Institutions can be subdivided into state-wide ones, local universities, single branches of department, laboratories, firms (Balestri 2001). This can be further extended to a research group and pivotal mentorship by an individual scientist. Discipline-wise orientation may include basic sciences like Biology, Taxonomy, Anatomy, Genetics, Cytogenetic, Biotechnology, etc. or multidisciplinary approaches.

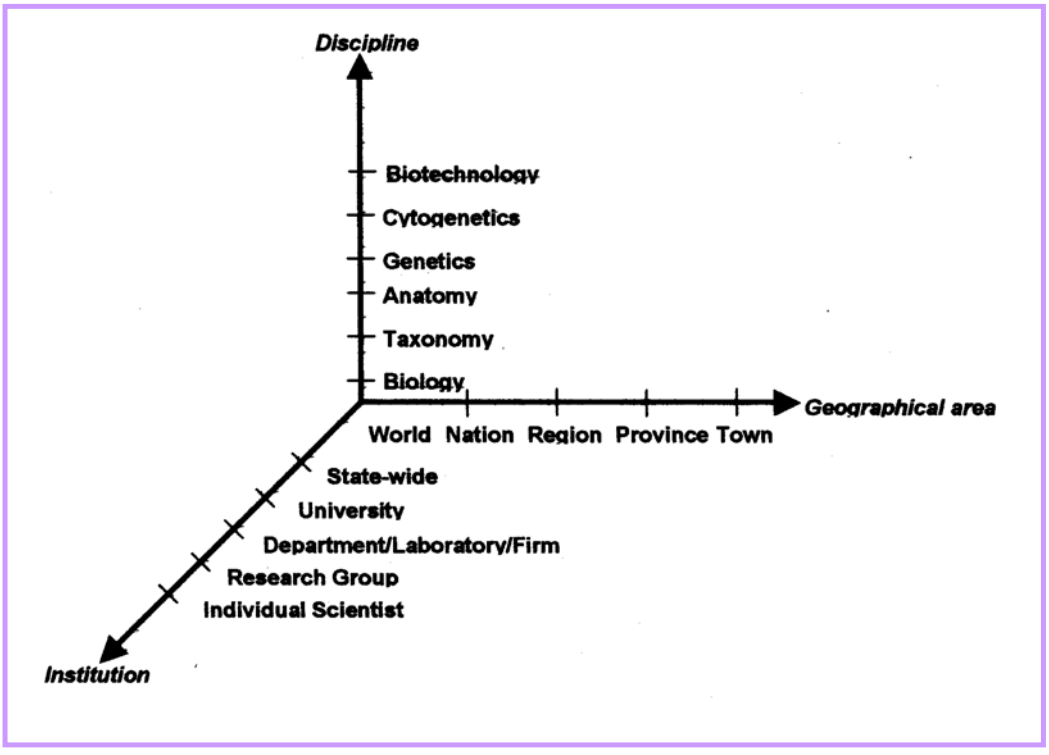

Fig. 7.2: Three dimensional Space to be Explored by Bibliometricians

Scientometric studies on journals have also been carried out (Kalyane and Sen 1995, Prakasan et.al. 2001, Swarna et. al. 2002)

Indian contributions in the field of Librametrics/ Bibliometrics/ Scientometrics/ Informetrics are scattered in: *Annals of Library Science and Documentation*; *IASLIC Bulletin*; *Scientometrics*; *Library Science with a slant to Documentation and Information Studies*; *ILA Bulletin*; *Journal of Scientific and Industrial Research*; *Journal of Library and Information Science*; *Library Herald*; *International Information*, *Communication and Education*; *Herald of Library Science; Journal of Information Science*; *International Library Reviews*; *Current Science*; *Indian Journal of Agricultural Library and Information Science*; *Lucknow Librarian*; *Science Age*; *Science Today*; *Malaysian Journal of Library and Information Science*; *SRELS Journal of Information Management*; *Bulletin of IAALD*; *Czech Journal of Physics*; *Environmental Science and Technology*; *IEEE Transactions on Engineering Management*; *IEEE Transactions on Professional Communication*; *Information Processing and Management*; *International Forum for Information and Documentation*; *Journal of American Society of Information Science*; *Nature*; *R&D Management*; *Special Libraries*; *UNESCO Bulletin for Libraries*; *World Patent Information*; *Journal of Information Sciences*; *Journal of Information*; *Library and Society*; *JISSI: The International Journal of Scientometrics and Informetrics*; *Kelpro Bulletin*; etc. besides various books; chapters in books; compilations of selected papers; conference papers; workshops; seminars; training programmes; etc. (Egghe, Rousseau 1995)

The ten core **Metadata elements** (Howarth 2004) include:

Subject: terms, keywords, or phrases that describe, identify, or interpret the intellectual content of a work and what it depicts or expresses;

Date: a day, month, year, etc., associated with a work that could describe when the work was created, published, modified, accessed, etc.;

Conditions of use: a day, month, year, etc., associated with a work that could describe when the work was created, published, modified, accessed, etc.

Publisher: the name, location, and other identifying and/ or contact information for an entity responsible for making a resource available, whether by production, manufacture, maintenance, distribution, etc.;

Name assigned to the resource: often referred to as title, the identifying word(s), phrase(s), character(s), or group of characters given to a work.;

Language/mode of expression: the language, sublanguages, dialects, etc., of the intellectual content of the work;

Resource identifier: unique names or numbers associated with a work that are used consistently to distinguish one resource from another;

Resource type: information describing what the resource is, rather than what it is about -its physical format, rendering, appearance, or construction of the work;

Author/Creator: name(s) of organization(s) or individual(s) responsible for creating or compiling the intellectual or artistic content of the work; and

Version: information on the version, edition, or adaptation of a particular work.

7.1 Methods of Present study

Present study is **Exploratory,** which investigates into new or relatively unknown territory for the purpose of searching out or closely scrutinizing object or phenomena to lead to a better understanding of them.

Normal count procedure (Kalyane and Vidyasagar Rao, 1995) is used throughout the collection of data.

Normal count is one score for every occurrence of the same author in the bylines of publications or the same source channel of communications used or the same keyword, etc.

Channels of communication are the sources chosen by the author to communicate research.

Collaboration coefficient is the ratio of the number of collaborative papers to the total number of papers published during a fixed period of time.

Core collaborators are those authors who have made substantial contribution (in terms of the number of papers) in association with the principal author.

Principal author is the one who is/was common author among the authors forming a collaborative group in byline of all publications.

Productivity is the measure of the number of publications brought out by the author. Productivity coefficient is the ratio of the productivity age (corresponding to the 50 percentile productivity) to the total productivity life.

Readability is the likelihood that a projected audience will be able to read and comprehend a piece of documentation. It is an extremely important aspect of writing in any technical field (Sides 1999).

Readability study of the random sample of 200 Abstracts from the Metadata of E-Prints in the Live Archives of the eprints.rclis.org were taken into consideration for present study. The type Meta-analysis includes a procedure for combining results of research across areas in which measurement systems are not precise by adding together sources of variance to get a population value of the standard deviation as the basis for establishing effect sizes used in assembling meaningful literature reviews.

The Fog Index is calculated as follows:

		The total number of words		Number of hard words **X** 100	
Fog Index	=	÷	+	÷	**X** 0.4
		The total number of sentences		Total number of words	

Readability measures are primarily based on factors such as the number of words in the sentences and the number of letters or syllables per word (i.e., as a reflection of word frequency). Two of the most commonly used measures are the Flesch Reading Ease formula and the Flesch-Kincaid Grade Level.

Flesch reading Ease The output of the Flesch Reading Ease formula is a number from 0 to 100, with a higher score indicating easier reading. The average document has a Flesch Reading Ease score between 6-70. The formula reads as follows:

206.835 – (1.015 x ASL) – (84.6 x ASW)

where:

ASL = average sentence length (the number of words divided by the number of sentences)

ASW = average number of syllables per word (the number of syllables divided by the number of words)

Flesch-Kincaid Grade Level

The more common Flesch-Kincaid Grade Level formula converts the Reading Ease Score to a U.S. grade-school level.

(.39 x ASL) + (11.8 x ASW) – 15.59

where:

ASL = average sentence length (the number of words divided by the number of sentences)

ASW = average number of syllables per word (the number of syllables divided by the number of words

In addition, more than 40 readability formulas have been developed over the years (Klare, 1974-1975). Readability measures guide the construction of textbooks such that the readability conforms to the intended grade level. However, there are at least three major problems with readability formulas that prevent valid predictions of text comprehension.

Random sampling from 283 E-Prints in the Live Archives by considering ID Code consisted of 200 Abstracts. The sample was subjected to Readability analysis using the software Writing Sample Analyzer © by Aella Lei (Lei 1996) downloaded from http://resources.aellalei.com/writer/sample.html
These Abstracts were input by the self-archiving depositors.

The data was quantitatively analyzed (Kalyane et al 2003, Kalyane et al 2004) after sorting into single domain subjects and multi-domainary subjects of the archives. Study was delimited to Single Domain Subjects for the Domainwise data. Interdomainary EPrints metadata was analyzed separately. Bibliographic Metadata was converted to bibliometric database and it was transformed into Bibliographics (Kalyane and Kadam 2001). Softwares used for the study included: MS-Office, Origin 4.0, LibSoft Release 3.08 for metadata saperation (Vidyarthi 2003). The data was analysed and presented.

8. RESULTS AND DISCUSSION

The priority for ideas and philosophy related to "Network Theory" have been traced back and documented by Braun (2004), and credit goes to Karinthy (1929). The IT has empowered to realise it, as the most practical phenomena and it is no more a humour. The OAI (Open Archives Initiatives) and ACIS (Academic Contributor Information System) are progressive in the direction, which may lead to realise the "Collective Genius" at global level. Karinthy must have had the vision of the so-called "small world phenomenon" and must have proposed "Láncszemek' ("Chain links") in his collection of humorous stories. As this work was never translated into English, and Karinthy's work is not well known outside Hungary, it is but natural that neither de Solla Pool and Kochen (1978), and Milgram (1967) nor Garfield (1981) could have read and cited Karinthy. Hence, the origin of the current thoughts related to Open Archives Initiatives (OAI) can be traced back to 1929 as the embryology of knowledge or knowledge generating system at individual level (Swarna et al 2004).

8.1 Survey of the Status of E-prints in the Live Archives in the Library and Information Science related disciplines

There are six well known digital EPrints Archives/Repositories in the Library and Information Science discipline. Status upto 23 June 2004 is documented in Table 8.1. The trends are dedected in Fig 8.1.

Table 8.1: Yearwise status of six well known digital EPrints Archives/Repositories in the Library and Information Science discipline

Year	E-LIS	@rchiveSIC	LDL	DLIST	MEMsic	Caltech	Total
1965	1						1
1989	2						2
1990	3						3
1991	2						2
1992	6						6
1993	2	1		1	1		5
1994	7						7
1995	27	2		3	1		33
1996	25	1		2	0		28
1997	25	5		0	0		30
1998	13	3		5	0		21
1999	58	11		6	0	1	76
2000	71	26	30	7	10	3	147

Continued …

Year	E-LIS	@rchiveSIC	LDL	DLIST	MEMsic	Caltech	Total
2001	145	30	34	23	9	5	246
2002	175	72	29	33	4	9	322
2003	293	170	37	33	9	6	548
23 Jun-2004	85	27	33	14	0	2	161
Total	940	348	163	127	34	26	1638
%	57.39	21.25	9.95	7.75	2.08	1.59	100

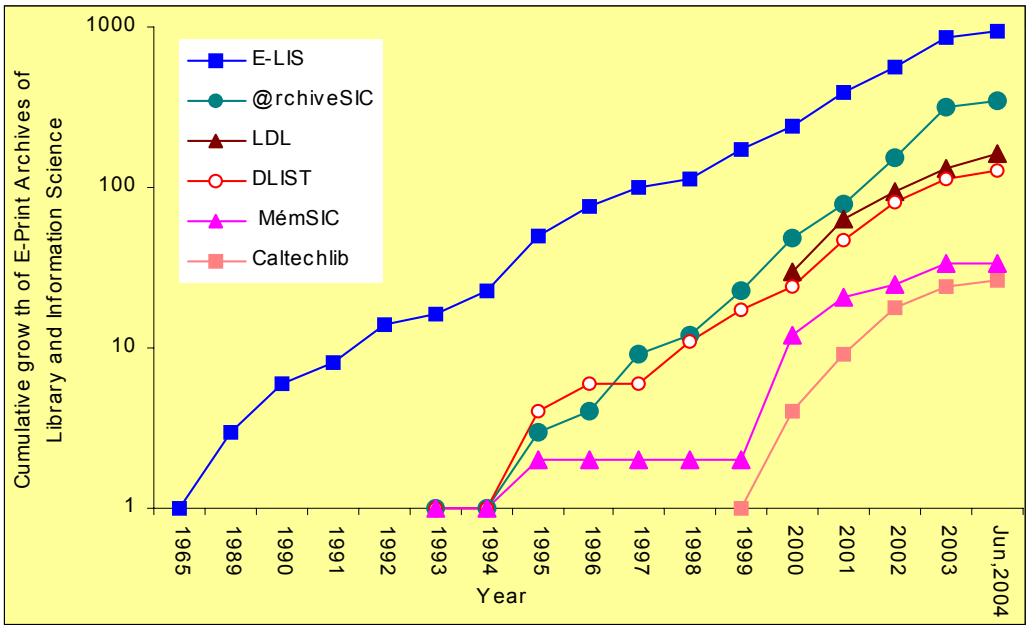

Fig. 8.1: Growth of Digital E-Print archives and current status of Open Archives Initiatives in the Library and Information Science discipline

Name of the Eprint archives services and web addresses

E-LIS (EPrints in Library and Information Science) http://eprints.rclis.org;

@RchiveSIC http://archivesic.ccsd.cnrs.fr/;

LDL (Librarians' Digital Library) https://drtc.isibang.ac.in/;

DLIST (Digital Library of Information Science and Technology) http://dlist.sir.arizona.edu/;

MémSIC http://memsic.ccsd.cnrs.fr/;

Caltechlib (Caltech Library System Papers and Publications)

8.2 Identification of LIS (Library and Information Science) E-Print Archives having highest E-Prints in the Live Archives

E-LIS is an International open access archive for EPrints on Library, Information Science and relented discipline. The E-print archives in the E-LIS at http://eprints.rclis.org were highest (940) as on 23 June-2004. Hence, further study was undertaken on this one archives only.

Present Study has been delimited to:

8.3.1 **C**lassification system used and developed by whom
8.3.2 **T**ype of source
8.3.3 **D**eposited On (Month and year)
8.3.4 **S**tatus (published/unpublished)
8.3.5 **R**efereed (Yes/No)
8.3.6 **P**ublic Domain (Yes/No)
8.3.7 **A**uthors
8.3.8 **S**ubjects (JITA Classification System)
8.3.9 **Y**ear (Publication Year)
8.3.10 **A**bstract (for Readability Analysis)
8.3.11 **P**ublication/source (Journal)
8.3.12 **A**lternative Locations (No link/Single Link/Multiple Links)
8.3.13 **K**eywords

Fig. 2: Sequence of data analysis and presentation

Author-Self-Archiving Metadata from the 983 EPrints in the E-LIS live archives of Library and Information Science at site http://eprints.rclis.org till 7th July, 2004, which were processed as per JITA subject classification were used.

8.3 E-LIS study as per JITA Classification System

The focus on the identified highest status E-Print Archives for further quantitative documentation included following:

8.3.1 Classification system used and developed by whom ?

JITA Classification System for Library and Information Science

A = Theoretical and general aspects of libraries and information;
B = Information use and sociology of information;
C = Users, literacy and reading;
D = Libraries as physical collections;
E = Publishing and legal issues;
F = Management;
G = Industry, profession and education;
H = Information sources, supports, channels;
I = Information treatment for information services (Information functions and techniques);
J = Technical services libraries, archives and museums;
K = Housing technologies; and
L = Information technology and library technology

Photographs of the authors of JITA Classification System were downloaded by surfing the Internet resources and are presented in Fig. 8.3. The photographs were verified by communicating with the each one of the authors.

JITA is an acronym of the author's first name

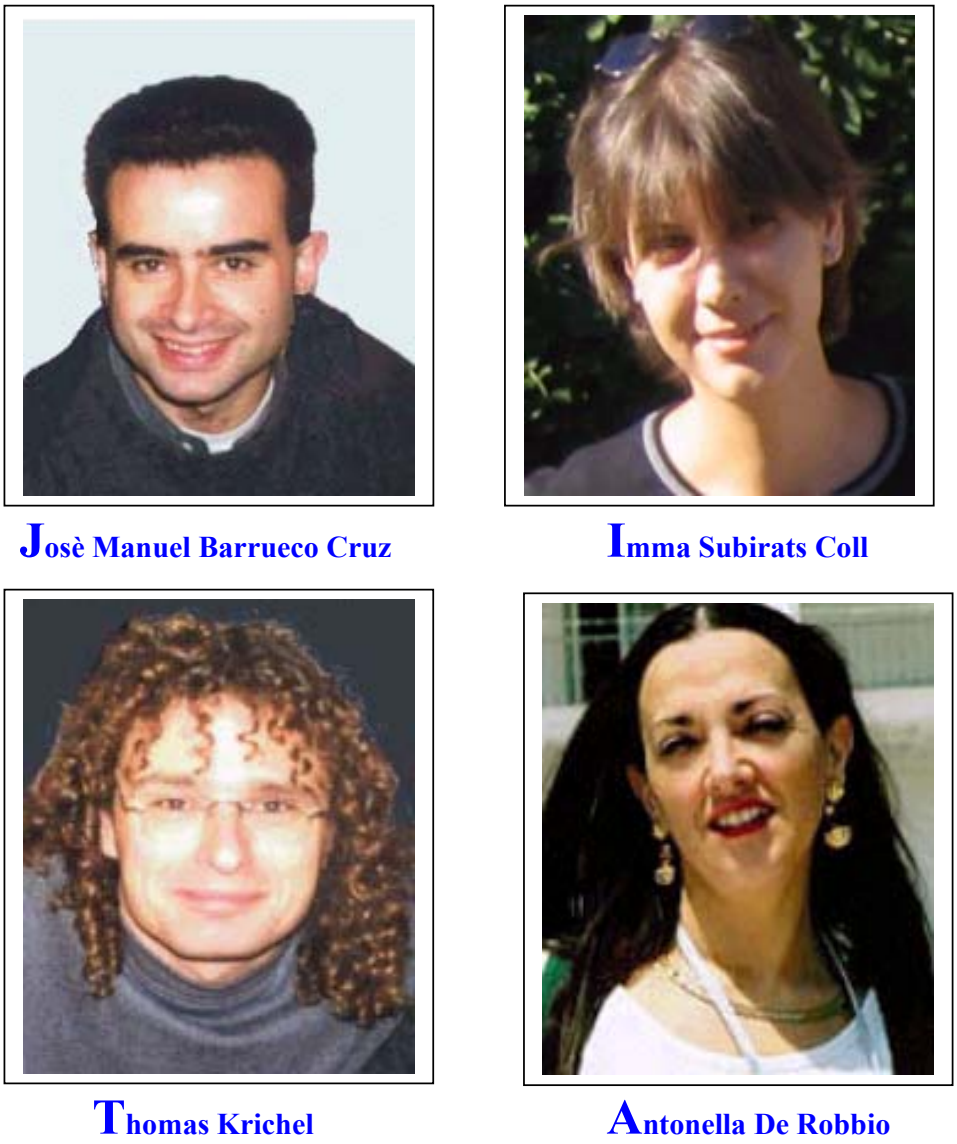

Fig. 8.3: JITA

8.3.2 Type of source (Conference Paper, Journal Article, etc.)

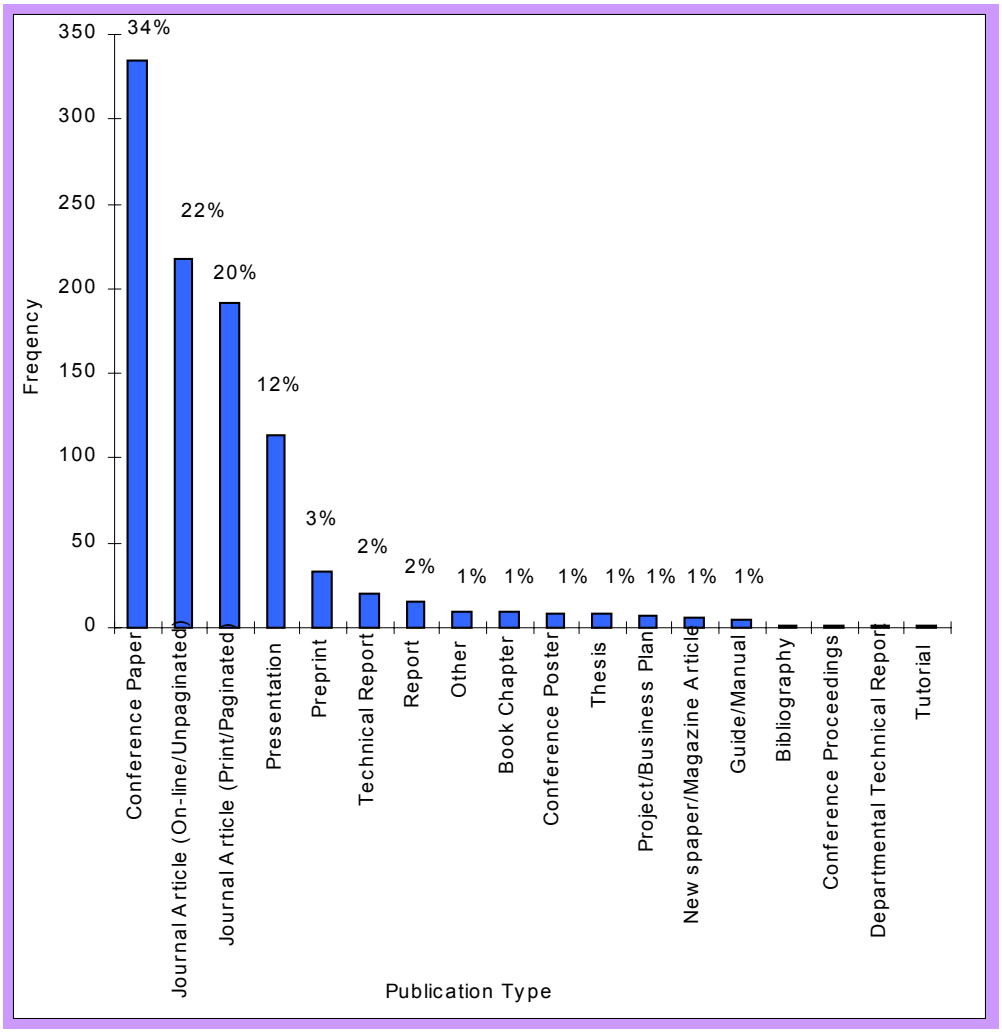

Fig. 8.4: Frequency, Percentage and growth of Publication Types in the author self archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July,

Table 8.2: Publication-type-wise number of E-Prints in the live archives at site eprints.rclis.org upto 7th July, 2004

Publication Types	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum. %
	A	B	C	D	E	F	G	H	I	J	K	L				
Conference Paper	5	24	7	9	22	9	8	24	55	7	0	47	118	335	34.1	34.08
Journal Article (On-line/Unpaginated)	5	6		7	12		11	32	11	4		8	121	217	22.1	56.15
Journal Article (Print/Paginated)	13	36	2	11	4	1	12	28	21	6		12	46	192	19.5	75.69
Presentation			2	2	2	1	3	20	4	1		11	68	114	11.6	87.28
Preprint	2	4			9				2	1		6	9	33	3.36	90.64
Technical Report		4	1		1	1	1	4	1			1	6	20	2.03	92.68
Report		3			3			2				1	6	15	1.53	94.2
Other	1								6	1		1	1	10	1.02	95.22
Book Chapter		1					1	3		1			3	9	0.92	96.13
Conference Poster		2								1		1	4	8	0.81	96.95
Thesis	1				1	1			1				4	8	0.81	97.76
Project/Business Plan					1					1		2	3	7	0.71	98.47
Newspaper/Magazine Article					2					1		1	2	6	0.61	99.08

Publication Types	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum. %
	A	B	C	D	E	F	G	H	I	J	K	L				
Guide/Manual										1		1	3	5	0.51	99.59
Bibliography				1										1	0.1	99.69
Conference Proceedings			1											1	0.1	99.8
Departmental Technical Report													1	1	0.1	99.9
Tutorial											1			1	0.1	100
Total	27	80	13	30	57	13	36	113	101	25	1	92	395	983	100	
%	3	8	1	3	6	1	4	12	10	3	0	9	40.2	100		

(A = Theoretical and general aspects of libraries and information; B = Information use and sociology of information; C = Users, literacy and reading; D = Libraries as physical collections; E = Publishing and legal issues; F = Management; G = Industry, profession and education; H = Information sources, supports, channels; I = Information treatment for information services (Information functions and techniques); J = Technical services libraries, archives and museums; K = Housing technologies; L = Information technology and library technology, and IND = Inter-domainery i.e. having specifications of two or more than two classes); Cum = Cumulative.

8.3.3 Deposited on (month and year)

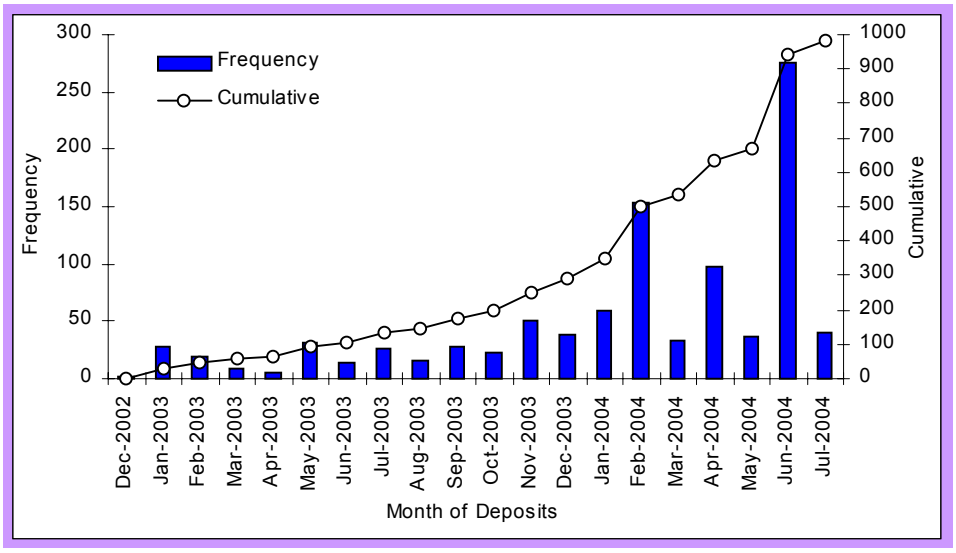

Fig. 8.5: Time series analysis of deposits in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

Table 8.3: Year-wise monthly deposits and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

Year of deposit	Month of deposit	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum. %
		A	B	C	D	E	F	G	H	I	J	K	L				
2002	Dec					1									1	0.10	0.10
2003	Jan		3		1	2		2	3	1			1	15	28	2.85	2.95
2003	Feb		1			3			4	6	1		1	3	19	1.93	4.88
2003	Mar					1			3		2			3	9	0.92	5.80
2003	Apr				1	1					1		1	1	5	0.51	6.31
2003	May	1	1	1	1	3			4	6	2		1	11	31	3.15	9.46
2003	Jun		1			2				2	1			8	14	1.42	10.89
2003	Jul		1	1		4		1	1	9			2	7	26	2.64	13.53
2003	Aug					1				8				6	15	1.53	15.06
2003	Sep				1					17			1	9	28	2.85	17.90

Year of deposit	Month of deposit	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum. %
		A	B	C	D	E	F	G	H	I	J	K	L				
2003	Oct		1		1	2		2	2	2			1	12	23	2.34	20.24
2003	Nov		1	1		2	1	2	19	11	1			13	51	5.19	25.43
2003	Dec	1					2	1	5		2		4	24	39	3.97	29.40
2004	Jan	3	1			4		2	6	4	2	1	4	32	59	6.00	35.40
2004	Feb	1	12	4	9	6	1	4	20				19	78	154	15.67	51.07
2004	Mar	3	1		1	1		2	2		1		3	19	33	3.36	54.43
2004	Apr	4	21	2		3		1	4	1	1		27	33	97	9.87	64.29
2004	May		9			9			3	3	1		1	10	36	3.66	67.96
2004	Jun	14	27	4	14	5	7	13	34	28	10		24	95	275	27.98	95.93
2004	Jul				1	7	2	6	3	3			2	16	40	4.07	100
Total		27	80	13	30	57	13	36	113	101	25	1	92	395	983		
%		3	8	1	3	6	1	4	12	10	3	0	9	40	100		

8.3.4 Status (published/unpublished)

Table 8.4: Status of publication and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

Publication Status	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum %
	A	B	C	D	E	F	G	H	I	J	K	L				
Published	22	70	5	20	27	12	32	96	53	16	1	72	324	750	76.30	76.30
Unpublished	3	5	7	10	18	1	2	13	43	6		13	51	172	17.50	93.79
Priprint	2	4			9				2	1		6	9	33	3.36	97.15
In Press		1	1		3		2	4	3	2		1	11	28	2.85	100
Total	27	80	13	30	57	13	36	113	101	25	1	92	395	983		

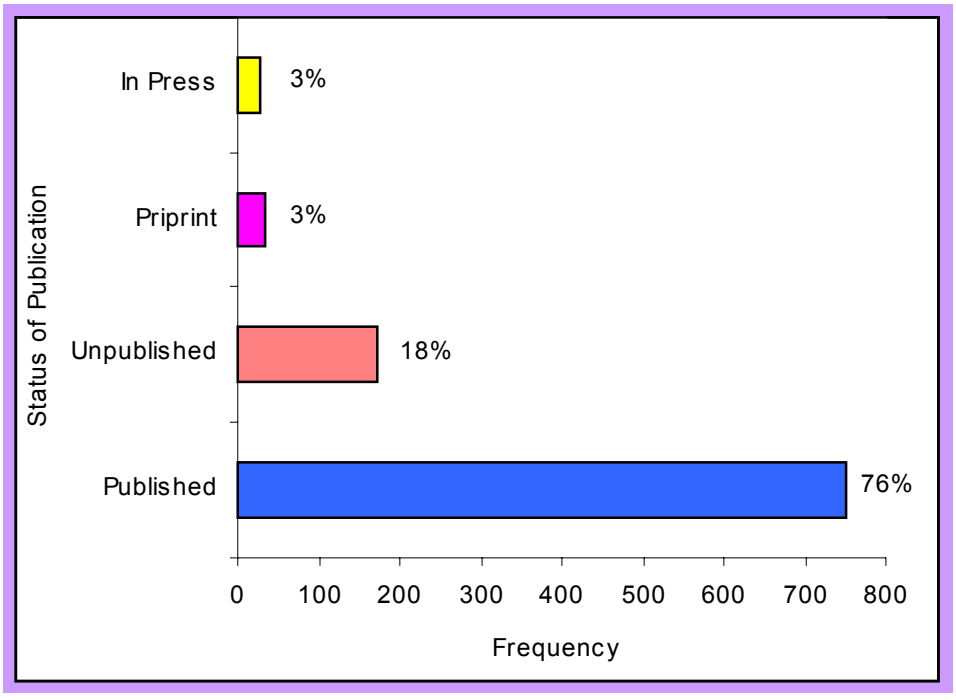

Fig. 8.6: Published, unpublished, preprint, inpress status of Publication in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

Table 8.5: Refereeing status of publication and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

Refereed	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum %
	A	B	C	D	E	F	G	H	I	J	K	L				
No	8	24	7	19	41	5	19	60	61	11		58	200	513	52.2	52.19
Yes	19	56	5	10	15	7	17	53	40	12		31	189	454	46.2	98.37
Unspecified			1	1	1	1				2	1	3	6	16	1.63	100
Total	27	80	13	30	57	13	36	113	101	25	1	92	395	983		

(A = Theoretical and general aspects of libraries and information; B = Information use and sociology of information; C = Users, literacy and reading; D = Libraries as physical collections; E = Publishing and legal issues; F = Management; G = Industry, profession and education; H = Information sources, supports, channels; I = Information treatment for information services (Information functions and techniques); J = Technical services libraries, archives and museums; K = Housing technologies; L = Information technology and library technology, and IND = Inter-domainery i.e. having specifications of two or more than two classes); Cum = Cumulative

8.3.5 Refereed (Yes/No)

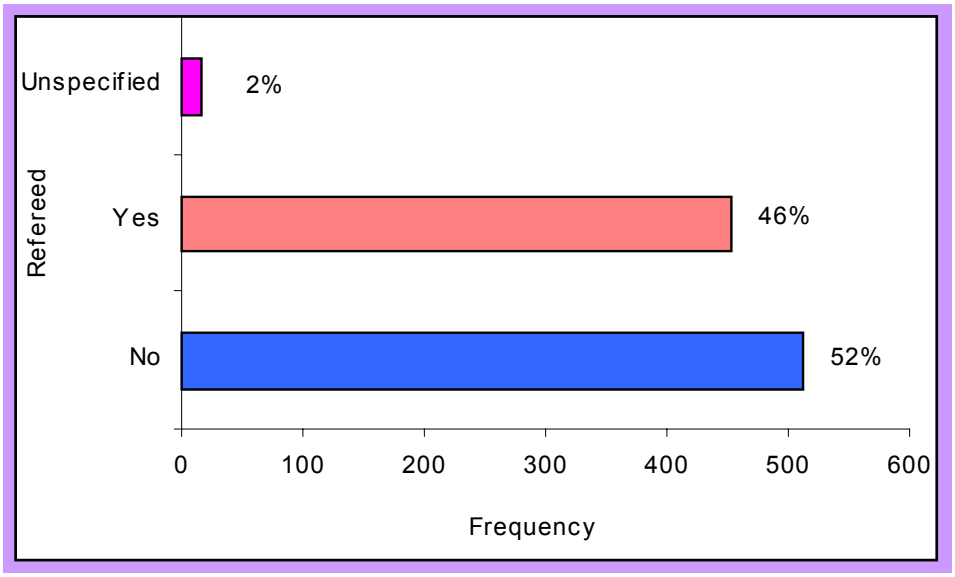

Fig. 8.7: Refereeing Status of Publication in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

8.3.6 Public Domain (Yes/No)

Table 8.6: Public Domain status of publication and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

Public Domain	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum %
	A	B	C	D	E	F	G	H	I	J	K	L				
No	20	57	3	5	45	5	16	63	64	12		61	237	588	59.82	59.817
Yes	7	23	10	25	12	8	20	50	37	13	1	31	158	395	40.18	100
Total	27	80	13	30	57	13	36	113	101	25	1	92	395	983		

(A = Theoretical and general aspects of libraries and information; B = Information use and sociology of information; C = Users, literacy and reading; D = Libraries as physical collections; E = Publishing and legal issues; F = Management; G = Industry, profession and education; H = Information sources, supports, channels; I = Information treatment for information services (Information functions and techniques); J = Technical services libraries, archives and museums; K = Housing technologies; L = Information technology and library technology, and IND = Inter-domainery i.e. having specifications of two or more than two classes); Cum = Cumulative

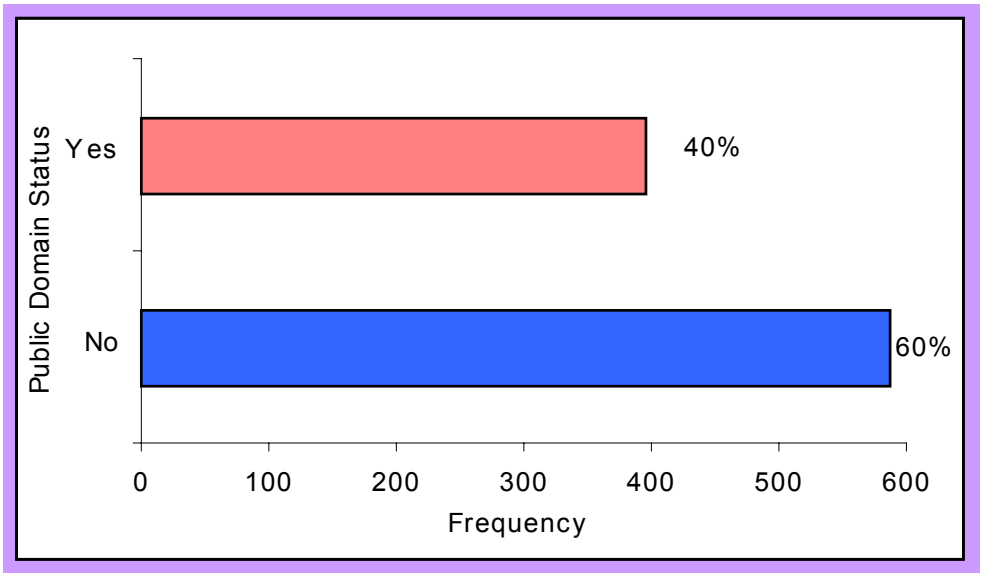

Fig. 8.8: Public Domain Status of Publication in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

8.3.7 Authors

8.3.7.1 Authorship Pattern

In case of *The Electronic Journal of Information Systems in Developing Countries* there were more multi authored publications.

In the Live Archives at the http://eprints.rclis.org. Multi-authored E-Prints were 24.1% and single-authored E-Prints were 75.9% (see Table 8.8 to 8.10 and fig. 8.9).

Table 8.7: Identification of the Collaboration Coefficient (in descending order) of E-Prints in the Live Archives at the http://eprints.rclis.org

Domain	B	C	F	I	J	IND	H	L	E	D	G	A	K
Single	44	8	8	63	19	309	89	75	47	25	32	26	1
Multiauthored	36	5	5	38	6	86	24	17	10	5	4	1	0
Total	80	13	13	101	25	395	113	92	57	30	36	27	1
Collaboration Coefficient	0.45	0.38	0.38	0.38	0.24	0.22	0.21	0.18	0.18	0.17	0.11	0.04	0

(A = Theoretical and general aspects of libraries and information; B = Information use and sociology of information; C = Users, literacy and reading; D = Libraries as physical collections; E = Publishing and legal issues; F = Management; G = Industry, profession and education; H = Information sources, supports, channels; I = Information treatment for information services (Information functions and techniques); J = Technical services libraries, archives and museums; K = Housing technologies; L = Information technology and library technology, and IND = Inter-domainery i.e. having specifications of two or more than two classes)

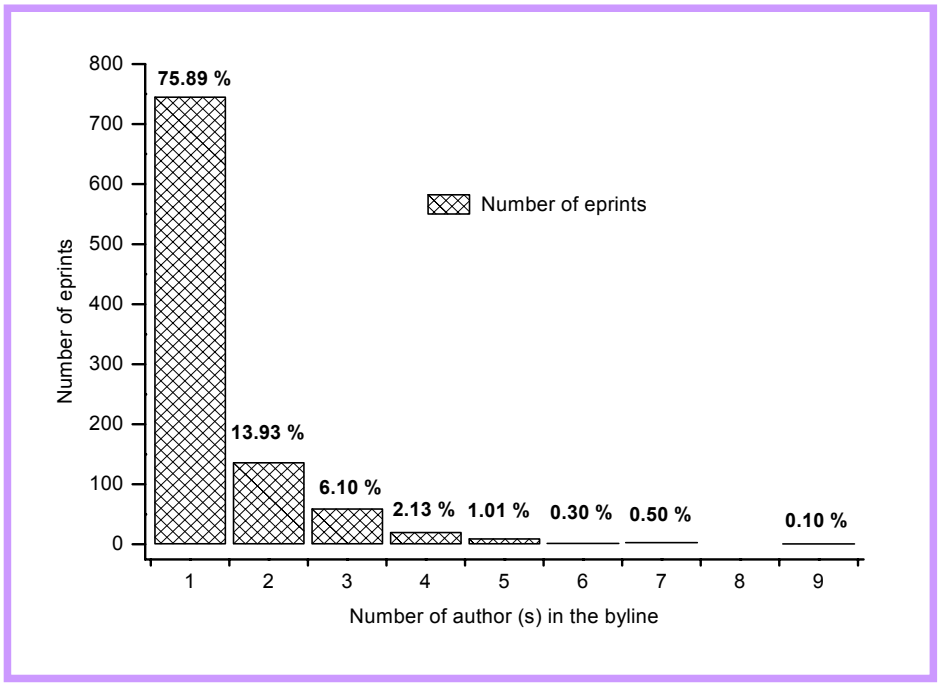

Fig. 8.9: Authorship pattern in the byline of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

Table 8.8: Identification of the mega-authored (five or more authors in the byline) E-Prints in the Live Archives at the http://eprints.rclis.org

Sl.N.	Author	PY	No of Authors
1.	Prakasan, E. R.; Sagar, Anil; Kumar, Anil; Mohan, Lalit; Gaderao, C. R.; Surwase, Ganesh; Kadam, Sandeep; Kalyane, V. L.; Kumar, Vijai	2004	9
2.	Prakasan, E.R.; Anil, Kumar; Anil, Sagar; Lalit, Mohan; Kalyane, V.L.; Kumar, Vijai; Upadhye, Rekha P.	2003	7
3.	Prakasan, E. R.; Kumar, Anil; Sagar, Anil; Mohan, Lalit; Singh, Sanjay Kumar; Kalyane, V. L.; Kumar, Vijai	2003	7
4.	González Teruel, A.; Abad García, MF.; Castillo Blasco, L.; Campón Gozalbo, J.; Bayo Calduch, P.; Martinez Catalán, C.; Armengol Noguera, V.	2002	7
5.	De Robbio, Antonella; Mozzati, Paola; Lazzari, Luigina; Maguolo, Dario; Bozzano, Antonella; Ferri, Cristina; Gradito, Paola	2002	7
6.	Baldazzi, Anna; Bogliolo, Domenico; Carosella, Maria Pia; Diozzi, Ferruccio; Franco, Augusta; Maffei, Lucia; Negrini, Giliola	2001	7
7.	Kalyane, V. L.; Sagar, Anil; Kumar, Anil; Kumar, Vijai; Mohan, Lalit; Prakasan, E. R.	2003	6
8.	Peset Mancebo, Fernanda; Ferrer Sapena, Antonia; Lloret Romero, Núria; Tolosa Robledo, Lluisa; Moreno Núñez, María T.; Díaz Novillo, Susana	2003	6
9.	De Robbio, Antonella; Mozzati, Paola; Lazzari, Luigina; Maguolo, Dario; Dolfino, Manuela; Gradito, Paola	2002	6

Sl.N.	Author	PY	No of Authors
10.	Vehabovic, Midhat; Madacki, Saša; Piric, Ljiljana; Cizmic, Srebrenka; Salihagic, Aida	2004	5
11.	Angadi, Mallikarjun; Koganuramath, Muttayya; Kademani, B. S.; Kalyane, V. L.; Sen, B. K.	2004	5
12.	Koganuramath, M M; Angadi, Mallikarjun; Kademani, B S; Kalyane, V L; Jange, Suresh	2004	5
13.	Conti, Cinzia; Contino, Ugo; Farinelli, Gino; Gargiulo, Paola; Marquardt, Luisa	2003	5
14.	Muntada, Mercè; Núñez, Sandra; Perpiñán, Marta; Virós, Blanca; Vives, Josep	2003	5
15.	Muntada, Mercè; Núñez, Sandra; Perpiñán, Marta; Virós, Blanca; Vives, Josep	2001	5
16.	Castriotta, Maria; Di Cesare, Rosa; Luzi, Daniela; Manco, Mariarosaria; Aceti, Angela	2001	5
17.	Dekeyser, Raf; Pettenati, Corrado; Van de Sompel, Herbert; Arms, William Y.; Krichel, Thomas	2001	5
18.	Eichhorn, Guenther; Accomazzi, Alberto; Grant, Carolyn S.; Kurtz, Michael J.; Murray, Stephen S.	2001	5
19.	Mangiaracina, Silvana; Buzzi, Marina; Gennai, Francesco; Abba, Laura; Salamone, Patrizia	2001	5

(truncated)

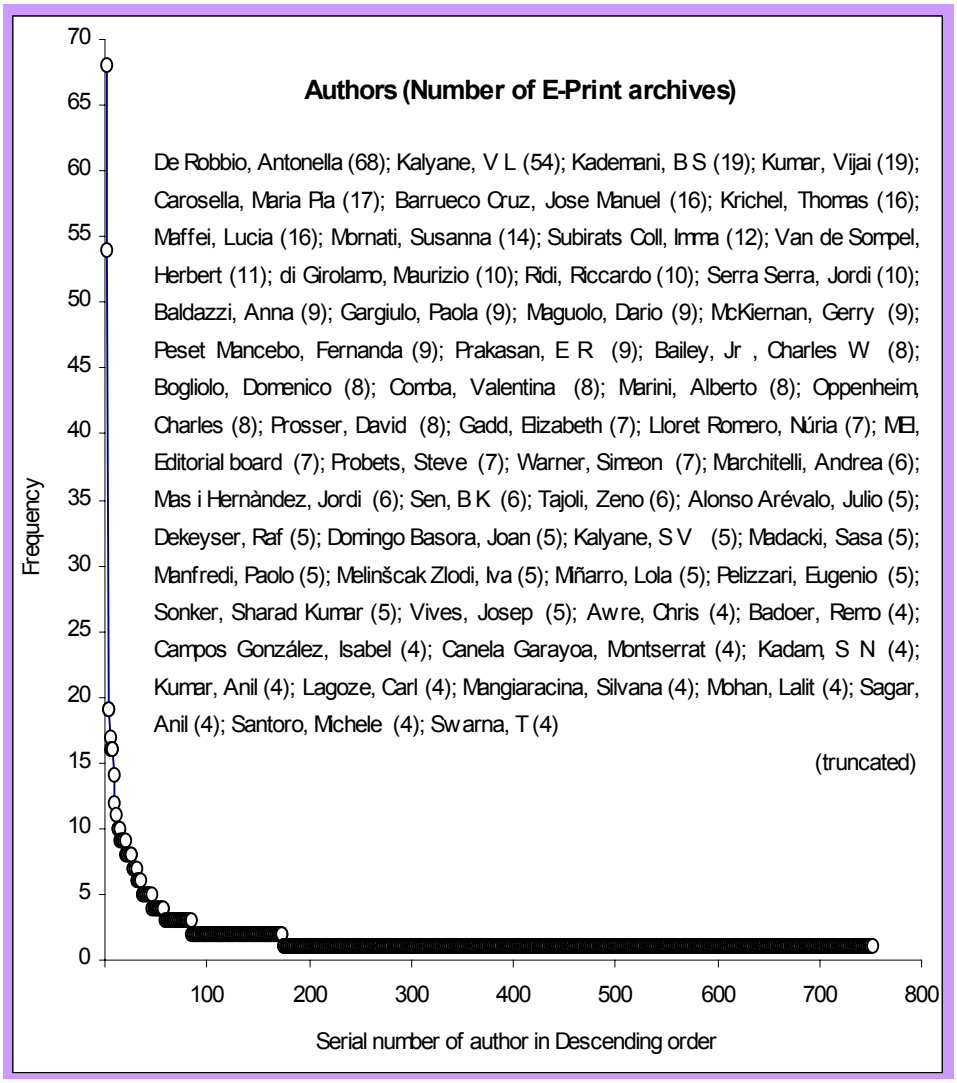

Fig. 8.10: Number of authorship-wise authors in the byline of author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org on and up to 7th July, 2004

Table 8.9: Author productivity of publication and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

Sl. No.	Author	A	B	C	D	E	F	G	H	I	J	K	L	IND	Total	Cumu	Cumu %
1	De Robbio, Antonella	0	0	0	0	13	0	0	23	10	0	0	1	21	68	4.87	4.87
2	Kalyane, V L	0	34	0	0	0	0	0	1	0	1	0	1	17	54	3.87	8.74
3	Kademani, B S	0	16	0	0	0	0	0	0	0	1	0	1	1	19	1.36	10.10
4	Kumar, Vijai	0	8	0	0	0	0	0	0	0	1	0	1	9	19	1.36	11.46
5	Carosella, Maria Pia	0	0	0	0	0	0	4	3	0	2	0	0	8	17	1.22	12.68
6	Krichel, Thomas	0	0	0	0	0	0	0	5	5	0	0	1	5	16	1.15	13.83
7	Maffei, Lucia	0	1	0	0	1	0	0	2	0	0	0	1	11	16	1.15	14.97
8	Barrueco Cruz, Jose Manuel	0	0	0	0	0	0	0	3	11	0	0	0	0	14	1.00	15.97
9	Mornati, Susanna	0	0	0	0	2	0	0	5	0	0	0	5	2	14	1.00	16.98
10	di Girolamo, Maurizio	0	1	2	2	0	0	0	0	1	0	0	1	3	10	0.72	17.69
11	Ridi, Riccardo	4	0	0	1	0	0	1	1	0	1	0	1	1	10	0.72	18.41

12	Serra Serra, Jordi	0	0	0	0	0	1	2	0	0	0	0	0	7	10	0.72	19.13
13	Baldazzi, Anna	1	0	0	0	0	0	0	0	0	0	0	0	8	9	0.64	19.77
14	Maguolo, Dario	0	0	0	0	0	0	0	0	7	0	0	0	2	9	0.64	20.42
15	McKiernan, Gerry	0	0	0	0	0	0	0	0	0	0	0	0	9	9	0.64	21.06
16	Prakasan, E R	0	3	0	0	0	0	0	0	0	0	0	1	5	9	0.64	21.70
17	Bailey, Jr , Charles W	0	0	0	0	0	0	0	0	0	0	0	4	4	8	0.57	22.28
18	Bogliolo, Domenico	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.57	22.85
19	Comba, Valentina	0	4	0	0	1	0	0	0	0	0	0	0	3	8	0.57	23.42
20	Gargiulo, Paola	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.57	24.00
21	Oppenheim, Charles	0	0	0	0	7	0	0	0	0	0	0	0	1	8	0.57	24.57
22	Prosser, David	0	0	0	0	2	0	0	1	0	0	0	0	5	8	0.57	25.14
23	Subirats Coll, Imma	0	0	0	0	1	0	0	1	6	0	0	0	0	8	0.57	25.72
24	Van de Sompel, Herbert	0	0	0	0	0	0	0	0	5	0	0	3	0	8	0.57	26.29
25	Gadd, Elizabeth	0	0	0	0	6	0	0	0	0	0	0	0	1	7	0.50	26.79
26	Lloret Romero, Núria	0	0	0	0	1	0	2	0	0	0	0	0	4	7	0.50	27.29
27	Marini, Alberto	0	0	0	0	0	0	0	0	7	0	0	0	0	7	0.50	27.79
28	MEI, Editorial board	1	1	0	1	0	0	1	0	0	0	0	1	2	7	0.50	28.30
29	Probets, Steve	0	0	0	0	6	0	0	0	0	0	0	0	1	7	0.50	28.80
30	Warner, Simeon	0	0	0	0	0	0	0	2	2	0	0	1	2	7	0.50	29.30
31	Marchitelli, Andrea	2	0	0	0	0	0	0	0	0	2	0	2	0	6	0.43	29.73
32	Sen, B K	0	3	0	0	0	0	0	0	0	0	0	0	3	6	0.43	30.16
33	Tajoli, Zeno	0	0	0	1	1	0	0	0	0	1	0	2	1	6	0.43	30.59
34	Alonso Arévalo, Julio	0	0	0	0	0	2	1	1	0	0	0	0	1	5	0.36	30.95
35	Dekeyser, Raf	0	0	0	0	0	0	1	0	0	0	0	0	4	5	0.36	31.30
36	Domingo Basora, Joan	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0.36	31.66
37	Kalyane, S V	0	4	0	0	0	0	0	0	0	0	0	0	1	5	0.36	32.02
38	Madacki, Sasa	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0.36	32.38
39	Mas i Hernàndez, Jordi	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0.36	32.74
40	Melinšcak Zlodi, Iva	0	0	0	0	0	0	1	0	0	0	0	0	4	5	0.36	33.09
41	Miñarro, Lola	2	0	0	0	0	0	1	0	0	0	0	0	2	5	0.36	33.45
42	Pelizzari, Eugenio	0	0	0	0	2	0	0	0	0	0	0	0	3	5	0.36	33.81
43	Peset Mancebo, Fernanda	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0.36	34.17
44	Sonker, Sharad Kumar	0	0	0	0	0	0	0	0	0	0	0	1	4	5	0.36	34.53
45	Vives, Josep	1	0	3	0	0	0	0	0	0	0	0	0	1	5	0.36	34.89
46	Awre, Chris	0	0	0	0	0	0	0	1	0	0	0	0	3	4	0.29	35.17
47	Badoer, Remo	0	0	0	0	0	1	0	1	0	1	0	1	0	4	0.29	35.46
48	Campos González, Isabel	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.29	35.74
49	Canela Garayoa, Montserrat	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.29	36.03
50	Kadam, S N	0	1	0	0	0	0	0	0	0	0	0	0	3	4	0.29	36.32
51	Kumar, Anil	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.29	36.60
52	Lagoze, Carl	0	0	0	0	0	0	0	1	0	0	0	2	1	4	0.29	36.89
53	Manfredi, Paolo	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.29	37.18
54	Mangiaracina, Silvana	0	1	0	0	0	0	0	0	0	3	0	0	0	4	0.29	37.46
55	Mohan, Lalit	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.29	37.75
56	Peset Mancebo, Fernanda	0	0	0	1	1	0	1	1	0	0	0	0	0	4	0.29	38.04
57	Sagar, Anil	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.29	38.32
58	Santoro, Michele	0	1	0	0	1	0	0	0	1	0	0	0	1	4	0.29	38.61
59	Subirats Coll, Imma	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.29	38.90
60	Swarna, T	0	2	0	0	0	0	0	0	0	0	0	1	1	4	0.29	39.18

61	Angadi, Mallikarjun	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0.21	39.40
62	Bertini, Lucia	0	0	0	0	0	0	0	0	0	1	0	0	2	3	0.21	39.61
63	Canali, Daniela	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	39.83
64	Capacci, Annalisa	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	40.04
65	García Testal, Cristina	0	0	0	0	0	1	1	1	0	0	0	0	0	3	0.21	40.26
66	Golub, Koraljka	0	1	0	0	0	0	0	0	0	0	0	0	2	3	0.21	40.47
67	Grivell, Les	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	40.69
68	Harnad, Stevan	0	1	0	0	0	0	0	1	0	0	0	0	1	3	0.21	40.90
69	Hochstenbach, Patrick	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0.21	41.12
70	Jange, Suresh	0	2	0	0	0	0	0	0	0	0	0	1	0	3	0.21	41.33
71	Kademani, A B	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0.21	41.55
72	Le Meur, JeanYves	0	0	0	0	0	0	0	1	0	0	0	0	2	3	0.21	41.76
73	Mackenzie Owen, John	1	0	1	0	1	0	0	0	0	0	0	0	0	3	0.21	41.98
74	Martín Cerro, Sonia	0	0	0	0	0	1	0	1	0	0	0	0	1	3	0.21	42.19
75	Martinez Mendez, Francisco Javier	0	0	0	0	0	0	0	1	1	0	0	1	0	3	0.21	42.41
76	Marzoli, Rita	1	0	0	0	0	0	0	0	0	0	0	0	2	3	0.21	42.62
77	Max Planck Society,	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0.21	42.84
78	Medeiros, Norm	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0.21	43.05
79	Mittler, E	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	43.27
80	Nelson, Michael L	0	0	0	0	0	0	0	1	0	0	0	1	1	3	0.21	43.48
81	Noverges Domenech, Natividad	0	0	0	0	0	0	0	1	1	1	0	0	0	3	0.21	43.70
82	Pavelic, Damir	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	43.91
83	Pettenati, Corrado	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	44.13
84	Seguí i Francés, Romà	0	0	0	1	0	0	0	1	0	0	0	0	1	3	0.21	44.34
85	Van de Sompel, Herbert	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	44.56
86	Weston, Paul Gabriele	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0.21	44.77

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Karanjai Aruna; Karlsson Sune; Kedar Rochelle; Kirsop Barbara; Klink Markus J R; Korac Ana; Kosanovic Biljana; KrasicMarjanovic Olga; Krsmanovic Milenko; Kurtz Michael J; Lasser Eduardo; Laullon Txema; Lavín Forcada Serafina; Lázaro Fernando; Leoncini Claudia; Leoni Gilda; Li Gary; Lieder HansJörg; Llansó Sanjuán Joaquim; Lledó Silla Mario; Llinares

Joan A; Lloret Mauri Jaime; Lo Patrick; Loayza Valda Joaquín; Lohman Maria; Longo Brunella; Look Hugh; López Alonso MiguelÁngel; López Ferran; López Pedro; Lorente Magdalena; Lovari Alessandro; Lozano Roser; Lucarelli Anna; Lugo Hubp Margarita; Lupi Mauro; Lützenkirchen Frank; Luzi Daniela; MacEwan Andrew; Machicado M Fernando; MaciasVirgos Enrique; Mackenzie George; MacKenzie Smith; Mackie Morag; Madan V K; Madison Olivia M A; Malamoud Georges; Malgosa Sanahuja Josemaría; Manco Mariarosaria; Manfredi Paolo; Manfredi Vicenzo Rosario; Manfroid Jean; Mangano Michelangelo; Maniega Legarda David; Manjunath G K; Manzaneda Gonzáles Freddy; Marangi Giovanni; Marcheschi Daniela; Marconi Giulio; Margaix Didac; Marini Clarelli Maria Vittoria; Marini Alberto; Markus Femke; Marquardt Luisa; Marra Monica; Martellini Enrico; Martinez Catalán C; Martínez Nohalés Javier; Martinez Suárez Carlos; Martínez Usero José Ángel; Martínez Dídac; Mas i Hernàndez Jordi; Masalles Feliu Esteve; Mata Parreño Alberto; Matarese Valerie; McGarry Dorothy; McGlashan David; Mediavilla Marisa; Melinšcak Martina; Mendoza Janco Dolly I; Menna Massimo; Merlo Vega José Antonio; Meßmer Gabriele; Mestre Mercè; Meurs Delphine; Mihailovic Olivera; Mihalic Mirjana; Minuzzi Sabrina; Miranda Giovanna; Mircov Svetlana; Mishra Shesh; Mitric Marina; Molholm Kurt; Mönnich Michael W; Montejo Ráez Arturo; Morales Bellido Hugo; Morell Oriol; Moreno Núñez María T; Morgese Waldemaro; Moroni Ilaria; Morris Sally; Morselli Labate Antonio Maria; Moya Josep M; Mumbrú Josep; Muñoz García Adolfo; Muñoz García Salvador; Murray Stephen S; Nabar Geeta W; Naito Eisuke; Nardi Lucia; Negrini Giliola; Nieto Pilar; Niinimäki Marko; Nobili Dario; Noyer JeanMax; Ober John; O'Connell Heath B; Olivieri Veliana; Ombuen Giulia; Ontalba y RuipérezJosé Antonio; Ordiñana Antoni; O'Rourke Tony; Ortega Cerezo Eusebio; Oudet Pierre; Pache Jeff; Palacios Ramos Elsa; Palao José Antonio; Pàmies Víctor; Panadès Toni; Pandey Rasik; Pandita Naina; Papa Jula; Papotti Davide; Parmeggiani Claudia; Pascual Olaguíbel Marina; Patton Glenn E; Pavesi Anna; Pažur Ivana; Peláez Teresa; Pentz Ed; Peral Pacheco D; Petrucciani Alberto; Pierrat JeanJacques; Pignard Nathalie; Pigott Ian M; Pilia Elisabetta; Pinfield Stephen; Pinto C J Rocío; Pinto Calderón J Rocío; Piric Ljiljana; Pirri Marco; Pitti Daniel V; Poggiali Igino; Popovic Ljubodrag; Poullet Yves; Powell Andrea; Powell Andy; Pressler Christopher; Pujar S M; Quezada Cortéz Guido; R Moorthy; Radovanlija Mileusnic Snježana; Radulovic Zdravka; Raieli Roberto; Rajan Rahim S; Ramírez Leyva Elsa M; Ramírez Gema; Ramírez Jorge; Ramos Sánchez Julio; Raseroka Kay; Rasetti Maria Stella; Ravasenga Mariangela; Ray Lonsdale; REDESMA; Reich Victoria A; Reidy Denis; Reñé Ferrando Teresa; Ribelles Fernando; Ricci Stefano; Riera Barsallo Patricia; Riva Federica; Robinson Nicholas; Robles Lola; Roca Marta; Rodríguez Bouyssi Juan; Rodríguez i GairínJosep Manuel; Rodríguez David; Rodríguez Rosa; Romero Palomar Inmaculada; Roncalli Alessandra; Ross Seamus; Rossi Christian; Ruggeri Fausto; RuschFeja Diann; Sabini Luciana; Sahmanovic Sadzida; Salamone Patrizia; Salarelli Alberto; Salaver Pepa; Salavert i Pitarch Pepa; Salihagic Aida; Salinas F Marianella; Salmini Claudia; Samanta R K; Sánchez Rivera Ma Teresa; Sanchis Pérez Elisa; SandbergFox Ann M; Sandfær Mogens; Sandy B Verónica Patricia; Sansò Annarita; Santiago Fidel; Sardo Lucia; Sarti Silvia; Saumell Calaf Dolors; Savoja Maurizio; Scarafoni Maria Pia; Schäffler Hildegard; Schgör Paolo; Schiavone Luisa; Schirmbacher Peter; Schmidt Ronald M; Schmitt JeanPhilippe; Schneider Markus; Scholze Frank; Schwaenzl Roland; Scolari Antonio; Secchi Carla; Seguí Romà; Servello Rosaria Maria; Seser Pérez Rosa; Severiens T; Sgambati Giuliana; Shiri Ali; Sigalat Vayá Maria Jose; Simko T; Simonato Edith; Singh Sanjay Kumar; Singh Sukhdev; Singhal Madhuresh; Sivunen Vesa; Smiljanic Ilinka; Smith MacKenzie; Sodi Saverio; Soler Concha; Sorli Rojo Ángela; Spiesberger Manfred; Spong Andrew; Steele Colin; Steele Mary; Stefanovic Mila; Straccia Umberto; Suber Peter; Surwase Ganesh; Tallandini Laura; Tam Owen; Tancara Q Constantino; Tartaglia Stefano; Tavoni Maria Gioia; Taylor Arlene G; Tentoni Paola; TERMCAT Centre de Terminologia; Terranova Giovanna; Thomas Krichel; Thomas Sarah E; Thomson Ian; Tillett Barbara B; Tinti Paolo; Tiozzo Stefano; Tomassini Marco; Tonello Giuliano; Torres Faus Francesc; Torres Isabel de; Tosato Massimiliano; Tosetti Grandi Paola; Tramullas Jesús; Trinidad Jeremiah C; Trolese Francesco G B; Turchetti Roberto; UEB Universidad Evangélica Boliviana; Uhlir Paul F; Valente Adriana; Valenti Fulvia; Van de Velde Eric; van Veen Theo; Vázquez Vázquez Marta; Vecchi Pomphile Analía; Vehabovic Midhat; Vela Nora; Velden Theresa; Vellucci Sherry L; Veracruz Álvarez Alicia; Verheggen Joep; Vesely Martin; Vila Francesc F; Viñals Blasco María José; Virgili Josep Maria; Vitali Stefano; Voss Rüdiger; Vrana Radovan; Waetjen HansJoachim; Weber Jutta; Weeks James; Wegner Bernd; Willer Mirna; Witt Maria; Wolton Dominique; Wynne Martin; Yraolagoitia Jaime de; Zapatero Lourinho Angélica Sara; Zavarrone Emma; Zelaya de Villegas Teresa; Zimmermann K.

High Productivity Authors: Antonella De Robbio and V. L. Kalyane

It is well known that considerable number of editorial board members publish in the journal they serve, e.g. six major accounting research journals (Lee 1996).

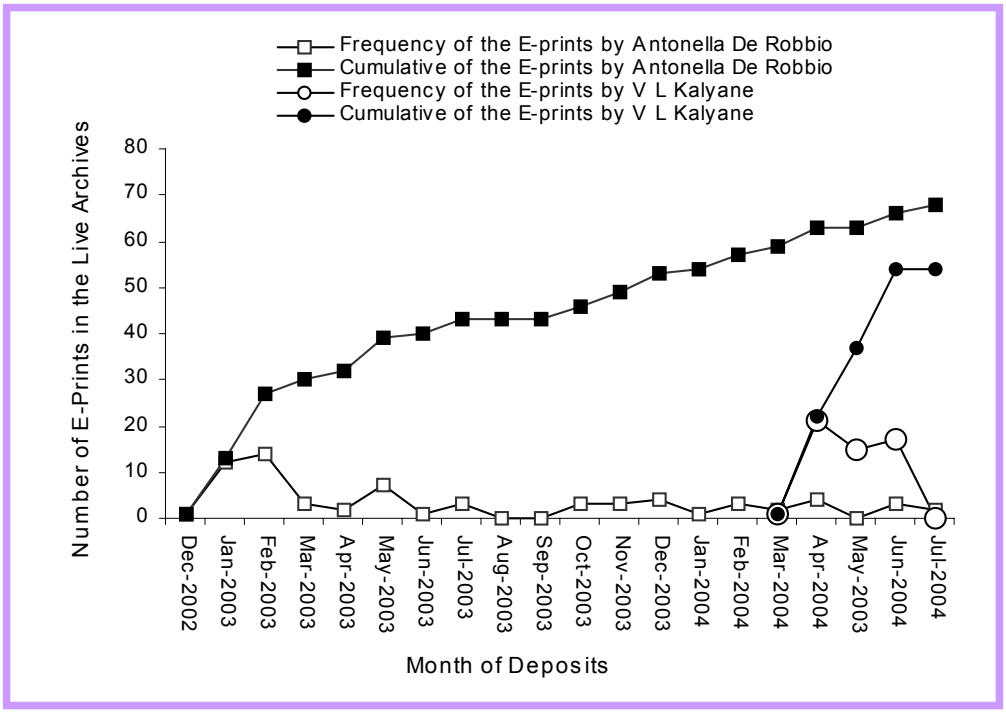

Fig. 8.11: Time series analysis of deposits of the EPrints in the live archives of high productivity authors at site http://Eprints.rclis.org downloaded on and up to 7th July 2004

Singh (2004) reported that there are about 30 electronic journals in LIS available via the Internet. In both the journals studied: *The Electronic Journal of Information Systems in Developing Countries*, and *Information Research: An International Electronic Journal*; contributors associated with the editorial boards have published more papers as compared to other authors.

However, in the present case Kalyane got the invitation offer to become "E-LIS Editor for India" only after depositing his publications at the http://eprints.rclis.org

Hence, success breeds success i.e. high productivity authors are expected to become Members of the Editorial Board. Once they occupy the Gatekeeper position, they do quality control and may influence and propagate their research interests through teamwork. So, further their contribution is likely to rise to the same Source or similar other Sources of the same domain or subdomain.

8.3.8 Subjects/Contents as per JITA Classification System :

Content analysis as per the JITA Classification System of Library and Information Science was followed throughout the present study. E-LIS Eprint Archives having 983 Eprints in all domains upto 7th July 2004, which were considered. Subject Classification Domain Content Analysis (Fig. 8.12) shows no. of EPrints in subject categories in the live archives as per JITA Classification System .

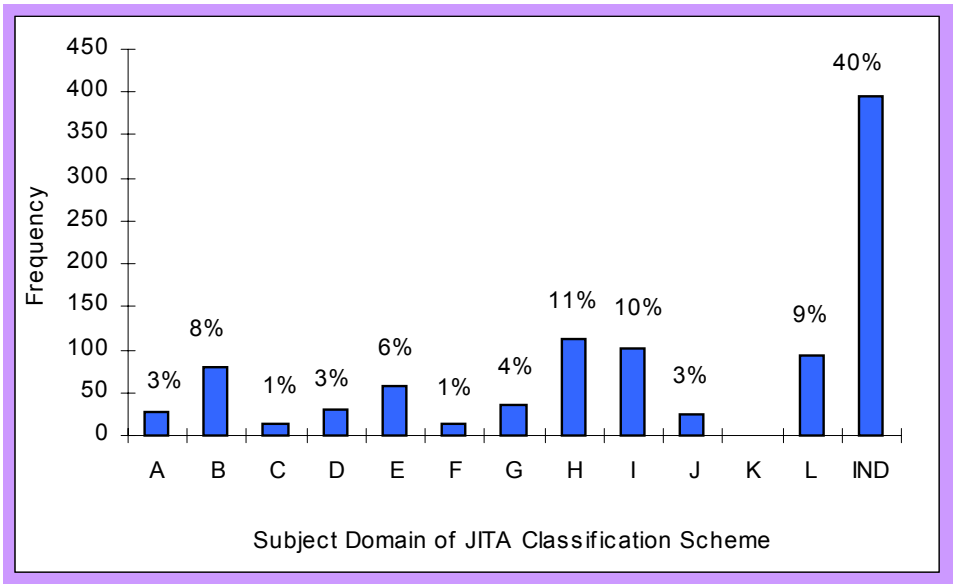

Fig. 8.12: Frequency and growth of live archives as per JITA Classification System in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org on and up to 7th July, 2004

8.3.8.1. Single domain: There were 588 Eprint Archives in E-LIS, which had single JITA domain contents specification. Number of EPrints occurring are as following:

A = Theoretical and general aspects of libraries and information (**27**)

B = Information use and sociology of information (**80**)

C = Users, literacy and reading (**13**)

D = Libraries as physical collections (**30**)

E = Publishing and legal issues (**57**)

F = Management (**13**)

G = Industry, profession and education (**36**)

H = Information sources, supports, channels (**113**)

I = Information treatment for information services (Information functions and techniques) **(101)**

J = Technical services libraries, archives and museums (**25**)

K = Housing technologies (**1**)

L = Information technology and library technology (**92**)

8.3.8.2. Two domains: These were 318 Eprint Archives having contents of at least two domains Subject Classification Domain Content Analysis Table (8.11) shows no. of EPrints in the cluster analysis of subject categories in the live archives as per JITA Classification System .

Two domain interdomainary contents of prominently occurring clusters having more than ten EPrints were following:

H and **L** were fifty-one; **H** and **I** were thirty-seven; **I** and **L** were twenty five; **E** and **H** were seventeen; **E** and **L** were fifteen; **B** and **L** were twelve; **B** and **I** were eleven; and **B** and **E** were eleven.

Table 8.10 Cluster analysis of subject categories in the live archives as per JITA Classification System

JITA Classification System											
A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
A	9		1	3	2	3	2	5		1	3
	B	8		**11**	3	8	7	**11**			**12**
		C		1	1	1	5				1
			D			2	2		6		1
				E	3	2	**17**	1	2		**15**
					F		6	6	4		4
						G	5	4			4
							H	**37**	6	1	**51**
								I	7		**25**
									J	1	8

8.3.8.3. Three domains: The 64 Eprint archives in E-LIS as per JITA Classification System had three domain contents specifications. No. of Eprints occurring in each one are givin in Table 8.11.

Table 8.11. No. of EPrints having three domains specifications in subject categories in the live archives as per JITA Classification System

Sl. No.	Domain	Freq.	Sl. No.	Domain	Freq.	Sl. No.	Domain	Freq.
1.	H-I-L	10	12.	A-C-D	1	23.	E-F-J	1
2.	E-F-H	6	13.	A-E-L	1	24.	E-G-H	1
3.	B-E-H	5	14.	B-E-L	1	25.	F-G-I	1
4.	H-I-J	5	15.	B-G-L	1	26.	F-H-I	1
5.	B-H-I	4	16.	B-H-J	1	27.	F-H-J	1
6.	E-H-I	4	17.	B-H-L	1	28.	F-H-L	1
7.	C-E-H	3	18.	B-I-J	1	29.	F-I-L	1
8.	A-B-I	2	19.	D-E-L	1	30.	G-I-L	1
9.	A-H-I	2	20.	D-H-L	1	31.	H-J-L	1
10.	E-H-L	2	21.	D-J-H	1			
11.	A-B-G	1	22.	E-F-G	1			

8.3.8.4. Four domains: Ten Eprints were having four domain specifications in the E-LIS.

- **A** = Theoretical and general aspects of libraries and information; **B** = Information use and sociology of information; **I** = Information treatment for information services (Information functions and techniques); and **L** = Information technology and library technology are having two Eprint Archives.
- **A** = Theoretical and general aspects of libraries and information; **F** = Management; **I** = Information treatment for information services (Information functions and techniques); and **L** = Information technology and library technology having two Eprint Archives.
- **E** = Publishing and legal issues; **H** = Information sources, supports, channels**; I** = Information treatment for information services (Information functions and techniques); and **L** = Information technology and library technology having two Eprint Archives.

Only one EPprint Archive was available, having four domains specifications in each of the following:

- **A** = Theoretical and general aspects of libraries and information; **B** = Information use and sociology of information; **I** = Information treatment for information services (Information functions and techniques); and **J** = Technical services libraries, archives and museums.

- **A** = Theoretical and general aspects of libraries and information; **I** = Information treatment for information services (Information functions and techniques); **J** = Technical services libraries, archives and museums; and **L** = Information technology and library technology.
- **B** = Information use and sociology of information; **C** = Users, literacy and reading; **I** = Information treatment for information services (Information functions and techniques); and **L** = Information technology and library technology.
- **B** = Information use and sociology of information; **H** = Information sources, supports, channels; **I** = Information treatment for information services (Information functions and techniques); and **L** = Information technology and library technology.

8.3.8.5. Five domains: Only one EPrint Archive was available in the E-LIS having the content combination as:

B = Information use and sociology of information; **H** = Information sources, supports, channels; **I** = Information treatment for information services (Information functions and techniques); **J** = Technical services libraries, archives and museums; and **L** = Information technology and library technology.

8.3.8.6. Six domains: Only one Eprint Archive was available in the E-LIS having the following contents:

A = Theoretical and general aspects of libraries and information; **B** = Information use and sociology of information; **C** = Users, literacy and reading; **E** = Publishing and legal issues; **F** = Management; **G** = Industry, profession and education.

8.3.8.7. Seven domains: Only one Eprint Archive was available in the E-LIS having the following contents:

B = Information use and sociology of information; **C** = Users, literacy and reading; **D** = Libraries as physical collections; **E** = Publishing and legal issues; **F** = Management; **G** = Industry, profession and education; and **J** = Technical services libraries, archives and museums.

8.3.9. Year (Publication Year)

Table 8.12: Publication year of publication and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

PY	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum %
	A	B	C	D	E	F	G	H	I	J	K	L				
1965								1						1	0.10	0.10
1989												1	1	2	0.20	0.31
1990							1			1		1		3	0.31	0.61
1991		1										1		2	0.20	0.81
1992		2										1	3	6	0.61	1.42
1993		1						1						2	0.20	1.63
1994		4											3	7	0.71	2.34
1995	2	6		2				1	2			4	10	27	2.75	5.09
1996	4	4		1	1	1	1	4		3		3	3	25	2.54	7.63
1997		2		4			1	4	9	1			6	27	2.75	10.38
1998	1	2	2					1		1		1	4	12	1.22	11.60
1999	1	5		5	4	2	7	16	1	1		3	24	69	7.02	18.62
2000	3	3	1	2	3	1	5	14	4	3		1	35	75	7.63	26.25
2001	2	8	1	1	3		6	12	12	5		2	93	145	14.75	41.00
2002	10	10		4	9	2	6	27	23	2		27	60	180	18.31	59.31
2003	3	27	9	11	24	5	5	11	44	5	1	38	115	298	30.32	89.62
2004	1	5			13	2	4	21	6	3		9	38	102	10.38	100
Total	27	80	13	30	57	13	36	113	101	25	1	92	395	983	100.00	

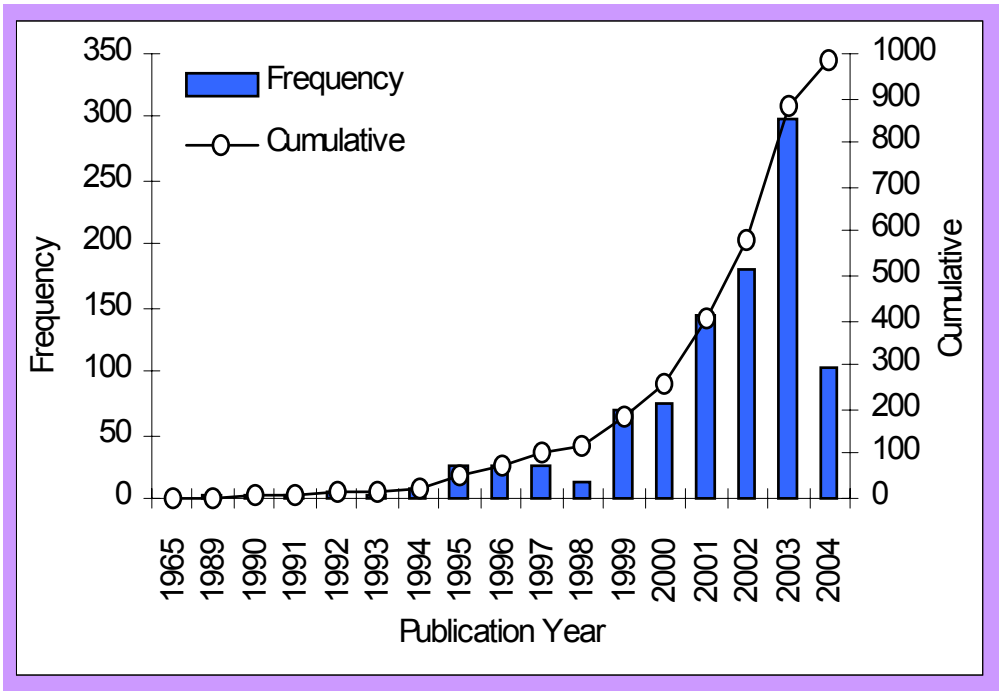

Fig. 8.13: Yearwise frequency and growth of live archives in the author self archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

8.3.10. Abstracts (for Readability Analysis)

Table 8.13: Readability of (200 Abstracts in the Metadata) E-Prints in the live archives at site eprints.rclis.org upto 7th July, 2004

Abstracts Metadata	Number of Sentences	Words Per Sentence	Characters Per Word	Flesch Reading Ease	Fog Scale Level	Flesch-Kincaid Grade Level
Mode	2.00	7.00	5.00	30.53	16.00	10.74
Median	3.00	16.33	5.33	48.86	15.69	10.96
Mean	3.83	17.78	5.49	49.17	15.51	10.84
SD	3.27	8.46	1.04	15.52	4.43	3.41

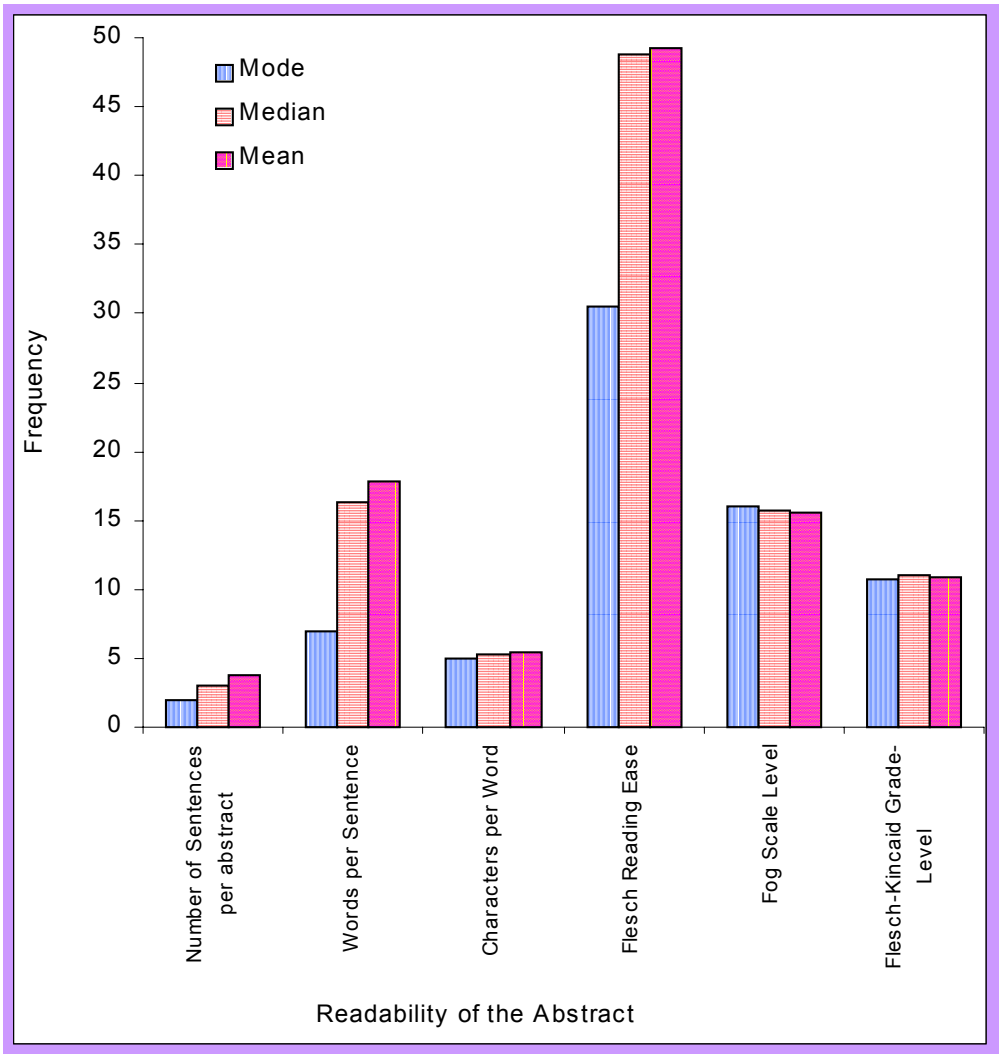

Fig. 8.14: Readability of Metadata in Abstracts (200 Abstracts were used as a random sample out of the 983 EPrints) in the author-self-archiving metadata for EPrints in the live Archives at site eprints.rclis.org downloaded on and up to 7th July 2004

8.3.11 Publication/source (Journal)

The article literature on Information Storage and Retrieval (ISAR) in Library and Information Science (LIS) having application of Informatics was studied for the period of 20 years (1981-2000) and found that the nucleus journals and articles therein were:

- *Information Processing and Management* (263);
- *Journal of the American Society for Information Science* (261);
- *Online* (255);
- *Database* (177);
- *Journal of Chemical Information and Computer Science* (149);
- *Online Information Review* (132); and
- *Journal of Information Science* (83).

Other journals following the above mentioned were: *Information Today*; *MSRQ*; *Journal of Documentation*; *Program*; *WPI*; *Searcher*; *ITL*; *BMLA*; *Electronic Library*; *Reference Librarian*; *RQ*; *IWR*; and *ISU*. (Kumar and Hashemzadeh 2004).

The foreign input of articles were extremely high in *Information Processing and Management*; and *Scientometrics*. Canada, England, Belgium, The Netherlands, China, and Spain were the countries with high contributions in *Journal of the American Society for Information Science and Technology* (Uzun 2004).

Table 8.14: Frequency of Sources (Journal Article (Print/Paginated)/Journal Article (On-line/Unpaginated)/Newspaper/Magazine Article) of publication and classification of the E-Prints in the live archives at site eprints.rclis.org upto 7th July, 2004

Sl.No.	Journal Titles	Number of Live Archives as per JITA Classification System												IND	Total	%
		A	B	C	D	E	F	G	H	I	J	K	L			
1.	*AIDAInformazioni : rivista di Scienze dell'informazione*	3	4	1	1	2		7	9	1	2		3	79	112	26.99
2.	*Métodos de Información (MEI)*	8	5	1	14	1	1	10	16	12	4		7	24	103	24.82
3.	*High Energy Physics Libraries Webzine*					1		1	14	6	1			12	35	8.43
4.	*Glasnik Narodne biblioteke Srbije*	6							7	2			1		16	3.86
5.	*Bibliotime*		1			1			6	1	1			2	12	2.89
6.	*ICSTI Forum*					7								5	12	2.89
7.	*Biblioteche Oggi*	1							3	2	1			4	11	2.65
8.	*Malaysian Journal of Library & Information Science*		5										1	2	8	1.93
9.	*BiD (Biblioteconomia i Documentació)*							2		1				1	4	0.96

Sl.No.	Journal Titles	Number of Live Archives as per JITA Classification System											IND	Total	%
		A	B	C	D	E	F	G	H	I	J	K	L			
10.	*Economia della cultura*				1	1							1	3	0.72
11.	*Annals of Library Science and Documentation*		3											3	0.72
12.	*Bollettino del CILEA*									1			1	3	0.72
13.	*ESB Forum*								1				2	3	0.72
14.	*Indian Journal of Information, Library & Society*		2										1	3	0.72
15.	*Journal of Information Sciences*		3											3	0.72
16.	*Kelpro Bulletin*		2										1	3	0.72
17.	*Learned Publishing*					1							2	3	0.72
18.	*OCLC Systems & Services*											1	2	3	0.72
19.	*Scientometrics*		3											3	0.72
20.	*SRELS Journal of Information Management*		2									1		3	0.72
21.	*AIB Notizie*		1		1									2	0.48
22.	*Bibliotekarstvo : Godišnjak Društva bibliotekara Bosne i Hercegovine*				1						1			2	0.48
23.	*Achab: Rivista studentesca di antropologia*		1										1	2	0.48
24.	*Anales de documentación*							1					1	2	0.48
25.	*Annals of Library and Information Studies*		1										1	2	0.48
26.	*Bibliotekarstvo : Godišnjak Društva bibliotekara BiH*												2	2	0.48
27.	*Bollettino AIB*								1				1	2	0.48
28.	*College & Research Libraries News*					2								2	0.48
29.	*D-Lib Magazine*												2	2	0.48
30.	*El Profesional de la Informacion*									2				2	0.48
31.	*ILA Bulletin*		2											2	0.48
32.	*Information Technology and Libraries*												1	2	0.48
33.	*JISSI: The International Journal of Scientometrics and Informetrics*		2											2	0.48
34.	*Library Science*		2											2	0.48
35.	*Serials*												2	2	0.48
36.	*Serials Review*												2	2	0.48
37.	*Pinali news*								1					1	0.24
38.	*Arxius*												1	1	0.24
39.	*ASSIGNation*												1	1	0.24
40.	*Barrington report on advanced knowledge organization and retrieval (BRAKOR)*									1				1	0.24
41.	*BIBLIOthèque(s): Dossier Italie 2002*												1	1	0.24
42.	*Biology Education*		1											1	0.24
43.	*BIT: Biblioteche in Toscana*							1						1	0.24
44.	*Boletín de Red IRIS*									1				1	0.24
45.	*Bollettino Biblioteca: periodico d'informazione. Università degli Studi del Molise.*												1	1	0.24
46.	*Coloquio de la Asociación Internacional de Bibliología*												1	1	0.24
47.	*Digithum*												1	1	0.24

Sl.No.	Journal Titles	Number of Live Archives as per JITA Classification System												IND	Total	%
		A	B	C	D	E	F	G	H	I	J	K	L			
48.	*Elephant Talk. Rivista musicale elettronica*													1	1	0.24
49.	*En.red.ando : reflexió i anàlisi sobre la vida a Internet*													1	1	0.24
50.	*Funció Publicació*													1	1	0.24
51.	*Information Architecture : An Emerging 21st Century Profession*							1							1	0.24
52.	*INFORMATION STUDIES*												1		1	0.24
53.	*Information Wissenschaft und Praxis*									1					1	0.24
54.	*International Information, Communication and Education*													1	1	0.24
55.	*Issues in Science and Technology Librarianship*													1	1	0.24
56.	*Ítem : revista de biblioteconomia i documentació*			1											1	0.24
57.	*Lecture Notes in Computer Science.*									1					1	0.24
58.	*Liber Quarterly*													1	1	0.24
59.	*Library Hi Tech*												1		1	0.24
60.	*Library Hi Tech News*										1				1	0.24
61.	*Library Review*													1	1	0.24
62.	*Library Science with a slant to Documentation and Information Studies*								1						1	0.24
63.	*Library Trends*		1												1	0.24
64.	*Lucknow Librarian*													1	1	0.24
65.	*Memoria e ricerca. Rivista di storia contemporanea*					1									1	0.24
66.	*Národní knihovna : knihovnická revue*													1	1	0.24
67.	*Notices of the American Mathematical Society*													1	1	0.24
68.	*Notiziario SIMAI Società Italiana di Matematica Applicata Industriale*								1						1	0.24
69.	*Puertas a la Lectura*												1		1	0.24
70.	*Research Evaluation*		1												1	0.24
71.	*The Bookseller*					1									1	0.24
72.	*University News*													1	1	0.24
73.	*Program: electronic library & information systems*													1	1	0.24
Total		**18**	**42**	**2**	**18**	**18**	**1**	**23**	**60**	**32**	**11**	**0**	**21**	**168**	**415**	**100%**

(A = Theoretical and general aspects of libraries and information; B = Information use and sociology of information; C = Users, literacy and reading; D = Libraries as physical collections; E = Publishing and legal issues; F = Management; G = Industry, profession and education; H = Information sources, supports, channels; I = Information treatment for information services (Information functions and techniques); J = Technical services libraries, archives and museums; K = Housing technologies; L = Information technology and library technology, and IND = Inter-domainery i.e. having specifications of two or more than two classes); Cum = Cumulative; JA/NMA = Journal Article (Print/Paginated)/Journal Article (On-line/Unpaginated)/Newspaper/Magazine Article.

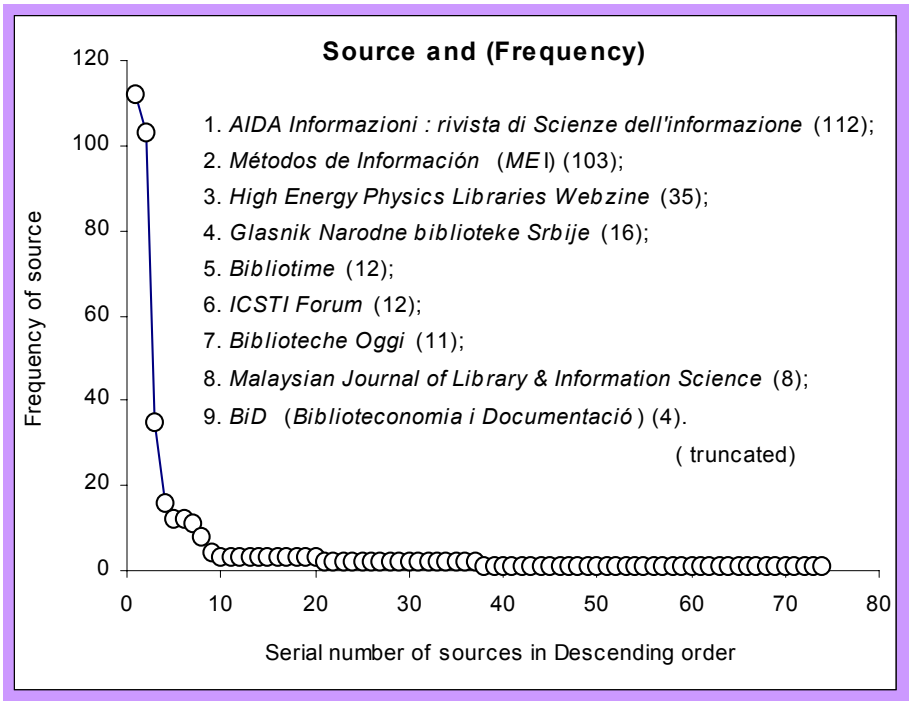

Fig. 8.15: Source of publication in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

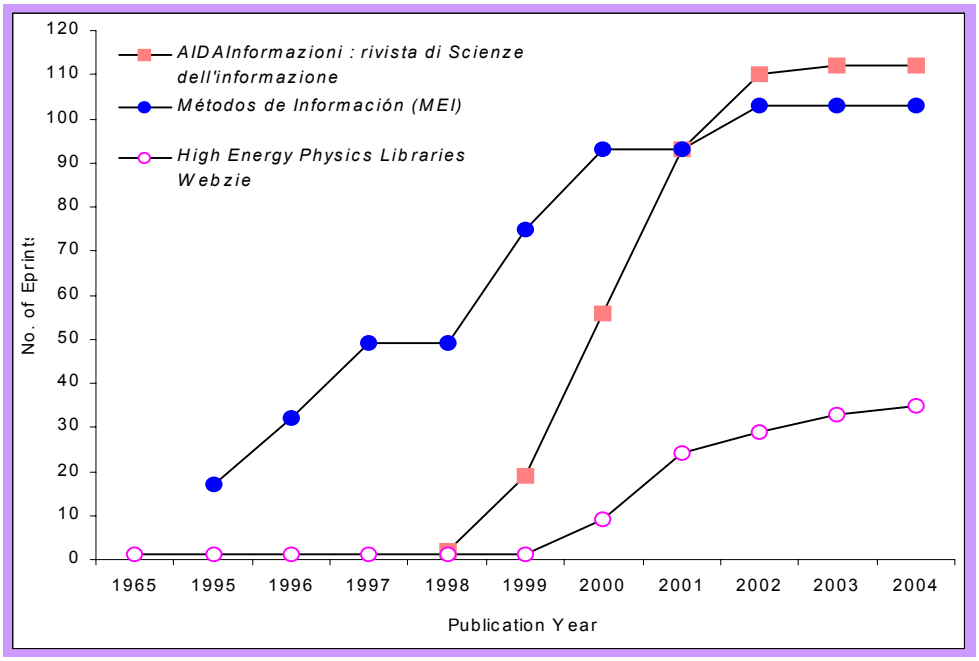

Fig. 8.16: Top three journals yearwise-growth of publication in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

8.3.12 Alternative Locations (No link/Single Link/Multiple Links)

Table 8.15: Alternative location of publication and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

Alternative Locations	Number of Live Archives as per JITA Classification System												IND	Total	%	Cum %
	A	B	C	D	E	F	G	H	I	J	K	L				
Unspecifie	13	55	9	23	17	9	21	40	35	13		32	136	403	41.	41.00
One	9	10	4	5	38	2	7	62	25	12	1	56	144	375	38.	79.15
Two	5	10		2	1	2	6	9	11			2	53	101	10.	89.42
Three		5			1		1	1	29				50	87	8.8	98.27
Four								1	1			1	12	15	1.5	99.80
Five												1		1	0.1	99.90
Six							1							1	0.1	100
Total	27	80	13	30	57	13	36	11	10	25	1	92	395	983		

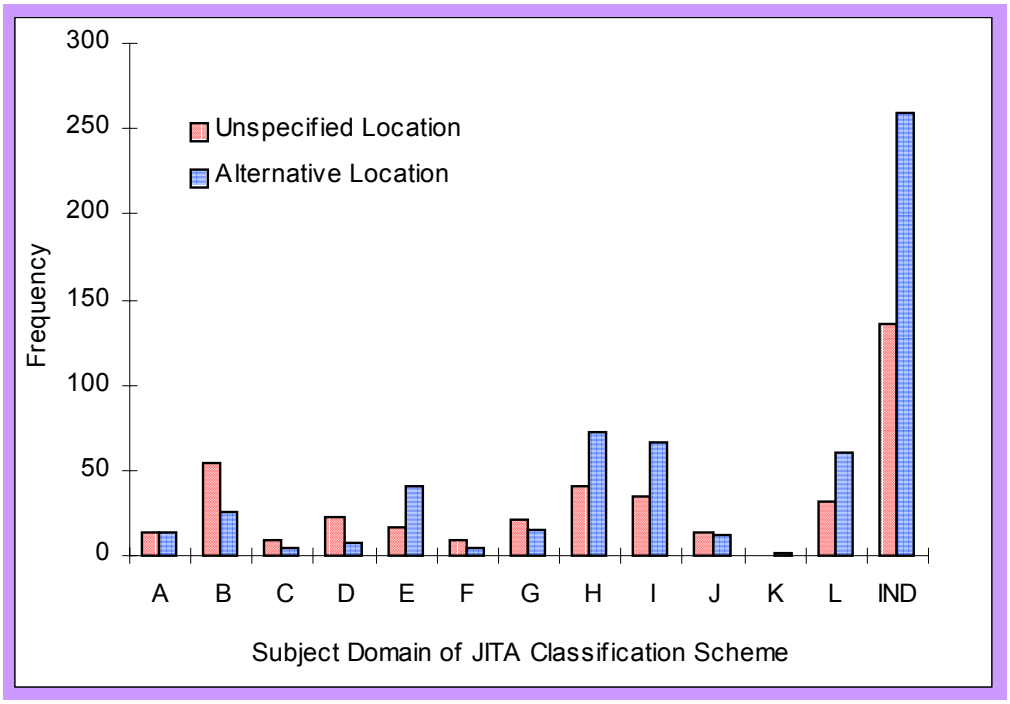

Fig. 8.17: Frequency and growth of Alternative Locations as per JITA Classification System in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

(A = Theoretical and general aspects of libraries and information; B = Information use and sociology of information; C = Users, literacy and reading; D = Libraries as physical collections; E = Publishing and legal issues; F = Management; G = Industry, profession and education; H = Information sources, supports, channels; I = Information treatment for information services (Information functions and techniques); J = Technical services libraries, archives and museums; K = Housing technologies; L = Information technology and library technology, and IND = Inter-domainery i.e. having specifications of two or more than two classes); Cum = Cumulative.

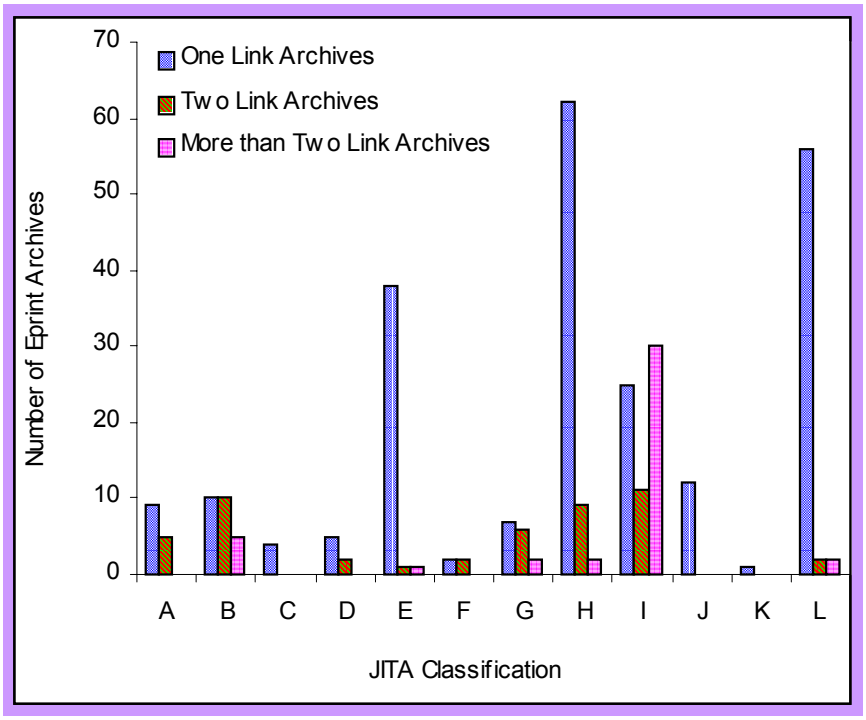

Fig. 8.18: Frequency and growth of one link, two link and more than two link (Alternative Locations) as per JITA Classification System in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

(A = Theoretical and general aspects of libraries and information; B = Information use and sociology of information; C = Users, literacy and reading; D = Libraries as physical collections; E = Publishing and legal issues; F = Management; G = Industry, profession and education; H = Information sources, supports, channels; I = Information treatment for information services (Information functions and techniques); J = Technical services libraries, archives and museums; K = Housing technologies; L = Information technology and library technology, and IND = Inter-domainery i.e. having specifications of two or more than two classes); Cum = Cumulative

8.3.13 Keywords

Table 8.16: Keywords/ Keyphrases productivity of publication and classification of the live archives at site eprints.rclis.org upto 7th July, 2004

Sl. No.	Keywords/Keyphrases	A	B	C	D	E	F	G	H	I	J	K	L	IND	Total	Cumu.	% of Total	Cumu. %
1.	OAI	0	0	0	0	6	1	2	27	2	0	0	10	61	109	109	1.66	1.66
2.	Digital libraries	0	2	0	0	3	1	2	21	2	0	0	11	53	95	204	1.45	3.11
3.	CERN	0	0	0	0	2	1	2	19	0	0	0	10	53	87	291	1.33	4.43
4.	workshop	0	0	0	0	2	1	2	20	0	0	0	9	52	86	377	1.31	5.74
5.	Open access	0	13	0	0	10	0	0	5	4	0	0	6	22	60	437	0.91	6.66
6.	peer review journals	0	0	0	0	1	1	2	14	0	0	0	6	34	58	495	0.88	7.54
7.	OAI repositories	0	0	0	0	1	1	1	13	0	0	0	8	33	57	552	0.87	8.41
8.	Open Archives Initiative	0	0	0	0	0	0	0	0	0	0	0	0	57	57	609	0.87	9.28
9.	Open archives	0	2	0	0	16	0	0	14	4	2	0	8	10	56	665	0.85	10.13
10.	Open Archive Initiative	0	1	0	0	5	1	2	19	1	0	0	20	5	54	719	0.82	10.96
11.	Internet	1	3	1	1	1	1	3	8	3	0	0	10	15	47	766	0.72	11.67

Sl. No.	Keywords/Keyphrases	A	B	C	D	E	F	G	H	I	J	K	L	IND	Total	Cumu.	% of Total	Cumu. %
12.	electronic libraries	0	0	0	0	1	1	2	14	0	0	0	5	24	47	813	0.72	12.39
13.	Scientometrics	0	30	0	0	0	0	0	1	0	0	0	0	11	42	855	0.64	13.03
14.	copyright	0	0	1	0	21	0	0	1	1	0	0	3	14	41	896	0.62	13.65
15.	metadata	0	0	0	0	0	0	0	2	7	0	0	7	19	35	931	0.53	14.19
16.	Authority control	0	0	0	0	0	0	0	0	24	0	0	0	9	33	964	0.50	14.69
17.	electronic publishing	0	1	0	0	1	0	0	2	1	0	0	1	26	32	996	0.49	15.18
18.	Authority files	0	0	0	0	0	0	0	0	21	0	0	0	9	30	1026	0.46	15.63
19.	electronic resources	0	0	0	0	0	0	0	1	4	0	0	0	25	30	1056	0.46	16.09
20.	Information Society	1	6	0	1	0	0	1	0	0	0	0	0	19	28	1084	0.43	16.52
21.	Biobibliometrics	0	23	0	0	0	0	0	0	0	0	0	0	3	26	1110	0.40	16.91
22.	digital library	0	0	0	0	0	1	0	4	8	0	0	2	11	26	1136	0.40	17.31
23.	scholarly information	0	0	0	0	1	0	0	5	0	0	0	4	15	25	1161	0.38	17.69
24.	individual scientist	0	20	0	0	0	0	0	0	0	0	0	0	4	24	1185	0.37	18.06
25.	databases	0	0	0	0	1	0	1	5	1	0	0	0	16	24	1209	0.37	18.42
26.	Knowledge Management	1	1	0	1	0	0	0	0	1	0	0	0	20	24	1233	0.37	18.79
27.	science of science	0	20	0	0	0	0	0	0	0	0	0	0	3	23	1256	0.35	19.14
28.	scientific research output	0	20	0	0	0	0	0	0	0	0	0	0	3	23	1279	0.35	19.49
29.	E-journals	0	0	0	0	0	0	0	10	2	0	0	0	11	23	1302	0.35	19.84
30.	archivi di autorità	0	0	0	0	0	0	0	0	18	0	0	0	3	21	1323	0.32	20.16
31.	research productivity	0	18	0	0	0	0	0	0	0	0	0	0	3	21	1344	0.32	20.48
32.	comunicazione scientifica	0	1	0	0	8	0	0	6	1	0	0	0	5	21	1365	0.32	20.80
33.	electronic journals	0	0	0	0	2	0	0	3	1	0	0	3	12	21	1386	0.32	21.12
34.	controllo d'autorità	0	0	0	0	0	0	0	0	14	0	0	0	6	20	1406	0.30	21.42
35.	public libraries	5	2	1	2	0	0	0	0	0	0	0	0	10	20	1426	0.30	21.73
36.	cataloguing	0	0	1	0	0	0	0	0	8	0	0	0	11	20	1446	0.30	22.03
37.	Self-Archiving	0	1	0	0	9	0	0	4	0	0	0	0	5	19	1465	0.29	22.32
38.	authority Records	0	0	0	0	0	0	0	0	10	0	0	1	8	19	1484	0.29	22.61
39.	scholarly communication	0	1	0	0	2	0	0	5	1	0	0	0	10	19	1503	0.29	22.90
40.	cataloging	0	0	0	0	0	0	0	0	8	0	0	0	11	19	1522	0.29	23.19
41.	KM	0	1	0	1	0	0	0	0	0	0	0	0	17	19	1541	0.29	23.48
42.	Record d'autorità	0	0	0	0	0	0	0	0	11	0	0	0	7	18	1559	0.27	23.75
43.	sociedad de la información	2	4	0	2	1	0	2	0	0	0	0	2	4	17	1576	0.26	24.01
44.	OPAC	1	0	0	0	0	0	0	4	5	0	0	2	5	17	1593	0.26	24.27
45.	new technologies	0	1	0	0	0	0	0	2	0	0	0	5	8	16	1609	0.24	24.52
46.	e-publishing	0	0	0	0	2	0	0	0	0	0	0	1	13	16	1625	0.24	24.76
47.	noves tecnologies	0	1	0	0	0	0	0	2	0	0	0	3	9	15	1640	0.23	24.99
48.	auto-archiviazione	0	1	0	0	7	0	0	5	0	0	0	0	1	14	1654	0.21	25.20
49.	documentation	3	3	0	0	0	0	0	0	0	0	0	0	8	14	1668	0.21	25.42
50.	diritto d'autore	0	0	0	0	11	0	0	0	0	0	0	0	2	13	1681	0.20	25.61
51.	reference linking	0	0	0	0	2	0	0	0	8	0	0	0	3	13	1694	0.20	25.81
52.	repositories	0	0	0	0	6	0	0	3	0	0	0	1	3	13	1707	0.20	26.01
53.	catalogazione	0	0	0	0	1	0	0	0	7	1	0	0	4	13	1720	0.20	26.21
54.	FRBR	0	0	0	0	0	0	0	0	7	0	0	0	6	13	1733	0.20	26.41
55.	Dublin core	0	0	0	0	0	0	0	0	2	0	0	1	10	13	1746	0.20	26.60
56.	biblioteca digital	0	0	0	0	0	1	0	3	8	0	0	0	0	12	1758	0.18	26.79
57.	Bibliometrics	0	8	0	0	0	0	0	0	0	0	0	0	4	12	1770	0.18	26.97

Sl. No.	Keywords/Keyphrases	A	B	C	D	E	F	G	H	I	J	K	L	IND	Total	Cumu.	% of Total	Cumu. %
58.	users	1	0	0	1	0	1	0	1	0	2	0	1	5	12	1782	0.18	27.15
59.	Bibliotecas públicas	4	1	0	1	0	0	0	0	0	0	0	0	6	12	1794	0.18	27.34
60.	publishers	0	0	0	0	5	0	0	0	0	0	0	0	7	12	1806	0.18	27.52
61.	risorse elettroniche	0	0	0	0	0	0	0	0	1	1	0	0	10	12	1818	0.18	27.70
62.	models de documents	0	0	0	0	0	6	4	0	0	0	0	0	1	11	1829	0.17	27.87
63.	search engines	0	0	0	0	0	0	0	0	5	0	0	2	4	11	1840	0.17	28.04
64.	specialized libraries	1	2	0	1	0	0	0	0	2	0	0	1	4	11	1851	0.17	28.20
65.	XML	0	0	0	2	0	1	0	0	0	0	0	4	4	11	1862	0.17	28.37
66.	women	1	3	1	0	0	0	0	3	2	0	0	0	0	10	1872	0.15	28.52
67.	Archives	0	0	0	1	0	1	3	1	1	0	0	2	1	10	1882	0.15	28.68
68.	archivi aperti	0	0	0	0	1	0	0	7	0	0	0	0	2	10	1892	0.15	28.83
69.	Intellectual property	0	0	0	0	7	0	0	1	0	0	0	0	2	10	1902	0.15	28.98
70.	SBN	0	0	0	0	0	0	0	0	5	2	0	1	2	10	1912	0.15	29.13
71.	information science	1	1	0	0	0	0	0	2	3	0	0	0	3	10	1922	0.15	29.29
72.	propiedad intelectual	0	0	0	0	4	0	0	1	1	0	0	0	4	10	1932	0.15	29.44
73.	Catalan	0	0	0	0	0	0	0	2	0	0	0	3	5	10	1942	0.15	29.59
74.	bibliotecas digitales	0	0	0	0	0	0	0	1	1	0	0	2	6	10	1952	0.15	29.74
75.	e-learning	0	0	0	0	0	0	1	1	0	1	0	1	6	10	1962	0.15	29.89

Keywords/Keyphrases with frequency Nine;

art; bases de dades.; Biblioteques públiques; català; electronic Records management; eprints; Functional Requirements for Bibliographic Records; informacion; information services; institutional repositories; Keywords UNSPECIFIED; libraries; metadata.; metadati; Mujeres; nuevas tecnologías; Open Archives Iniziative (OAI); society of information; Technologies

Keywords/Keyphrases with frequency Eight;

Music; services linking; Unión Europea; cataloghi; GARR; service providers; bibliography; Bibliotecas universitarias; publication productivity; Bibliotecas especializadas; MEDLINE; repository; education; free software; protocols; Metadata formats; portals

Keywords/Keyphrases with frequency Seven;

archivi istituzionali; author's rights; biblioteca digitale; bibliotecas; Catalogs; companies; creació de documents electrònics; Description of archives; documentalists; documents electrònics; editoria elettronica; electronic Records; empresas; España; Globalización; hospitales; information retrieval; Internet resources; journals; multimedia; openURL; periodici elettronici; portal; Records creation; Requisiti funzionali per Record bibliografici; Romeo Project; SFX; sociedad del conocimiento; societat del coneixement; Society of the knowledge; Spain; usuarios

Keywords/Keyphrases with frequency Six;

access; archivos abiertos; bibliografia; biblioteche digitali; Centers of documentation; Centros de documentación; conservation; database; dictionaries; digital preservation; electronic information; information literacy; intelectual property; interoperability; ISADN; LEAF; Library and Information Science; MAI; MetaOPAC; Museos; museums; Museus; Open Access journals; preservation; programari lliure; RICA; scholarship communication; scientific classifications; Scientific communication; servicios de información; templates

Keywords/Keyphrases with frequency Five;

archivi disciplinari; Artificial Intelligence; arxius oberts; auto-deposito; bibliographical selection; bibliotecas hospitalarias; citation analysis; classificazioni matematiche; Computer Science; data providers; depositi; digitization; Documentación ambiental; editorials; E-LIS; environmental documentation; European Union; history of science; hospitals; IFLA; Information and Communication Technologies; Intranets; ISAAR(CPF); ISBD(ER); knowledge society; legislación; linking; listas de distribución; MARC; mathematics; MSC; Nobel laureate; OAI repositories.; OAI-PMH; OAI-PMH services.; Online Information 2000; OPACs; Padova; portali; propietat intel·lectual; public administration; research in computing and information science; Scholarly Electronic Publishing; selección bibliográfica; self-publishing; Servizio bibliotecario nazionale; Softcatala; software; software libre.; SPARC; Tecnologías de la Información; UNIMARC

Keywords/Keyphrases with frequency Four;

accés obert; acceso a la información; access point control; administración pública; ancient books; archivi d'autorità; archiving; arte; Avances tecnológicos; Bibliographic control; Bolivia; catalogues; ciencias de la información; classification; classifications schemas; classificazioni scientifiche; CMS; commercial publishers; conservació; conservations; content management systems; controllo dei punti di accesso; CORC; depositi istituzionali; distribution lists; DML; Documentalist; EAD; e-books; editori; eprint archives; formació d'usuaris; FRANAR; gestión del conocimiento; History of Libraries; hybrid libraries; indexing; Information and documentation professionals; JSTOR; legislation; library consortia; magazines; managament; Mathematics Subject Classification; Metadata formats.; MSC2000; ONIX; perfiles de usuario; print on demand; profesionals en información electrónica; professionals of electronic information; Regole italiane di catalogazione per autori; revistas; rights of author; risorse Internet; services providers; sholarly communication.; societat de la informació; standards; tecnologías; thesauri; UNIMARC/Authorities; University LibrariesURN World Wide Web

Keywords/Keyphrases with frequency Three;

acceso abierto; archivistic sources; archivos; AUTHOR; Automatitation of archives; Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities; Bibliografia Nazionale Italiana; Budapest Open Access Initiative.; Calidad; ciencias de la documentación; ciències de la documentació; collaboration; congresos;

Congresses; conocimiento; content management; data bases; diccionaris; direttiva europea; DLM Forum; editoriales; e-mail; Europe Union.; Evaluación; fuentes archivísticas; gestión; gestión de información; Guidelines for authority and reference entries; INDECS; information infrastructure; information professionals; institutional reporitory; Internet document delivery; investigación en informática y ciencias de la información; LCSH; llengua catalana; MACS; MARC21; Multilingual Acces to Subjects; network; networks; Peer review; periodico elettronico; Quality; recerca en informàtica i ciències de la informació; Red de bibliotecas; scientific publishing; Scientometric portrait; spanish language; subject headings; sumarios; Universidad de Valencia; University of Valencia; university/faculty library; Valencian Community; Venezia; virtual communities; access points; access to the information; accesso; ArXiv; CDSware; Collaboration Coefficient ; collections; communication; comunicación; DD; Derechos de autor; documentary management; EAC; e-commerce; EDIT16; ER; free access; gestión documental; Historical archives; ILL; Information Technologies; International Standard Authority Data Number; librarians; licences; medical libraries; México; national libraries; recursos de información; Red; refereeing; scientific and technical information; software.; STM publishing; Streaming; UNESCO; VIAF; Azalai; bibliographic database; bosnia and herzegovina; Digital Mathematical Library; digitalizzazione; distance learning; document supply; ERL; European Council of Information Associations; Extensible Markup Language; information theory; International Standard Bibliographic Description for Electronic Resources; Intranet; journal publishing; learning society; matematica; mathematics.; NACO; open source; RDF; resources; ricerca; training; UBC; Universal Bibliographic Control; BioMed Central; business information; Content Preservation and Long Term Access; Cooperative Online Resource Catalog; crisi dei periodici; digital archives; digitalization; E-BioSci; electronic copyright; electronic serials; E-print Archives; gestió dels documents electrònics; grey literature; ICT; Italian portals; JISC; knowledge managers; licenses; new tecnologies; ontologies; OPAC italiani; open archive; organization; scholarly publishing; serials crisis; services providers.; special libraries; universities; World-Wide Web

Keywords/Keyphrases with frequency Two;

AACR2; academic publishers; academic publishing; academics libraries; accesos de banda ancha; access to digital information; access to information; accessibilità; accesso aperto; Acquisitions; administración electrónica; AEPIC; affiliation; alfabetització en informació; alfabetització informacional; alfabetización en información; Anagrafe; Anglo-American Cataloguing Rules; ARCHIM; archival descriptions; Archivi storici sul Web; archivist; archivists; archivos históricos; artes plásticas; arxius digitals; arxius històrics; arXiv.org; Astronomy; audio-visual contents; Australia; authority work; authorship; automation; automazione; banche dati; banche dati biomediche; bases de données; basi di dati biomediche; Berlin Declaration; bibliografía; bibliographic databases; biblioteca ibrida; Biblioteca virtuale; Bibliotecas digitales de textos completos; Bibliotecas nacionales; Bibliotecas virtuales; biblioteche biomediche; biblioteques digitals; Biblioteques especialitzades; Biografia; biography; biomedical database; biomedics libraries; BNI; BN-OPALE PLUS; Bradford's law; broadband web connection; brokers; Budapest Open Access Initiative; business information systems; business knowledge management; CALSI: contents and legal aspects in the society of the Information.; cartographic materials; Catalan language; Catalogo; Catalonia; censorship; CIBER; citation analysis.;

citation indexes; CIVITA; CKO; classification schemas; classificazione; Colombia; comercio electrónico; communication scientifique; communication system; complessi archivistici; Comunicación científica; Comunidad Valenciana; Comunidades virtuales; Comunitat Valenciana; Congress; conservazione; contenidos audiovisuales; contents; continuing education; controlled vocabularies; Controllo Bibliografico Universale; cooperacion; cooperation; Coordinamento Interuniversitario Basi Dati & Editoria in Rete; creators of records Progetto Lombardo Archivi in Internet; crosswalks; CyberStacks(sm); DAFNE; database bibliografici; DECIDoc; DELOS; desarrollo; descrizioni archivistiche; design; Diccionarios; Didactics; didattica; Digital Math Library; digital media; digital repositories; digitalización; Directories; directory; disintermediation; dissemination of knowledge; Document delivery; documentación parlamentaria; documentation about childhood and adolescence; e-Administration; early printed books; Easily Accessible Content; Easily Accessible Content and Linking; E-Biomed; ebusiness; ECIA; Ecia Code of Ethics; eclectic journals; Economics; editori accademici; editoria accademica; educación; e-government; electronic commerce; electronic journals statistics usage; electronic publications; Electronic publishing in Italy; e-markets; EMBASE; EmerotecaVirtuale; Encoded archival context; Encoded Archival Description; engineering; enginyeria; Epistemology of Information sciences; eprints repositories; Espanya; EUROINFO; EV; Evaluation.; excepciones; Expert Systems; Finland; Finlandia; formación de usuarios; formazione a distanza; forum; free services; Full text digital libraries; Functional Requirements for Bibliographic Records Controllo d'autorità; Gallica; Gandia; gestión actual de la información; Gestión de Contenidos; GIDIF; GII; gray literature; Guidelines for authority Records and references; H. J. Bhabha; Historical archives on the Web; HKCAN; human rights; ICOLC; identificatori; identifiers; image; imagen; indicizzazione; indicizzazione per soggetto; informática; information management; information sources; Informetrics; ingenieria; integración; integrating resources; International Coalition of Library Consortia; International Standard Archival Authority Record For Corporate Bodies; Interoperability of Data in E-Commerce Systems; interoperabilnost; intestazioni di soggetto; ISAD (G); ISTC; Italian academic libraries; italian biomedical database; Italian consortia; Italian National Bibliography; ITC; Joint Information Systems Committee; jurisprudence; KBMS; knowledge; lengua española; letteratura grigia; Librarianship; Library Automation Software; library instruction; Library of Congress Authorities; Library of Congress Classification scheme; Library of Congress Subject Headings; library science; Library Services; linguaggi di indicizzazione; Linguistica; linguistics; Linking and Exploring Authority Files; LIS; Manus; manuscript cataloguing; manuscripts; MARS; MathSciNet; Max Planck Society.; Medicine; Model EFQM; motori di ricerca; Mpress; MSC Mathematics Subject Classification; MyLibrary; Name Authority Cooperative; NEP; networked information; Norm ISO 11620; Noves tecnologies i Internet; OAI Metadata Harvesting protocol; OAIS; Online Information Meeting; Online Information Meeting 2001; online publishing; ontologie; OPAC web; Open Access Benefits; Open Access Challenges; Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH); Open Directory Project; Open-Access Archives; opensource; paradigm; Paris Principles; parliamentary; pay-per-view; Periodismo; personal data; Persons and Families; physics.; places; PLAIN; plantilles.; política; political documentation; portals in Italy; pre-prints; present management of the information; preservació digital; Procesos; profession; Professional training for librarians; profiles of users; projects; proprietà intellettuale; pseudonyms; Public Library of Science; Publicación científica;

publication productivity analysis; publishers.; publishing; PubMed; punti d'accesso; RAMEAU; recerca terminològica; Recursos electrónicos; Redes interuniversitarias; reference works; Regole di catalogazione anglo-americane; RePEc; reproducción del vídeo; Requisiti funzionali per le registrazioni bibliografiche; rer; Research collaboration; research in Italy; Resource Description Framework; right to access; riviste elettroniche; ROADS; Role model scientist; SBS; schemi di metadati; Scholarly Publishing and Academic Resources Coalition; Science Citation Index; scientific information; Scientific journals; scientific publication; SCM; SDI; self archiving; semantic web; services; services.; servicios; Sesamo; SGML; SIC; social informatics; software lliure; soggetti produttori; spanish universities; specialized databases; standard numbers; Statistics; statistics gathering; Subject Gateway; subject gateways; Sustainability Science; Sustainable economic model; Technological advances; technological breakthroughs; Telematica; telematics; Televisión Murciana; tendencias en la infomación; Terminologia de la societat de la informació; terminological investigation.; terminology; tesauri; thesis; Tipografía digital; training information professionals; UDC; UE; United Kingdom; Universidades españolas; universitat; university press; URI; URL; Usabilidad; usability; user education; user services; user-lab; Validation; vídeo; video broadcasting; videoregistrazione; Virtual International Authority File; virtual libraries; virtual reference desk; visualización de información; vocabolari controllati; vortals; vrd; web; web semantico; www; Yahoo!

Keywords/Keyphrases with frequency One;

22nd International Online Meeting; A Magna Carta for the Knowledge Age; A. H. Zewail; AAAF; AACR; ABD; About.com; abstracts; academic knowledge networks; Academic libraries; academic metadata format; academic presses; Accelerator Physics; accès à la littérature pour les mathématiciens Open access; accés gratuït; Accesibilidad a la Información; Acceso a la informacion; access barriers; access digital information; access systems; access to digital materials; access to literature for mathematicians; access to medical database; access to scientific publications; accessibility; Accessibility to the Information; accesso a materiali digitali; accesso gratuito; accesso libero; accesso per soggetto; ACDI; acquisition & book selection; Adam Chandler References: Anderson; Adbs; Added Value Services; Aden (DATC-MAE); Administració electrònica; administrative metadata; administratives archives; advanced; advantages and disavantages of open access; advocacy; AFNOR; Agenda; aggregation; Agreement; agregación; Ahmed Hassan Zewail; AI; AIB-WEB; AIDA; AIIP; albo professionale; ALEG; ALEPH500; alerting and current awareness; All the Time Fast Search; All the web; Alpe Adria; Altavista; Alvar Garcia; AMF; amministrazione pubblica; anagrafe delle biblioteche italiane; análisis de citas; analiticki model zbirke; Ancient Italian states; and Technical Services; angle bhabha scattering; Anglo-American Authority File; Antioquia; Antioquia.; Anti-terrorism Knowledge Management; Antoni Maria Alcover; application of citation indexes; application software; appraisal; apprenticeship of librarians; appropriate excitation; architecture of the information; archival digital preservation; archival documents cataloging; archival information systems; archival profession; archival records Soggetti produttori di documenti; archival research; archival standards; archival theory; Archival theory bibliography; archives ouvertes; archivi di e-prints; archiving digital documents; archivio d'autorità bavarese; Archivio di autorità dei nomi di Perugia e del suo

territorio; archivista; Archivística; Archivo de gestión; archivos administrativos; archivos de prensa.; archivos digitales; Archivos municipales; archivos universitarios; Areas of the knowledge for the academic formation; Argentina; ARIEL; ARNO; arquitectura de la información; ARricchimento Servizi Bibliografia Nazionale Italiana; ARSBNI; art collections.; Art History; art information sources.; art objects.; Arthur L. Schawlow; articles; artificial neuronal networks; arxius; AskJeeves; Aslib; Asociaciones; Associació Valenciana d'Especialistes en Informació; Association française de normalisation; Association of Independent Information Professionals; associations; Associazione dei bibliotecari ecclesiastici italiani; Associazione francese di normalizzazione; Associazione Italiana per la Documentazione Avanzata; Assovortals; astronomia; astronomical literature; Astrophysics; Astrophysics Data System; audio; audio books; Audio-visual; Audio-visual Communication; Audio-visual documents; Auditoria; auditory browsing; Australian Literature Gateway; Australian National Unievrsity E-Prints Repository; Austrian and Swiss Consortia Organisation; autenticazioni; authentications; Authenticity; Author productivity; author rights.; Author self-citations; Author self-references; authorities Controllo d'autorità; authorities Intestazioni di soggetto; authority control among Chinese; authority control Autori latini del medioevo; authority control of printers; authority data; authority databases; authority file nazionale; authority files of Medieval Latin literature; authority lists; authority metadata Archivi di autorità; authority names; authority records Archivio d'autorità di SBN; authority records Controllo d'autorità; authority records Controllo d'autorità semantico; authority records Metadati per soggetto; authority work in Italy; authorizations Editoria elettronica; author's rights in Italy; authorship pattern; automated categorization; automated indexing; automatic indexing; automatic translator; Automatización; automatization; autore; Autori cattolici e opere liturgiche in italiano; autorizzazioni; avaluació i tria; AVEI; Azadirachta indica A. Juss.; base de datos; Bases de dades; Bases de dades legislatives; baštinske ustanove Dublin Core; Bavarian authority file; Bavarian union catalogue; BDI; Beautiful Arts; Belgian library consortia; Bell & Howell; Bellas Artes; Beni culturali; Berlingen meeting; BHA; Bhabha Atomic Research Centre; bhabha scattering; Bibiotecas públicas; Bibliografía archivística; Bibliografia di storia dell'arte; bibliografic reserach; Bibliographic search; Bibliographic searches; bibliographic services; bibliographic standards; bibliographical heritage.; bibliographical history; Bibliography of the history of art; Bibliometría; bibliometric indicators; bibliometrics indicators evaluative link analysis Impact Factor; Bibliometrics.; Bibliometry; BiblioMIME; Biblioteca di cultura medievale; biblioteca digitale accademica italiana; Biblioteca digitale italiana; biblioteca digitale matematica; biblioteca digitale mondiale per la matematica; biblioteca especializada; Biblioteca Médica Virtual; Biblioteca Nacional de Bolívia; Biblioteca Nacional de México; Biblioteca Nazionale Centrale di Roma; biblioteca parlamentària de les Corts; biblioteca pública; Biblioteca públicas; biblioteca tradicional; biblioteca virtual; Bibliotecario; bibliotecarios; bibliotecas del futuro; Bibliotecas en España; Bibliotecas médicas; bibliotecas publicas; Bibliotecas públicas españolas; Biblioteche; biblioteche di fisica; biblioteche di slavistica; biblioteche giuridiche; biblioteche governative; biblioteche italiane; biblioteche nazionali; Biblioteche universitarie; Biblioteche Universitarie - Gestione del cambiamento; bibliotecologia; Biblioteconomía; Biblioteconomía Basada en la Evidencia; biblioteques; biblioteques escolars; biblioteques hospitalàries; biblioteques nacionals; biblioteques universitàries.; Bibliotheca

Scriptorum Latinorum Medii Recentiorisque Aevi; bibliothèque scientifique du CERN; BICI; Biochemical genetics; Bioenergetics; biography of librarians; Biography of Scientist; bioinformatic engineers; Biological Physics; BioMed Central Libre accès à la littérature scientifique; biomedical documentalist; biomedical information; biomedical knowledge; biomedical librarians; BioOne; Biotechnology; BISLAM; bisogni dell'utente accademico; Blackwell's Information Services; blind and visually impaired; blind people; BN-OPALE; BN-Opaline/Estampes; BOAI; BOAI Commercial electronic publishing; Bologna; Book Selection; bookmarks; books market; bookstores; Borgia.; Borja; bosniaca; bots; Brassica juncea; brevetti; Building a Catalog of Internet Resources; Building Digital Library; buscadores; Business and Management; business communication; Business documentalists in Spain; business documentation; business plan; business systems; BYBSIS; Cajanus cajan; CALIS; CALLIOPE; Camera di commercio di Torino; Canadian International Development Agency.; canon; Carlo Rubbia; CAS; CASA; Castilian language; Cata; catalán; catalogage; catalogazione dei manoscritti; catalogazione del libro antico; catalogazione derivata; catalogazione descrittiva; catalogazione di documenti d'archivio; catalogazione di manoscritti; catalogazione di risorse elettroniche; catalogazione di risorse Internet; catalogazione in appalto; catalogazione multimediale sbn; catalogazione per autori e titoli; catalogazione semantica; cataloghi on-line; cataloging electronic resources; catalogo collettivo bavarese; catalogo delle English Cathedral Libraries; catalogo elettronico; catalographic standards; Catalogue of periodicals of interest to Italianists held in Universities in the British Isles; catalogues Controllo bibliografico; cataloguing internet; cataloguing languages; cataloguing of Internet resources; Cataloguing Practice; cataloguing rules; cataloguing web sites; categorization tool; Catholic Authors and Liturgical Works; CBU; CCOO; CCSD; CDD 21.; CDS.; CDS/ISIS; CECOSBI; Cellule MathDoc; Censimento nazionale delle edizioni italiane del XVI secolo; Central European Name Authority File Controllo d'autorità; Centre de Terminologia.; Centre pour la Communication Scientifique Directe; Centro de Información Documental; centro linguistico; Centro per il coordinamento dei servizi bibliografici italiani; centros culturales; CERL thesaurus; CERN Courier; CERN Document Server; CERN scientific library; certification; Certification in the archival field; certification of information professionals; certifications of informatics competencies; Chadwyck-Healey; Challenging aspects; changes; channels of communication; Chaos Theory in Learning; Chaotic Phenomena; Chemical Physics; chemistry; Chenopodium amaranticolor; Chicago Cultural Center; Chief Knowledge Officer; Chief Knowledge Officers; Chieti; children; China Academic Library and Information System; China MARC; Chinese Authority Database; Chinese MARC; Chinese Name Authority Database; Chinese names; chirone; CIDOC; ciencias de la información para las áreas bioagrícolas y ambientales; CIMI; CIMI metadata set; citation based funding scheme; citation business model; citation data; citation impact Impatto della ricerca; citation index; Citation.; Ciudad de la Habana (Cuba); CJK Interchange Format of Authority Data Controllo d'autorità in Cina; clasificación; Clasificaciones de los indicadores para bibliotecas; Classic paper; Classical Archaeology; Classic-author; Classic-Author Synchronous Self-References; Classification and Indexing; classification methods; classification scheme; Classifications of the indicators for libraries; Classificazione decimale Dewey; CLIR; cluster analysis; cluster heading; CMD; CNAD; CNBA; CNMARC; COAP; Cochabamba; Cocoon; Codex; COFAR; Cofax; COGNET; CogPrints;

col·lecció local; col·lecció local.; col·leccions; col·leccions d'art; Colección de referencia; colección local; colecciones; colecciones de arte; Collaborative Work Service; collection management.; Collectivités officielles françaises d'Ancien Régime; Collectivités Religieuses Controllo d'autorità; collettività religiose; Collezione Cartografica Manoscritta; collezioni bibliografiche di slavistica; collezioni digitali; Collezioni Eprints (University of BolognaItaly); Colombia.; Columbia's Content-Based Visual Query Project; comité de empresa; commercial publishing; commercial services; commercial vendors; commercio elettronico; Common Documentation Service of the Louis Pasteur University; communication and information sciences; communication process.; communications; communitarian programmes; community information; comparation between biomedical database; CompuServe; Computational Physics; computer literacy; Computer science and archives; Computer skills certifications; Computer Supported Cooperative Work; computers; computers in society; Comunicación Audiovisual; comunicaciones; comunicazione; Comunicazione scientifica e mezzo digitale; comunicazione scinetifica; comunidad en línea; Comunidad Valenciana (España); Comunidad virtual; Conceptual Reference Model; Conference Authority control; Conference Electronic resources; Conference Proceedings; conferencias privadas; conferenza di Crimea; Congresos Virtuales; congresos.; congressos; connections in a distributed environment; conservación; Conservación de archivos; Conservación del patrimonio documental; conservación document management; conservazione del digitale; conservazione di materiali digitali; consortia; Consortium for the Interchange of Museum Information metadata set; Consortium of European research libraries; consorzi; consorzi bibliotecari; consorzi di biblioteche; Consorzio delle biblioteche europee di ricerca; consuetudini; contenidos; contenidos digitales; content; Content analysis; Contents Management; contenuti digitali europei; Contesto archivistico codificato; continuing learning; control; controllo bibliografico; controllo di autorità; controllo di autorità di stampatori; Convegno internazionale sull'Authority Control; convenio de colaboración; Conventional sources; convergencia jurisdiccional; Conversion of data; Conversione dei dati; cooperation between academic libraries; Cooperative Online Resource Catalog Controllo d'autorità; COoperative Research Cataloging; cooperazione; Coordinamento Nazionale Biblioteche di Architettura; copertura periodici; copryright; copy cataloguing; copyleft; Copyright contro Copyleft; copyright elettronico; core journals; CORELI; correo electrónico; corsi di biblioteconomia; corsi LIS; Costa Rica; costi riviste scientifiche; Costo periodici elettronici; cradle books; creación de conocimiento; creation of knowledge.; creative mind; creators of archives Controllo d'autorità; crise de revues scientifiques; CRM; Crop productivity; Cross Language Information Retrieval; CrossRef; CrossRef Indicators; CRUI; CSCW; CSS; cultural centers.; current contents; currícula; customization; Cyberbase; Cybermetrics; cybernetic society; cyberspace; Cytogenetics; Daniel Bell; DanMARC2; DARE: Digital Academic Repositories; Data Base Management Systems; data protection; data security; Data Warehouse; database aggregators; database copyright; Databases of legislation; databases on CD-ROM; databases.; datasets; dati di Autorità per autori e per titoli uniformi; datos personales; Dawson; DBMS; DC; DDC 21.; DEBORA; DECIDoc '99; Decimal Dewey Classification; Decision Support Systems; decreti; decreto legislativo; delle associazioni e degli enti locali italiani dal Medioevo alla fine del secolo XVIII; Denia; depositi di materiali digitali; deRChos de autor; derecho de autor; description; descriptive achievments; descrizione; descrizione archivistica;

Design History; Designet; Develop European Competencies in Information and Documentation; development; development of the professional formation of the university student; development.; Développer les EuroCompétences en Information et Documentation; Développer les Eurocompetences pour l'Information et la Documentation; devices; DGI; DGM; Dialog; Diccionario de la Lengua Española de la Real Academia Española (DRAE); Diccionario de uso del español de María Moliner; Diccionarios ideológicos; diffusion; difusió del coneixement; difusión; digital archiving; Digital Asia Library; Digital communities; digital community in line; digital divide; digital documents; digital environment; Digital Geospatial Metadata; Digital Identifiers; digital information; Digital information services; digital libraries and education; Digital libraries in Italy; Digital libraries in Spain; Digital Library Architecture; digital licensing; Digital Mathematics Library; digital media centers; Digital Object Identifier; digital publishing; Digital rooms of consultation; digital typography; digitale; Digitalisation; digitalització.; digitalne knjižnice; digitisation; Digitization of Books of the Renaissance; digitized resources; DINI; DiRectory of Open Access Journals Comunicazione scientifica; Direct Hit; directorios; diritti connessi; diritti d'autore e catalogo; Diritto d'Autore e legislazione; diritto di accesso al'informazione; Discipline-based archives; disclosing; diseño de información; dissemination and use of technical-scientic information; distributed catalogues; distributed eprints archives; District Architecture for Networked Edition; District Architecture for Networked Editions; DLIST; DLIST (Digital Library of Information Science and Technology); DOAJ; Document Delivery via Internet; document importation; document management systems; Document media; document models; document sharing; Documenta Matematica; Documentació periodística; Documentación; documentación periodística; documentalist training; documentary committee of company; documentary heritage; Documentary Information Center; Documentary Products; Documentation and archaelogy; documentation centres; documentation in Rehabilitation Bioengineering; documenti digitali; Documentos audiovisuales; documentos electrónicos; documents cartographiques; DOI; DoIS; DoIS (Documents in Information Science); dones; Dorothy Crowfoot Hodgkin; drets d'autor; droit des auteurs; DSpace; DSpace(tm); Dublin Core metadata; DWH; EasyWeb; EBLIDA; e-book; e-book Editoria elettronica; e-book working Group; Ebsco; ECDL; ECIA '99; Ecole Nationale Supérieure des Sciences de l'Information et des Bibliothèques; economía; economic model; economic resources; Edición Electrónica; EDIFICARE; Edit Mediterrània; éditeurs Editoria elettronica; édition scientifique commerciale; editori e librai; editori/tipografi; editoria; editoria aperta; editoria commerciale; editoria italiana online; editorial elettronica scientifica; editorial policies; Educación musical; Educación teológica; education.; EEES; effects of big deals; e-journal; e-journals Statistiche d'uso dei periodici elettronici; el futuro de las bibliotecas; electonic publishing; electronic age; electronic book; electronic books; Electronic catalogs; electronic collections; Electronic Data Processing; electronic document delivery; electronic government; Electronic information in Italy; electronic integration; electronic journal; Electronic Journalism.; electronic journals management; electronic journals survey; electronic libraries Editoria elettronica; electronic links; electronic mail; Electronic publishing credibility; Electronic Publishing Trust for Development; electronic Records; Electronic Records management; Electronic reference service; Electronic Resource Management Initiative; Electronic resources (RER); electronic table of contents; Electronic Text Center; elektronicki arhivi znanstvenih radova; elementi

metapodataka za opis zbirke; E-LIS (Eprints in Library and Information Science); Elsevier; ELSSS: Electronic Society for Social Sciences; EMBO; EMIS 2001; emisiones en Internet; Empathy; Empleo; Employment; Empoli; enciclopèdies; Encoded Archiving Context; Encomix; ENCompass; encyclopaedia; encyclopedia; Encyclopedia of Astronomy and Astrophysics; endrogram; English Cathedral Libraries file; Ensemble; Enseñanza bibliotecológica en México; ensenyament bibliotecari; ENSSIB; enti collettivi; entorno digital; epistemology; EPO; Eponymic Persons; eponymous citations; eponyms; e-print servers.; e-prints in Library and Information Science; eprints repositories Protocollo OAI per la raccolta di metadati; EPT; e-publishing Editoria elettronica; ERCIM Technical Reference Digital Library; e-resources; ERMI; ERMS; ERPANET; escalabilidad; eScholarship Repository; escoles de biblioteconomia; Escuelas de bibliotecología; espacio natural; espacio rural; Espai Europeu d'Educació Superior; español; espanyol; Esperienza Di Immediata Catalogazione con Fiduciaria Attivazione di un rapporto diretto con gli Editori; estándares; Estudiantes de ciencias de la información; Estudio de Usuarios de Información; Estudios de usuarios; ethics; ética; ETRDL; EUB; EUCIP; EULER; EUMEDCONNECT (EUMEDIS; EuroKnowledge Project; Europe; European Certification of Informatics Professionals; European Consortium for Digital Preservation; European digital content; european directive; European Educational Network; european information and documentation professionals; European Library Project (TEL); European network; European University Institute; Euroréférentiel I&D; Evaluación de los servicios bibliotecarios universitarios; Evaluación de Sistemas de Información; Evaluation; Evaluation of Information systems; evaluation of Scientific activities.; evaluation of scientific publications; Evaluation of the librarians university services; Evidence Based Librarianship; excavation documentation; excavation journal; Excite; exclusion; experience of user; experiencia de usuario; experimental; Exposiciones; exposicions; expositions; Extended Enterprise Resources Planning; Extranet; Extranets; Extremadura; faccette; Facet classification; Faceted Application of Subject Terminology; faceted classification; facets; FAD; FAIR; FAIR Programme; FAIR: Focus on Access to Institutional Resources; Families; FAST; FAST Image Transfer Adobe Photoshop plug-in; features; Fedora; feminist movement; FIGARO consortium; File Room; file sharing; filosofia; Filtering Service; fine arts; Florence University Press; Fondazione Ezio Franceschini; Fondazione Franceschini; Fondo delle leggi degli antichi Stati italiani; Fondo musicale Siciliani; fondos documentales; fons documentals.; fonts d'informació en art; fonts d'informació en biblioteconomia i documentació; Forecasting; foreign policy; formación en información; formación profesional del estudiante universitario; formati; formats; forms; fornitori commerciali; fornitura documenti; FORSKDOK; forums.; Fracture numérique; Frank Webster; Free Flow of Scientific Information; French consortia; French Official Corporate bodies of the Ancient Regime; fuentes de información en arte; fuentes de información en biblioteconomia y documentación; fuentes documentales; fulltext document; Functional Requirements And Numbering of Authority Records; Functional requirements for authority numbers and records; Functional requirements for bibliographic Records Nomi multipli; functionalities; Future; GAP; GASCO; gateways; GDSS; GEAC; GED; Gemeinsame Körperschaftsdatei; Gene accessions; geographic materials; geological information; German; German Academic Publishers; German authority files; gestió de col·leccions; gestió de documents electrònics.; Gestión de calidad; gestión de colecciones; Gestión de

Documentos; gestión de la información; gestión de recursos electrónicos; gestione della conoscenza matematica; gestione di materiali non bibliografici; gestor de información; Getty place name thesaurus file Tesauro CERL; Giacon; Giappone e Corea; GILS; Giovanni Marcanova; GKD; Glasgow ePrints Service; Gli autori in Medioevo Latino; global information society; global knowledge society; GNU Eprints; GNU EPrints Software; gophers.; governative libraries; government documents on the Net; government information Editoria elettronica; Government Information Locator Services; Greenstone; Grey literature in matter of prevention and safety in work places; Groundnut; Group Decision Support System; groups of news; Groupwork; gruppi di lavoro virtuali; grups de notícies; GSARE; guide; Guide alla biblioteche; Guidelines for Authority and Reference Records; Guidelines for OPAC displays; Guidelines for subject authority and reference entries; Gutenberg's Bible; Hand Press Book Database; Handbook of Special Librarianship and Information work; handwriting; haptic interaction; headings; Health and safety at work with VDT Salute e sicurezza sul lavoro con VDT; health information; health libraries; heritage institutions; heuristic tests.; Hibiscus cannabinus; Hibiscus sabdariffa; High Wire Press; història bibliogràfica i bibliofílica; Història de l'art; Historia del arte; History of art; History of Medicine; History of printig industry; Hong Kong Chinese Authority for Names; HPB database; Humbul Humanities Hub; Humorous literature; hybrid journals; hypermedia; hypertext; I; I&D professions; I&D public enterprises; ICCP; iCite; iconographic documents; ICT european certifications; ICT in didactics; identificatori bibliografici; ideological dictionaries; idiomas; IF; IFAD Documents Centre; IFLA voucher; ILIAC; illuminated codices; ILS; image files; Image-Miner; ImageQuery; IMCE; impatto di citazione; impremta; imprint names; in Italian: an Authority List; Incite; inclusion; incunables; incunabula; indagine sulle riviste lettroniche; index languages; indexes and abstracts; indexing and abstracting; Indexing Systems; India; Indicadores; Indicators; Indice 2; indice citazionale; indicizzazione automatica; Individual; individual institution; indización; Induced mutants; industria farmaceutica; industrial settlements; Infoethics 2000; info-learn; infomediaries; Infometrics; INFOMINE; información científica; información geológica; informàtica; information access; Information and Communication Technologies certifications; Information and Communications Technology; Information and Documentation; information archtecture; Information communication; information design; Information generation and dissemination; information industry; Information Integration.; information literacy in academic libraries; information manipulation; Information networking; information networks; information on the Net; information organization; information overload; information resources; information science professional; Information Science students; information scientifique; information sources for library and information science; information system; information systems; Information Technology; information technology and communication; information transfer; information treatment; information trends; information use; Information users; information visualization; information.; Informative Products; Informative programmes; informazione di dominio pubblico; informazione governativa; informazione in Rete; infrastructures et accès à l'Internet; ingegneri bioinformatici; Ingenta; Ingenta Ltd.; innovation; insegnamento delle lingue; Inserm; Institute of Investigation; Institute of Physics Publishing; institutional assets; institutional respositories; Instituto de Investigación; integral system; integrated library systems; integration; Intellectual Property Code; intellectual property Editoria elettronica; intellectual property rights;

intelligent agents; Intelligent Computer-Assisted Instruction; intelligent software agents; Inter Library Loan; INTERCAT; interfacce personalizzate; interfacce utente; interfaces de usuario; interfaces of user; INTERMARC; International Archival Authority RCords (Corporate Bodies; International Conference Authority Control Archivi d'autorità; International Conference on Cataloguing Principles; international co-operation; International Federation of Library Associations and Institutions; International Meeting of Cataloguing Experts; International Online Meeting; international projects.; International Standard Audiovisual Number; International Standard Authority Number; International Standard Bibliographic Description; International Standard Bibliographic Description for Computer Files; International Standard Bibliographic Description for Non-Book Materials; International Standard Bibliographic Description for Serials; International Standard of Archival Description (General); International Standard Text Code; International Summer School on Digital Library; International Summer School on the Digital Library; Internet Archive; Internet Archive Wayback Machine; Internet Grateful Med; Internet in libraries; Internet KM; Internet Portals; Internet resources catalogue; Internet Resources Project; Internet revolution; internet searching; Internet.; interoperabilità; interoperability slobodno dostupni casopisi; INTERPARTY; InterParty project; interuniversity networks; intestazione a grappolo; intestazioni; investigació en ciències de la informació; Investigación Bibliotecológica y de la Información; Investigación en Ciencias de la Información; Investigadores; Investigation in Information Science.; invisible net; IOLIM '98; IOP Journals Archive; IP; ipod; IPR; IR; ISAAR(CPF) Requisiti funzionali per record bibliografici; ISAD(G); ISBD(CF); ISBD(CM); ISBD(CR); ISBD(NBM); ISBD(S); ISBN; ISDL 2001; ISEAT; ISI; Isoenzymes; ISSN; Istituto tecnico Calvi; ItalDML; italia; Italian biomedical libraries; Italian Catholic Librarian Association ACOLIT; Italian electronic publishing; Italian Foundation for voluntary service thesaurus; Italian Group of biomedical and pharmaceutical documentalists; Italian law about publishing; Italian legislation about publishing; italian libraries; Italian manuscripts Controllo d'autorità; Italian Metadata Group; Italian national archival system; Italian national authority file; Italian online publishing; Italian OPACs; Italian periodicals; Italian sociology thesaurus; Italian Web; italy; i-Tor; Ivestigators; Japan MARC; JAPAN/MARC; Jewish Networking Infrastructure Project; Jewish web sites; JHEP; JNIP; Joconde; JoP; Journal of High Energy Physics; Journal preference; Journal productivity; Journalism; journalistic documentation; journals crisis; journals.; JULAC-Hong Kong Chinese Authority Name; juridical protection of databases; Kai M. Siegbahn; Karlsruhe Virtual Katalog; Kenneth G. Wilson; KERIS; keywording; Klaus von Klitzing; knjižnicni kolokviji; Knowledge Base Management System; Knowledge Base Management Systems; knowledge bases; knowledge dissemination; knowledge management in universities; knowledge management.; Knowledge Meta-Organizer; knowledge networking; knowledge organisation systems; knowledge representation; knowledge sharing; knowledge workers; Koha; KOR MARC; Korea Education and Research Information Services; Korean and Japanese scripts; KVK; LACoBiT; LAIT; landscape government; language cross-linking; languages; Laser applications to humans; lavoro d'autorità; lavoro d'autorità in Italia; law convergence; LCNAF; LDL project; Learning process; learning through computers; learning with didactic technologies; legal deposit for electronic publications; legal deposit of electronic documents; legal documentation; leggi; Legislación informacional; legislation.; legislative documents; lengua castellana;

lenguajes documentales; lettaratura astronomica; lettori; lexicology; LIBER; LIBER.; librarian; librarian system; librarianshi literature; librarianship and information science investigation; Librarianship and Information studies; librarianship degree; librarianship education in Mexico; librarias; librariashpip faculties; Libraries and lifelong learning; libraries of the future.; libraries.; library and information science education & training; Library and Information Science manuals; library classification schemes; library consortia Statistiche d'uso dei periodici elettronici; library cooperation in Italy; library management; library management systems; library of agriculture; Library of Congress; Library of Congress metadata; Library of Congress Name Authority File; library philosophy and practice; Library profession in Italy; library professionals; library school courses; library schools; Library Space Planning; Library Technologies Inc.; Librerías; libri antichi; Libri antichi in Toscana; LibriVision; libro elettronico; libros antiguos; libros raros; LibSys; licences Libero accesso a pubblicazioni scientifiche e tecniche; licensing; licenze; Liceo Gian Battista Vico; Liceo Ludovico Antonio Muratori; Liceo Marco Foscarini; Liceo Scipione Maffei; Liceo Tito Livio; life sciences databases Banche dati di scienze biologiche; Linear Regression Analysis Curve; linguaggi catalografici; linguistic; link scent; linking and searching; LIS courses Insegnamento dell'authority control; LIS handbooks; LIS schools in France; List of subject headings in Italian libraries Servizio bibliotecario nazionale; Lista integrata degli Autori Controllati delle Biblioteche in Toscana; liste di autorità; lists of distribution; Literatura bibliotecológica; llicenciatura en biblioteconomia y documentación; LMS; local collection; local collection.; local networks; LOCKSS; London Physical Society; long-term archiving.; Looksmart; Lorenz Model; Los Alamos arXiv.; Lotka's law; Lots of Copies Keep Stuff Safe; Lotus Knowledge Discovery System; LTI; luoghi; luoghi di stampa; Madrid; mailing list; MALVINE; management archive; Management Information; management of electronic resources .; Management of quality; management of the information; management of the knowledge.; managers; Manifest; Mann Gateway; manoscritti italiani; Manuscript annotations; manuscritos; Manutenzione archivi semantici; mappature; marche tipografiche; MARCIVE; marketing; marketing and communication; Mass media; material object; MATH; mathematical digital libraries; Mathematical Knowledge Management; Mathematical Reviews; mathematical subject classification; MathGuide; Math-Net; maths; MathSci; MathSci Disc; matteo Ionta; mediateca; Medical Digital Library; Medical librarianship in Italy; Medical Virtual Library; Medical Web Resources; Medicina Basada en la Evidencia Evidence Based Medicine; Medieval Latin authors; medioevo; medios de comunicación; MEDLARS; Mentor; Mentoring; Mercado de trabajo; meta catalogue; Meta Data Visualisation (MDV); Meta search Engines; metadata Archivi di autorità; metadata biblioteche digitali per la matematica; metadata elements for collection description; metadata preservation; metadata registries; metadata schemas; Metadata Schemes; Metadata Standards; metadata syntax; metadati catalogazione; metadati d'autorità; metadati Dublin Core; metadatos; métadonnées; Metalib; MetaOPAC Azalai italiano; metatags; Methodology; Methodology for the development of Information systems; methods and techniques.; Metodología de Desarrollo de Sistemas de Información; métodos y técnicas; METS; METS schema; microfilmació; microfilmation; Midgard; mitjans de comunicació; MKM; MLAR Controllo d'autorità; MLIA; mobilearn; models; Modena; modern manuscripts; Molecular biology; Monastic Libraries; MOPARK; MoReq; motores de búsqueda; movimiento feminista;

Moving Picture Expert Group; MPEG; MPG eDoc; mrežne knjižare; Multilingual Information Access; Multilingual thesauri; multimedia applications; multimedia databases; multimedia documentalists; Multimedia Information Retrieval; multimedia message systems; multimedialità; Multiple names; multisearching; Municipal archives; Museum; musical education; musical files; musical section; MyCoRe. OA softwares.; names of Perugia and its area Archivi di autorità; names of the Far East; namespace; National Authority Co-operative project; national bibliographies BNI; National Central Library in Rome; National Electronic Library for Health; National Institute of Informatics; National Library of Bolivia; National Library of Medicine; National Science Digital Library; Natural Language Applications; natural space; NCSTRL; Neem Research; NetPrint; NetPrints; nets; Network of Excellence on Digital Libraries; network of libraries; network resources; Networked Computer Science Technical Reference Library; networked organizations; new economy; New York; news archive; news library; NewsEdge Corp.; NewsML; Nexus Network Journal; nformation sources; Nicolaas Bloembergen; NIEC; NII/NACSIS; NITF; NLM; no. 1; nomi cinesi; nomi dell'estremo oriente; nomi di autorità; nomi di luogo; nomi di persona; Nomi di persona del medioevo; Nomi di persona dell'antichità; nomi religiosi; Non-conventional sources; Non Linear Dynamics in Human Behavior; Non-book material; non-indexed eponymal citedness; non-print materials; non-textual documents; notes providing a summary; notes relating to the contents; notices d'autorité; novel; noves tecnologies.; Nuclear Theory; Nucleic acids; nueva economía; nuevo modelo económico; NUMDAM; numeri standard; OAI 1.0 repository.; OAI implementation; OAI services; OAI services.; OAIMH; OAI-PMH Open Archives Initiative Protocol for Metadata Harvesting; OAI-PMH protokol; OAI-PMH services; oai-rights; objectes d'art; object-oriented; object-oriented programming; objetos de arte; OCLC; OEBPS; Official Elsevier archives; Ohio State Unievrsity Knowledge Bank; Okapi; old books; old books' cataloguing; on line theses; online bibliographic resources; online bibliographic search; online bookshops; online catalogs; Online Computer Library Center; Online Information '2000; Online Information '98; Online Information '99; Online Resources for Mathematics; on-line union catalogues; OntoWeb; OpCit; Open acces archives; open access economic models; open access journal; Open Archival Information System; Open Archival Information Systems; Open Archive Initiative Protocol for Metadata Harvesting (OAI-PMH); Open Archive Initiatives; Open Archives Initiative (OAI); Open archives Initiative Electronic Publishing; Open Archives Initiative Protocol for Metadata Harvesting; Open Archives Initiatives harvesting protocol; Open Citation Project; Open eBook Publication Structure; open linking; Open Peer Review process; open publishing; open publishing.; Open Society Institute; Open Source Software; Open-access; OpenCMS; OpenOffice; operational information systems; opsonline; ordenadores de uso público; ordini e privilegi dei comuni; organització de documents electrònics; organización de la información; otvoreni arhivi; otvoreni pristup; outsourcing; OVID; ownership; p. 61-71.; Padua; PAN; PANDORA archive; Papel; paper; Paper preservation; Pascal; pascal biomed; PATLIB; patrimonio bibliográfico; Patrimonio documental; payment; PCC; peer-review; Pere Salvà; performance indicators; performance measurement; Perilla; periodical; periodici; periodici digitalizzati; periodici italiani; Perl; permanent archiving of digital information; permission barriers; permission crisis; Persistent Uniform Resouce Locator; Persona ciegas; personal; Personal Digital Assistants; personal names; Personal Names of the

Antiquity; Personal Names of the Middle Ages; Personennamendatei; Persons; PHP; Physicists; physics; physics libraries; Physics Nobel Lectures; piattaforme FAD; Pierre Lévy; Pierre-Gilles de Gennes; planes estratégicos; Planificación; planimetries; Planning new services; Plant biochemistry; Plant Lectins; plastic arts; plataforma tecnologica; Plone; PLoS; PloS Biology; PMA; PND; pointers; Polonium; Polytechnical University of Valencia.; Popular science; portale TEL; Portales de Internet; portalizzazione; Portals of norms and laws; portas; Postgrado en Bibliotecología; postgrau en biblioteconomia; Preprint Server.; preprints; preprints Conoscenza biomedica; present professional of the information and challenges; presentation software; preservación; preservation of Library materials; Preservation of of archives; Preservation of the documentary heritage; Preserving the Record of Science; prestito interbibliotecario; price barriers; pricing crisis; Principi di Parigi; principi di Toronto; print; print journals; printers; private conferences; Producción científica; Productos documentales; Productos Informativos; profesión; professional de la información; Professional Psychology; professionality; progetti di biblioteche digitali; progetti di digital libraries; progetti di digitalizzazione; Program for Cooperative Cataloging; Program for Cooperative Cataloging Database di autorità; programación orientada a objetos; Programas informativos; programma e-Content; programma IST; programmi comunitari; project management; Project National Park Digital Library; projects - NLS; projects.; promoción; promotion; propietat intelectual; Protección de datos; protocol; Protocol for Metadata Harvesting (OAI-MPH); protocol of evaluation of model EFQM; protocolo de evaluación del modelo EFQM; Pub/Med; pubblicazione elttronica; Public Librarianship; public libraries.; public library; Public Library of Science Editoria elettronica; public terminals; Public-Access Computer Systems; Publicaciones periódicas y seriadas; publicaions periòdiques i seriades; publication concentration; publication density; Publications Quantification; public-domain information; publishers and booksellers; publishers Editoria elettronica; PubMedCentral; PURL; QBIC; quadres de classificació; Quality Of Service; Query By Image Content; Quinquennial publication productivity; Recursos; R. & Zink; Raccolta di statuti; Radioactivity; Radium; RAK Archivi d'autorità tedeschi; Rapport sur l'informatisation de la société; rare books; RCord d'autorità dei soggetti produttori di archivi; RCursos web; readers; reading cognition; Real-Time Authority Control; real-time digital reference services; Recency; recolección; record creators; records organization; recuperación de información; recuperación en el web; Recursos de Internet; recursos informativos; Recursos Web Médicos; red virtual; Redes de información universitaria; redes de information; redes neuronales artificiales; redes telemáticas; REDESMA; ReDIF; Redistribution; refereed journals; reference; reference and information services; reference collection; reference evaluation; reference linking initiative; Reference service software Digital reference service; registrazioni archivistiche; registrazioni di autorità; registri di metadati; registry of particular finds; regulation of intellectual professions; ReID.; reingeniería; relationship between men and computers; religious corporate bodies; religious names; Remote Users; renewal subscriptions; reperimento delle risorse; Repertoire Bibliographique Universelle; Répertoire d'autorité-matière encyclopédique et alphabétique unifié; repertori di biblioteche in Italia; repertori di OPAC; Repositories of information; reproduction; reproduction rights; research group interaction; research impact; Research indicators; research libraries; Research methodology; Research Papers in Economics; ResIDe; resolution services; Resource Discovery; Resource Organisation and Discovery in Subject-based services;

resources Web.; Responsibility for archiving; ressources électroniques; ressources électroniques - bases de données - périodiques électroniques - Université de Genève - abonnements Electronic resources; restricted access; reti; retrospective conversion; re-use; Revisión bibliográfica; revolution; revues électroniques; Rich Site Summary; right to cite; rights.; rinvii vedi e vedi anche; risorse bibliografiche online; risorse elettroniche per la matematica; risorse elettroniche remote; risorse informative; risorse Web; ritenzione diritti autore; riviste ad accesso libero; riviste Open Access; RIX; Robert Escarpit; Roquade.; RoweCom Inc.; Royal Swedish Web Archiw3e; RSLP (Research Support Libraries Programme Collection Description); RSLP (Research Support Libraries Programme Collection Description) analythical model of collection; RSS; RTAC Controllo d'autorità; RTEE; rural space; S. Chandrasekhar; S.D. (2003). Implementing the unthinkable: the demise of periodical check-in at the University of Nevada. Library Collections; SACO; Sala Borsa; Salas de Consulta Digitales; sample groups; Santa Giustina; SBMNI; SBN Ancient Books Antichi Stati italiani; SBN authority file; SBN Libro antico; SBN MARC; SBN-MARC; scalability; schede d'autorità; schedules about documentalists; scheme; Schlagwortnormdatei; scholarly communication.; scholarly communications; scholarly community; scholarly information.; Scholarly Publishing & Academic Resources Coalition Editoria elettronica; Scholarly Publishing Academic Research Coalition; Scholars Portal; Scholarship; school libraries.; science; science and technology; science citation index.; sciences.; Scientific and technical knowledge; Scientific knowledge; scientist; Scientometric analysis; scientometrics & bibliometrics; scirus; SciX project; Scolopi; scuole di biblioteconomia; SDC Search Service; SDIAF; sector turístico; Securing reliable linking; Security; security policy; see and see also references Accesso multilingue ai soggetti; Seed proteins; Selective Dissemination of Information; self-documentation; Semantic authority control; semantic cataloguing; Semantic Web Controllo d'autorità; sensory information navigation; Serafín Estébanez Calderón; serendipity; Serials; serials crisis Editoria elettronica; serials librarian; serveis; serveis d'informació; serveis d'informació bibliográfica; serveis gratuits; serveis gratuits.; service providers.; services in Internet; Services librarians; Servicios bibliotecarios; servicios de información bibliográfica; Servicios de Valor Añadido; servicios en Internet; servicios gratuitos; servicios telemáticos; Servicom; servizi all'utenza; servizi commerciali; servizi di risoluzione; Servizio bibliotecario senese; sharing; sholarship comunication; shop engines; Show of ancient books; SICI; signets; SilverPlatter; Simon van der Meer; Sindicación; Single research institute productivity; sintassi di metadati; Sistema Archivístico; Sistema bibliotecario; sistema integral; Sistemas de Indización; sistemi di automazione bibliotecari; sistemi di gestione di contenuto; sistemi gestionali per biblioteche; Sistemi per il database networking; Site for Science; siti web di interesse ebraico; SKIOS; slavistica; Social Science citation Index; social sciences thesauri; social sciences.; sociedad cibernética; sociedad del conocimiento global; sociedad global de la información; sociedad virtual; Società dell'Informazione; Società internazionale per lo studio del Medioevo latino; Society publishers; sociology of science; Soggettario delle biblioteche italiane; Soggettario per i cataloghi delle biblioteche italiane; soggettazione; Soportes documentales; SOSIG; Sound documents; South America; spanish; Spanish public libraries; SPARC.; SPARC: Scholarly Publishing and Academic Resources Coalition; special collections; Special Search Engines; SPIRES-HEP; spreadsheet software; Springer Verlag; Spritel; Staff; staff management; stalno strucno usavršavanje library colloquium; Standard Generalised

Markup Language; Standard Generalized Markup Language; Statistical Mechanics; strategic plans; stratigraphic diagram; stratigraphic sequence; stratigraphic unities; stratigraphy; streaming technology; streaming technology.; strumenti di classificazione; study of users; subject access; Subject cataloguing; subject heading languages; subject indexation; subject indexing; subject indexing languages; Subject metadata; submission; Subrahmanyan Chandrasekhar; Sud Amèrica; sui generis right; Sulmona; Sur America; suradnja; Survey research methods; surveys and photos registries; SWD; SWD/RSWK; Swets Subscription Service; Switching language; Synchronous References; Synchronous self-citations; Syndication; System of Archives; Système d'Information SIST Open access; tables des matières numérisées; tacit knowledge; Tatoo; Teaching Authority Control; Technical report; technologies.; Tecnología de información y comunicación (TIC); tecnologias; tecnologie dell'informazione; tecnologies de la informació.; Tecnoneet; TEI Controllo d'autorità; TEI Header; TEL; telecomunicaciones; telecomunicacions; telecomunications; telematic networks; telematic services.; Televisión; Temporal profile of selfreferences; Teoría archivística; tercer mundo; TERENA; TERMCAT; terminales; terminología; terminologies; tesi; tests heurísticos; Text Encoding Initiative Header; TEXT-E; the access to scientific information; The American Physical Society.; The Dialog Corporation; The European Library; the future of the libraries; The Stoa Consortium; theological education; theory of social epistemology; thesaurus MeSH; Thèses En Ligne Centre for Direct Scientific Communication; third world; Thorium; Tim Jewell; Time-lag; Tipping point; TISS; titoli uniformi; TLS; Tokyo National Library; tomismo; tools; Torii; Toronto Tenets; tourism; trabajo colaborativo; trabajo en equipo; traditional library; traductor automàtic; traductor automático.; training for information professionals; Training for librarians; Training libraries; trajna izobrazba; Trans-European Research and Education Networking Association; transition models; translation; trattamento dell'informazione slava in Italia; TRC/MARC; Treball en grup.; Treecon.; trends; Treviso; triangulation; tutorial; Types of archives; Types of libraries; U.S.A.; UAP; UK; UK Archival Thesaurus; UKMARC; Ultranet; Uncover; Undernet; uniform resource identifier; uniform resource locator; uniform resource name; Uniform Resource Names; uniform titles; UNIMARC/BNI; United States of America; United States.; universal access; Universal Availability of Publications; Universal Decimal Classification; universidad; Universidad de Murcia; Universidad de Salamanca; Universidad Evangélica Boliviana; Universidad Politècnica de Catalunya; Universidad Politécnica de Valencia; università italiane; Universitat Politècnica de Catalunya; universities.; university networks; University of Florence libraries Biblioteche dell'Università di Firenze; University of Michigan University Library Scholarly Publsihing Office; University of Molise; University of Murcia; University of Salamanca; University of Siena; university/faculty archives; unlimited access; Uruguay; US records; US registry; usage; use; use of information sources; user; User needs; user training for information literacy; user/author; users and usability; users' behaviours; users education; Users needs; Users of Iformation's study; USMARC tag 856; uso de fuentes de información; usuaris; utente autore; utenti; utenti accademici; Utenza statistiche biblioteche Genova management marketing ministero beni culturali statali; València; Valentia; Valentia.; valor de la información; valor del documento; value of the document; value of the information; valutazione delle pubblicazioni scientifiche; Vatican Library; vendors of electronic publications; Verona; vertical portals; VHS; video; video documents; videos;

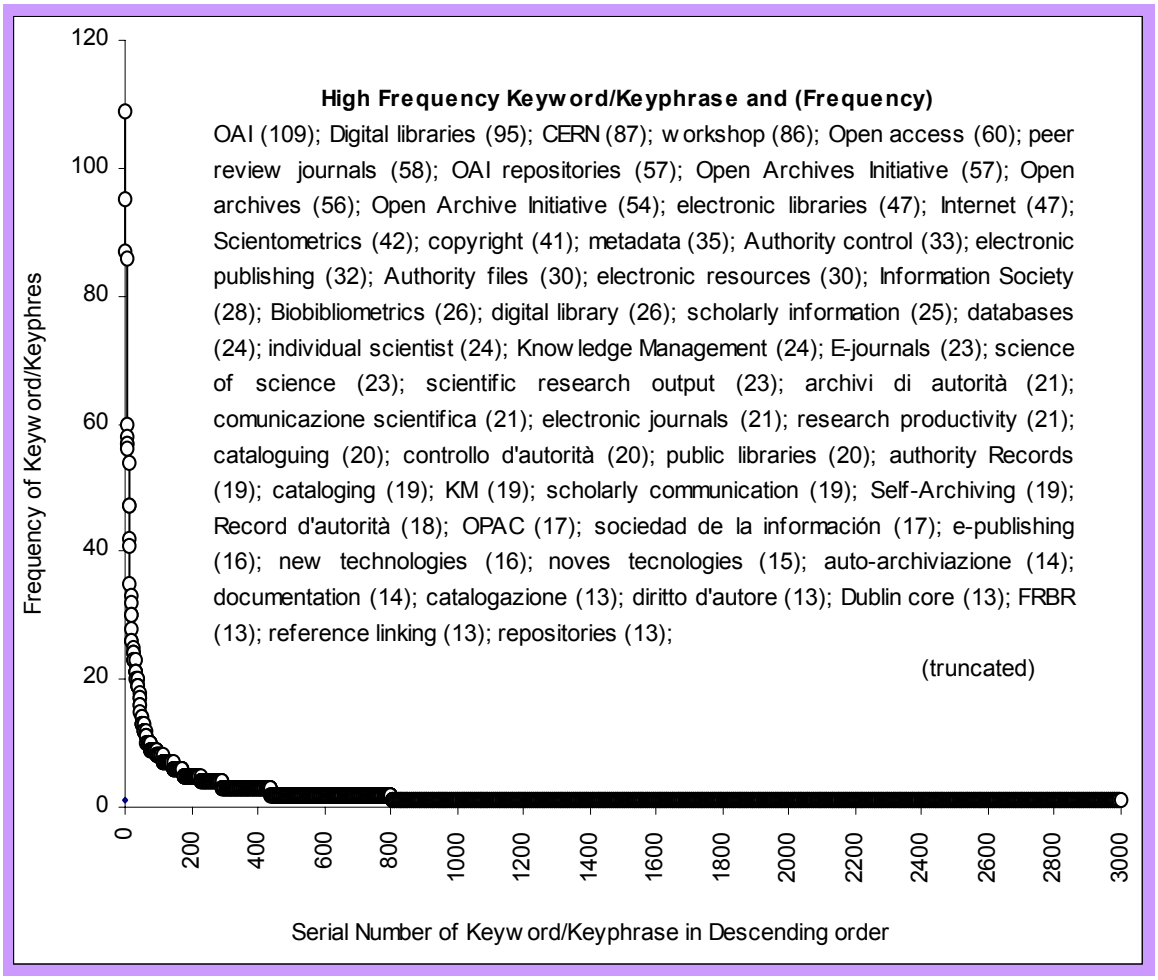

Fig. 8.19: Keywords/Keyphrases occurrence (High frequency Keywords/Keyphrases presented in the box) in the author-self-archiving metadata of the 983 EPrints in the live archives at site eprints.rclis.org downloaded on and up to 7th July, 2004

Among 983 live archives, Seventy Nine live archives had one keyword each, fifty five live archives had two keywords each, one hundred twenty five live archives had three keywords each, one hundred sixteen live archives had four keywords each, eighty nine live archives had five keywords each, one hundred two live archives had six keywords each, sixty five live archives had seven keywords each, eighty five live archives had eight keywords each, sixty one live archives had nine keywords each, fifty two live archives had ten keywords each, fourty four live archives had eleven keywords each, twenty nine live archives had twelve keywords each, ten live archives had thirteen keywords each, fifteen live archives had fourteen keywords each, nine live archives had fifteen keywords each, six live archives had 16sixteen keywords each, five live archives had seventeen keywords each, five live archives had eighteen keywords each, five live archives had nineteen keywords each, four live archives had twenty

keywords each, , three live archives had twenty two keywords each, two live archives had twenty three keywords each, five live archives had twenty four keywords each, two live archives had twenty five keywords each, two live archives had thirty one keywords each, and two live archives had thirty two keywords each.

There were live archives with forty seven keywords, forty two keywords, thirty nine keywords, thirty six keywords, twenty eight keywords, and twenty one keywords.

8.4 Focus on single domain specified Eprint Archives

8.4.1 Domain A: Theoretical and general aspects of libraries and information

8.4.1.1 Growth of E-Print deposits

The 27 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.20)

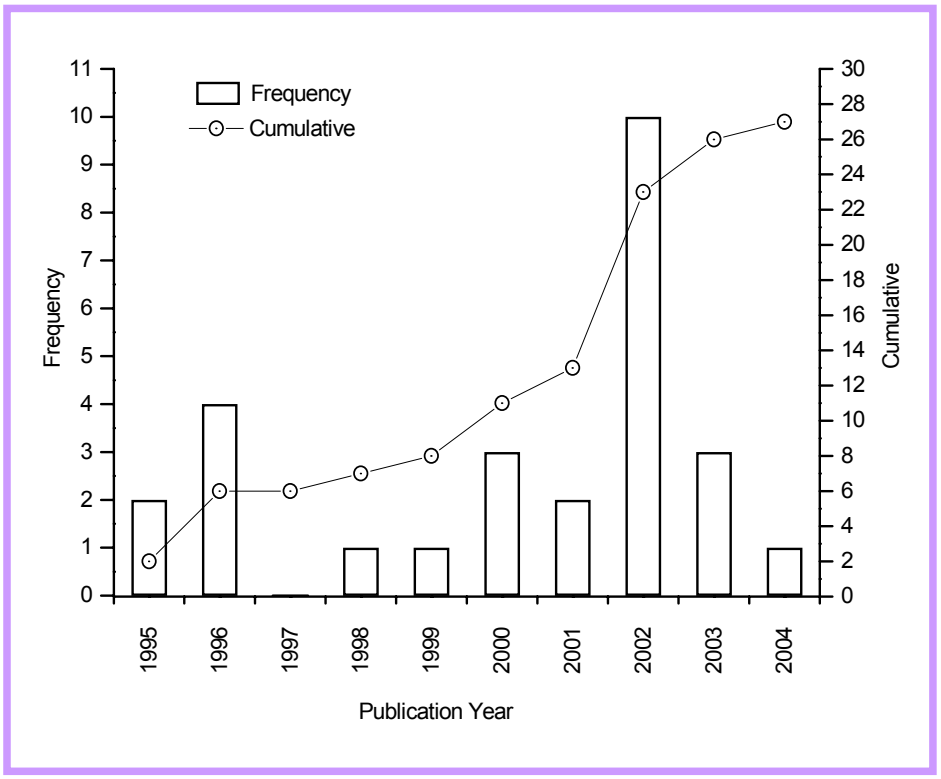

Fig. 8.20: Frequency of the eprints in the live archives in single domain (A : Theoretical and general aspects of libraries and information) at site eprints.rclis.org having 27 E-Prints downloaded on and up to 07-07-2004

8.4.1.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain A: Theoretical and general aspects of libraries and information had 27 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 73 keyword/keyphrase (Table 8.17). Top ranking keyword/keyphrase were: public libraries, Bibliotecas públicas, documentation, Library and Information Science, and sociedad de la información (Figure 8.21).

Table 8.17: Keywords/Keyphrases occurrence in the metadata of 27 E-Prints of single domain specifications
(A: Theoretical and general aspects of libraries and information) at site eprints.rclis.org downloaded on and

Sl. No.	Keywords/Keyphrases	Frequency
1.	public libraries	5
2.	Bibliotecas públicas	4
3.	documentation	3
4.	Library and Information Science	3
5.	sociedad de la información	2
6.	Technologies	2
7.	art	2
8.	ciencias de la información	2
9.	hospitales	2
10.	Epistemology of Information sciences	2
11.	Information and Communication Technologies	2
12.	ITC	2
13.	library science	2
14.	LIS	2
15.	tendencias en la infomación	2
16.	Tipografía digital	2
Fifty seven Keywords/Keyphrases with frequency One		
Iternet; OPAC; women; Information Society; Mujeres; bibliotecas; information science; specialized libraries; users; bibliography; Bibliotecas especializadas; public administration; Knowledge Management; usuarios; Biblioteques públiques; thesauri; Valencian Community; bibliotecas hospitalarias; Comunidad Valenciana; ER; linguistics; terminology; UNESCO; Associació Valenciana d'Especialistes en Informació; AVEI; biblioteca pública; catalogazione multimediale sbn; CDD 21.; classification methods; Classificazione decimale Dewey; DDC 21.; Decimal Dewey Classification; diffusion; difusión; digital typography; Documentalist; estándares; information theory; information trends; knowledge sharing; lexicology; librarian system; librarias; Manifest; marketing; promoción; promotion; rer; services in Internet; servicios en Internet; Sistema bibliotecario; standards; subject indexation; tacit knowledge; theory of social epistemology; Training libraries; and Utenza statistiche biblioteche Genova management marketing ministero beni culturali statali.		

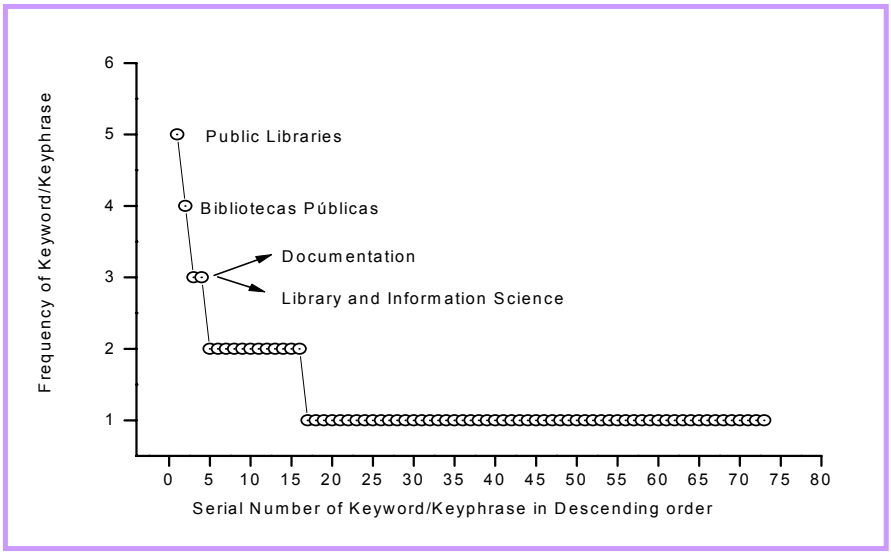

Fig. 8.21: Keywords/Keyphrases occurrence in the metadata of single domain (A: Theoretical and general aspects of libraries and information) at site eprints.rclis.org having 27 E-Prints downloaded on and up to 07-07-2004

Table 8.18: Identification of authors in the Domain A: Theoretical and general aspects of libraries and information as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Ridi, Riccardo	4	14.	Mackenzie Owen, John	1
2.	Marchitelli, Andrea	2	15.	Marco Aledo, José Luis	1
3.	Miñarro, Lola	2	16.	Margaix, Didac	1
4.	Bacco, Nicoletta	1	17.	Marzoli, Rita	1
5.	Baldazzi, Anna	1	18.	MEI, Editorial board	1
6.	Bertomeu Martínez, María Angustias	1	19.	Mircov, Svetlana	1
7.	Caus, Amparo	1	20.	Moreira, Alfons	1
8.	Cornero, Alessandra	1	21.	Popovic, Ljubodrag	1
9.	Cululejic, Dragana	1	22.	Radulovic, Zdravka	1
10.	Fondin, Hubert	1	23.	Seguí, Romà	1
11.	García Antón, Ramón	1	24.	Stefanovic, Mila	1
12.	Guido, Francesco	1	25.	Vives, Josep	1
13.	Ilic, Biljana	1	Total		30

8.4.2 Domain B: Information use and sociology of information

8.4.2.1 Growth of E-Print deposits

The 80 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.22)

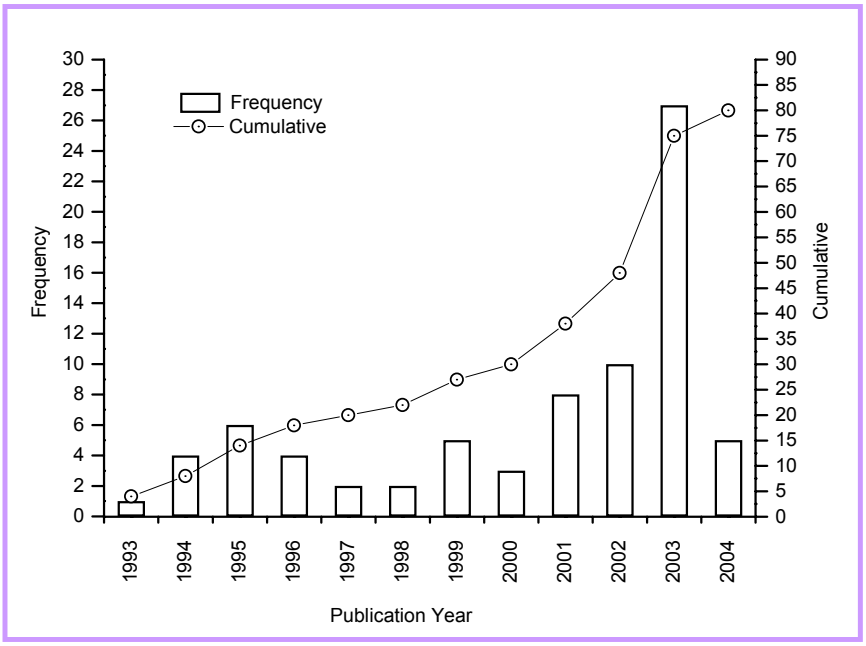

Fig. 8.22: Frequency of eprints in the live archives in single domain (B: Information use and sociology of information) at site eprints.rclis.org having 80 E-Prints downloaded on and up to 07-07-2004

8.4.2.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain B: Information use and sociology of information 80 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 243 keyword/keyphrase (Table 8.19). Top ranking keyword/keyphrase were: Scientometrics, Biobibliometrics, individual scientist, science of science, scientific research output, research productivity, Open access, and Bibliometrics (Figure 8.23).

Table. 8.19 :Keywords/Keyphrases occurrence in the metadata of 80 E-Prints of single domain specifications (B: Information use and sociology of information) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	Scientometrics	30
2.	Biobibliometrics	23
3.	individual scientist	20
4.	science of science	20
5.	scientific research output	20
6.	research productivity	18
7.	Open access	13
8.	Bibliometrics	8
9	Information Society	6
10.	publication productivity	6
11.	Globalización	5
12.	sociedad de la información	4
13.	society of information	4
14.	citation analysis	4
15.	Nobel laureate	4
16.	Internet	3
17.	women	3
18.	Mujeres	3
19.	documentation	3
20.	Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities	3
21.	Scientometric portrait	3
22.	Open archives	2
23.	Digital libraries	2
24.	public libraries	2
25.	specialized libraries	2
26.	Bibliotecas especializadas	2
27.	dictionaries	2
28.	rights of author	2
29.	Budapest Open Access Initiative.	2
30.	diccionaris	2
31.	history of science	2
32.	llengua catalana	2
33.	Catalan language	2
34.	dissemination of knowledge	2
35.	H. J. Bhabha	2
36.	knowledge society	2
37.	Noves tecnologies i Internet	2
38.	publication productivity analysis	2
39.	recerca terminològica	2
40.	Research collaboration	2

41.	Role model scientist	2
42.	sociedad del conocimiento	2
43.	Terminologia de la societat de la informació	2
44.	terminological investigation.	2

One Hundred Ninty Nine Keywords/Keyphrases with frequency One

Open Archive Initiative; comunicazione scientifica; Self-Archiving; auto-archiviazione; scholarly communication; new technologies; Unión Europea; bibliotecas; España; information science; journals; libraries; Spain; bibliography; Bibliotecas públicas; companies; electronic publishing; empresas; noves tecnologies; RICA; bibliografia; bibliographical selection; editorials; European Union; selección bibliográfica; accés obert; arxius oberts; ciencias de la información; distribution lists; information services; Knowledge Management; listas de distribución; magazines; profesionals en información electrónica; professionals of electronic information; revistas; servicios de información; Calidad; collaboration; editoriales; education; free software; nuevas tecnologías; OAI-PMH; Quality; ARCHIM; communication; Computer Science; Informetrics; KM; Linguistica; medical libraries; UE; UNESCO; N/A; A. H. Zewail; accesso aperto; Aden (DATC-MAE); Ahmed Hassan Zewail; angle bhabha scattering; archivi di e-prints; Author self-citations; Author self-references; authorship pattern; basi di dati biomediche; bhabha scattering; bibliometric indicators; bibliometrics indicators evaluative link analysis Impact Factor; biblioteques escolars; Biochemical genetics; Bioenergetics; Biotechnology; Bradford's law; Brassica juncea; Cajanus cajan; canon; channels of communication; Chenopodium amaranticolor; citation impact Impatto della ricerca; Classic paper; Classic-author; Classic-Author Synchronous Self-References; cluster analysis; communitarian programmes; contenuti digitali europei; core journals; Crop productivity; cybernetic society; Cytogenetics; desarrollo; descriptive achievments; development.; difusió del coneixement; digital divide; Dorothy Crowfoot Hodgkin; drets d'autor; electronic libraries Editoria elettronica; endrogram; epistemology; eponymous citations; eponyms; eprint archives; ethics; ética; EUMEDCONNECT (EUMEDIS; European digital content; exclusion; foreign policy; Fracture numérique; Gene accessions; global information society; global knowledge society; Groundnut; Hibiscus cannabinus; Hibiscus sabdariffa; Humorous literature; idiomas; impatto di citazione; inclusion; India; Individual; individual institution; Induced mutants; industrial settlements; Infometrics; informática; infrastructures et accès à l'Internet; international co-operation; Isoenzymes; italian biomedical database; languages; learning society; Linear Regression Analysis Curve; linguistic; Lotka's law; Mentor; Mentoring; Methodology; Molecular biology; new economy; NIEC; non-indexed eponymal citedness; Nucleic acids; nueva economía; Open archives Initiative Electronic Publishing; otvoreni pristup; Perilla; Plant biochemistry; Plant Lectins; Polonium; Popular science; programari lliure; programma e-Content; programma IST; programmi comunitari; publication concentration; publication density; Publications Quantification; Quinquennial publication productivity; Radioactivity; Radium; Recency; red virtual; research group interaction; research impact; research in Italy; S. Chandrasekhar; school libraries.; Scientific and technical knowledge; scientist; Scientometric analysis; Seed proteins; social sciences.; sociedad cibernética; sociedad del conocimiento global; sociedad global de la información; sociedad virtual; Società dell'Informazione; societat del coneixement; Society of the knowledge; sociology of science; software libre.; staff management; Synchronous self-citations; Système d'Information SIST Open access; Temporal profile of selfreferences; tercer mundo; third world; Thorium; Time-lag; TISS; training information professionals; Treecon.; U.S.A.; Vigna mungo; Vigna radiata; virtual network; virtual society; and Wheat.

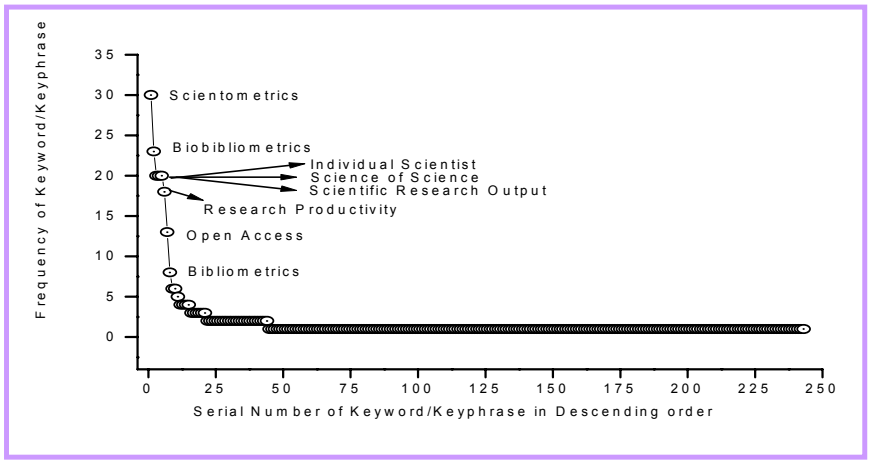

Fig. 8.23: Keywords/Keyphrases occurrence in the metadata of single domain (B: Information use and sociology of information) at site eprints.rclis.org having 80 E-Prints downloaded on and up to 07-07-2004

Table 8.20: Identification of authors in the Domain B: Information use and sociology of information as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Kalyane, V L	34	32.	di Girolamo, Maurizio	1
2.	Kademani, B S	16	33.	Fraile, Mª Ángeles	1
3.	Kumar, Vijai	8	34.	Golub, Koraljka	1
4.	Comba, Valentina	4	35.	Gorosito López, Antonio F	1
5.	Kalyane, S V	4	36.	Harnad, Stevan	1
6.	Angadi, Mallikarjun	3	37.	Kadam, S N	1
7.	Kademani, A B	3	38.	Kamble, Pradeep S	1
8.	Max Planck Society,	3	39.	Koganuramath, M M	1
9.	Prakasan, E R	3	40.	Koganuramath, Muttayya	1
10.	Sen, B K	3	41.	Madan, V K	1
11.	Jange, Suresh	2	42.	Maffei, Lucia	1
12.	Mas i Fossas, Gemma	2	43.	Maffenini, Walter	1
13.	Munnolli, S S	2	44.	Malamoud, Georges	1
14.	Rao, K Vidyasagar	2	45.	Mangiaracina, Silvana	1
15.	Swarna, T	2	46.	Marcheschi, Daniela	1
16.	Aronson, Barbara	1	47.	Mas i Hernàndez, Jordi	1
17.	Badurina, Boris	1	48.	MEI, Editorial board	1
18.	Balakrishnan, M R	1	49.	Molholm, Kurt	1
19.	Balestri, Maria Grazia	1	50.	Nobili, Dario	1
20.	Barrenechea Zambrana, Ramiro	1	51.	Pierrat, JeanJacques	1
21.	Berger, Geneviève	1	52.	Pinto Calderón, J Rocío	1
22.	Brechot, Christian	1	53.	Ramos Sánchez, Julio	1
23.	Cachero, Cristina	1	54.	Raseroka, Kay	1
24.	Canuto, Anna	1	55.	Samanta, R K	1
25.	Cattari, Massimina	1	56.	Santoro, Michele	1
26.	Chong Carrillo, Olimpia	1	57.	Spiesberger, Manfred	1
27.	Civardi, Marisa	1	58.	Torres, Isabel de	1
28.	Convertini, Alessandra	1	59.	Tosato, Massimiliano	1
29.	Cornella, Alfons	1	60.	Vrana, Radovan	1
30.	Currás, Emilia	1	61.	Wolton, Dominique	1
31.	Deschamps, Christine	1	62.	Zavarrone, Emma	1
Total					138

8.4.3 Domain C: Users, literacy and reading

8.4.3.1 Growth of E-Print deposits

The 13 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.24)

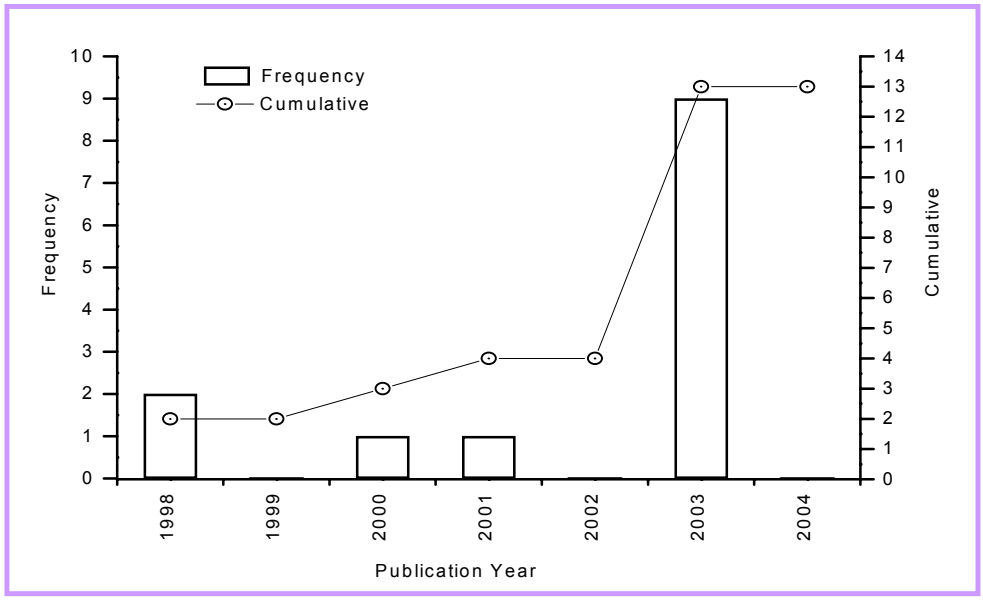

Fig. 8.24: Frequency of eprints in the live archives in single domain (C: Users, literacy and reading) at site eprints.rclis.org having 13 E-Prints downloaded on and up to 07-07-2004

8.4.3.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain C: Users, literacy and reading 13 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 49 keyword/keyphrase (Table 8.21). Top ranking keyword/keyphrase were: formació d'usuaris, information literacy, ancient books, alfabetització en informació, alfabetización en información, formación de usuarios, library instruction, and user education (Figure 8.25).

Table. 8.21: Keywords/Keyphrases occurrence in the metadata of 13 E-Prints of single domain specifications (C: Users, literacy and reading) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	formació d'usuaris	3
2.	information literacy	3
3.	ancient books	2
4.	alfabetització en informació	2
5.	alfabetización en información	2
6.	formación de usuarios	2
7.	library instruction	2
8.	user education	2

Forty One Keywords/Keyphrases with frequency One
Internet; copyright; public libraries; women; cataloguing; Mujeres; bibliography; bibliografia; bibliographical selection; editorials; selección bibliográfica; editoriales; authorship; Didactics; information sources; recursos de información; academics libraries; alfabetització informacional; Authenticity; biblioteche giuridiche; children; communication process.; digital media; editorial policies; Empoli; engineering; enginyeria; formación en información; guide; handwriting; ingenieria; Liceo Ludovico Antonio Muratori; Manuscript annotations; material object; Modena; ownership; reproduction; reproduction rights; Show of ancient books; universidad; and universitat.

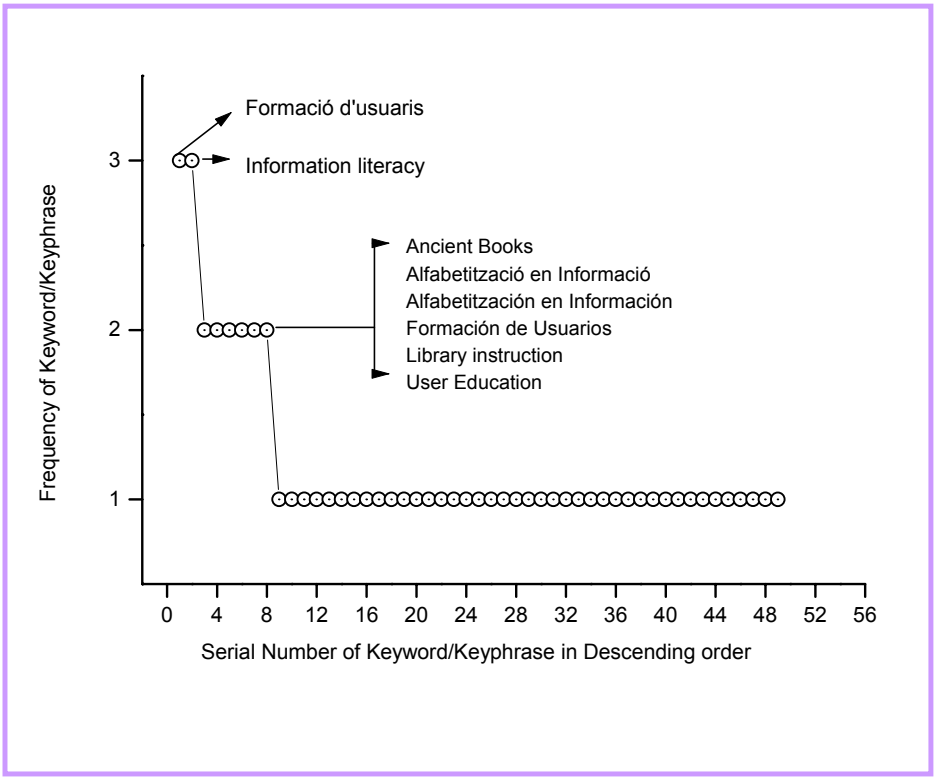

Fig. 8.25: Keywords/Keyphrases occurrence in the metadata of single domain (C: Users, literacy and reading) at site eprints.rclis.org having 13 E-Prints downloaded on and up to 07-07-2004

Table 8.22: Identification of authors in the Domain C: Users, literacy and reading as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Vives, Josep	3	10.	di Girolamo, Maurizio	1
2.	Muntada, Mercè	2	11.	di Girolamo, Maurizio	1
3.	Núñez, Sandra	2	12.	Lavín Forcada, Serafina	1
4.	Perpiñán, Marta	2	13.	Mackenzie Owen, John	1
5.	Virós, Blanca	2	14.	Mumbrú, Josep	1
6.	Author Unspecified	1	15.	Rasetti, Maria Stella	1
7.	Barbieri, Edoardo	1	16.	Reñé Ferrando, Teresa	1
8.	Cavirani, Sonia	1	17.	Tavoni, Maria Gioia	1
9.	De Toffol, Federica	1	18.	Tinti, Paolo	1
Total					**9**

8.4.4 Domain D: Libraries as physical collections

8.4.4.1 Growth of E-Print deposits

The 30 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.26)

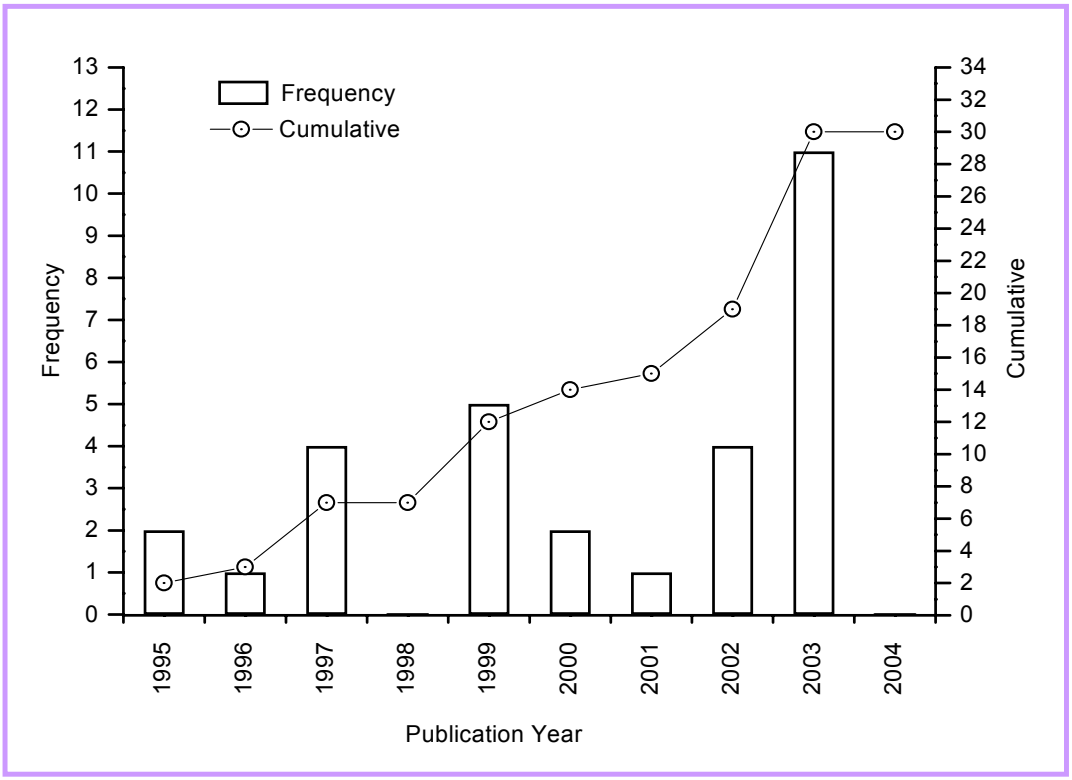

Fig. 8.26: Frequency of eprints in the live archives in single domain (D: Libraries as physical collections) at site eprints.rclis.org having 30 E-Prints downloaded on and up to 07-07-2004

8.4.4.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain : D: Libraries as physical collections 30 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 102 keyword/keyphrase (Table 8.23). Top ranking keyword/keyphrase were: Padova, Bibliotecas universitarias, History of Libraries, Universidad de Valencia, University of Valencia, and university/faculty library (Figure 8.27).

Table. 8.23: Keywords/Keyphrases occurrence in the metadata of 30 E-Prints of single domain specifications (D: Libraries as physical collections) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	Padova	5
2.	Bibliotecas universitarias	4
3.	History of Libraries	4
4.	Universidad de Valencia	3
5.	University of Valencia	3
6.	university/faculty library	3
7.	sociedad de la información	2
8.	public libraries	2
9.	Music	2
10.	XML	2
11.	art	2
12.	ancient books	2
13.	hospitales	2
14.	Biblioteques públiques	2
15.	interoperability	2
16.	Venezia	2
17.	Bibliotecas nacionales	2
18.	collections	2
19.	cooperacion	2
20.	museums	2
21.	Museus	2
22.	national libraries	2
Eighty Keywords/Keyphrases with frequency One		
Internet; Archives; Information Society; bibliotecas; libraries; specialized libraries; users; Bibliotecas públicas; Catalogs; Bibliotecas especializadas; Knowledge Management; usuarios; content management; gestión de información; network; Red de bibliotecas; University Libraries; archivos históricos; bibliotecas hospitalarias; Comunitat Valenciana; e-government; Gandia; Gestión de Contenidos; Historical archives; KM; medical libraries; México; administración electrónica; amministrazione pubblica; Archival theory bibliography; art information sources.; arxius històrics; Bibliografia archivística; Biblioteca Nacional de México; biblioteche governative; biblioteche italiane; biblioteques nacionals; biblioteques universitàries.; Borgia.; Borja; bosnia and herzegovina; Centro de Información Documental; Chieti; Documentary Information Center; documentation centres; electronic government; filosofia; Finland; Finlandia; fonts d'informació en art; fuentes de información en arte; geographic materials; Giacon; Giovanni Marcanova; governative libraries; health libraries; IFAD Documents Centre; impremta; information management; Istituto tecnico Calvi; italia; italian libraries; italy; Liceo Gian Battista Vico; Liceo Marco Foscarini; Liceo Scipione Maffei; Liceo Tito Livio; medioevo; Monastic Libraries; Museos; Padua; print; Santa Giustina; Scolopi; special collections; Sulmona; tomismo; Treviso; Valentia; and Verona.		

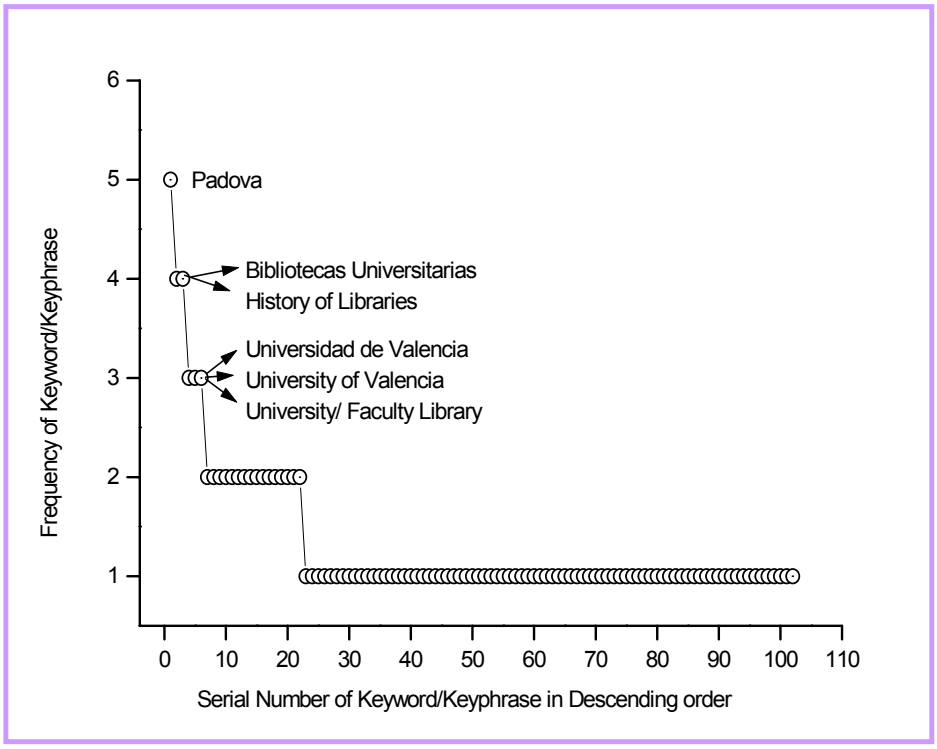

Fig. 8.27: Keywords/Keyphrases occurrence in the metadata of single domain (D: Libraries as physical collections) at site eprints.rclis.org having 30 E-Prints downloaded on and up to 07-07-2004

Table 8.24: Identification of authors in the Domain D: Libraries as physical collections as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Author Unspecified	1	19.	Montejo, Ángel	1
2.	Barbé Furió, Cristina	1	20.	Moreira, Alfons	1
3.	Chapa Villalba, Salvador	1	21.	Moya, Josep M	1
4.	Citelli, Leo	1	22.	Ordiñana, Antoni	1
5.	Costa Catalá, Empar	1	23.	Palacios Ramos, Elsa	1
6.	De Toffol, Federica	1	24.	Peset Mancebo, Fernanda	1
7.	di Girolamo, Maurizio	1	25.	Pigott, Ian M	1
8.	di Girolamo, Maurizio	1	26.	Ridi, Riccardo	1
9.	Fernández de Zamora, Rosa María	1	27.	Sahmanovic, Sadzida	1
10.	Fortuzzi, Cinzia	1	28.	Salavert i Pitarch, Pepa	1
11.	Garnería, José	1	29.	Secchi, Carla	1
12.	Ghersetti, Francesca	1	30.	Seguí i Francés, Romà	1
13.	Granata, Giovanna	1	31.	Simonato, Edith	1
14.	Lugo Hubp, Margarita	1	32.	Tajoli, Zeno	1
15.	Martínez Usero, José Ángel	1	33.	Tosetti Grandi, Paola	1
16.	Martínez, Dídac	1	34.	Trolese, Francesco G B	1
17.	MEI, Editorial board	1	35.	Veracruz Álvarez, Alicia	1
18.	Minuzzi, Sabrina	1	36.	Vila, Francesc F	1
Total					**36**

8.4.5 Domain E: Publishing and legal issues

8.4.5.1 Growth of E-Print deposits

The 57 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.28)

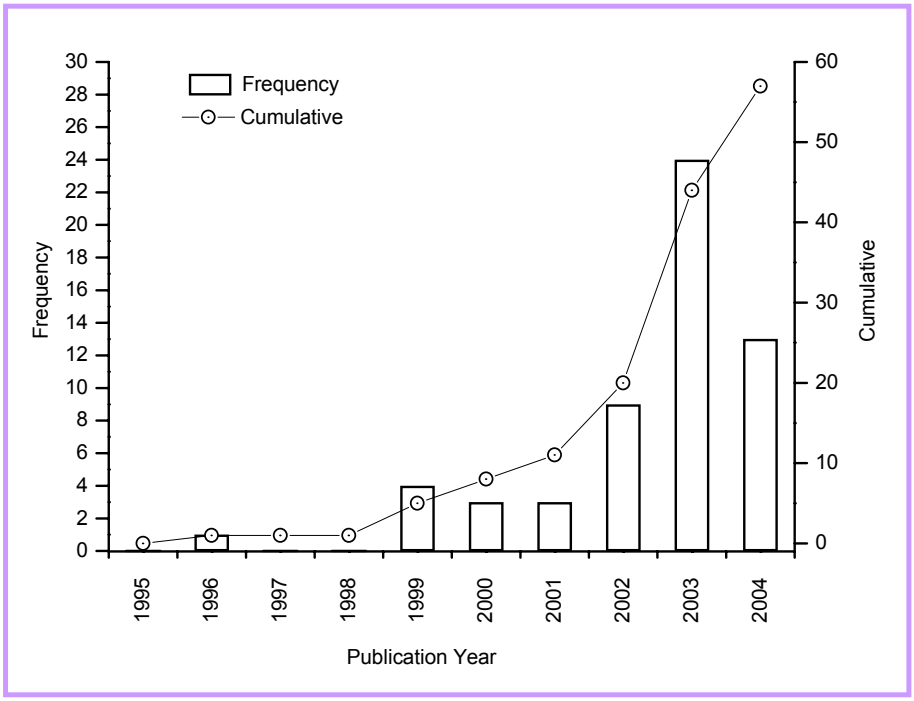

Fig. 8.28: Frequency of live-deposits eprints in single domain (E: Publishing and legal issues) at site eprints.rclis.org of 57 E-Prints downloaded on and up to 07-07-2004

8.4.5.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain E: Publishing and legal issues 57 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 155 keyword/keyphrase (Table 8.25). Top ranking keyword/keyphrase were: Copyright, diritto d'autore, Open access, Self-Archiving and comunicazione scientifica (Figure 8.29).

Table. 8.25: Keywords/Keyphrases occurrence in the metadata of 57 E-Prints of single domain specifications (E: Publishing and legal issues) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	copyright	21
2.	Open archives	16
3.	diritto d'autore	11
4.	Open access	10
5.	Self-Archiving	9
6.	comunicazione scientifica	8
7.	auto-archiviazione	7
8.	Intellectual property	7
9.	OAI	6
10.	repositories	6
11.	Romeo Project	6
12.	Open Archive Initiative	5
13.	scholarship communication	5
14.	archivi disciplinari	5
15.	archivi istituzionali	5
16.	auto-deposito	5
17.	depositi	5
18.	publishers	5
19.	self-publishing	5
20.	propiedad intelectual	4
21.	Digital libraries	3
22.	legislación	3
23.	legislation	3
24.	direttiva europea	3
25.	CERN	2
26.	workshop	2
27.	reference linking	2
28.	electronic journals	2
29.	informacion	2
30.	scholarly communication	2
31.	services linking	2
32.	eprints	2
33.	Technologies	2
34.	rights of author	2
35.	author's rights	2
36.	E-LIS	2
37.	e-publishing	2
38.	information infrastructure	2
39.	Peer review	2
40.	AEPIC	2
41.	biblioteche biomediche	2
42.	biomedics libraries	2
43.	CALSI: contents and legal aspects in the society of the Information.	2
44.	censorship	2
45.	Derechos de autor	2
46.	excepciones	2
47.	GIDIF	2
48.	GII	2
49.	licences	2
50.	linking	2
51.	Open Access Benefits	2
52.	Open Access Challenges	2

Sl. No.	Keywords/Keyphrases	Frequency
53.	Open Access journals	2
54.	publishing	2
55.	refereeing	2
56.	right to access	2
57.	scientific and technical information	2
58.	STM publishing	2
59.	Sustainability Science	2
60.	Sustainable economic model	2

Ninty Six Keywords/Keyphrases with frequency One:

Internet; OAI repositories; peer review journals; electronic libraries; sociedad de la información; scholarly information; bases de dades.; catalogazione; society of information; archivi aperti; databases; Unión Europea; bibliotecas; journals; libraries; Catalogs; electronic publishing; European Union; information services; servicios de información; AUTHOR; Budapest Open Access Initiative.; Australia; authorship; Berlin Declaration; editoria elettronica; personal data; semantic web; terminology; UE; access barriers; access to digital information; advantages and disavantages; of open access; Agreement; Auditoria; autore; banche dati; BOAI; control; convenio de colaboración; convergencia jurisdiccional; copyleft; copyright elettronico; costi riviste scientifiche; database copyright; datos personales; decreto legislativo; deRChos de autor; digital environment; Digital Identifiers; diritti connessi; diritti d'autore e catalogo; diritto di accesso al'informazione; Easily Accessible Content; Easily Accessible Content and Linking; EBLIDA; e-book; editori; editoria; effects of big deals; entorno digital; e-prints in Library and Information Science; european directive; industria farmaceutica; ipod; journal publishing; juridical protection of databases; knowledge dissemination; law convergence; lettori; multimedialità; Open acces archives; open access economic models; Open Peer Review process; open source; Open-access; permission barriers; permission crisis; price barriers; pricing crisis; pubblicazione elttronica; Redistribution; re-use; rights.; scheme; Securing reliable linking; Society publishers; sui generis right; terminología; Tipping point; universal access; university press; unlimited access; utenti; and web semántica.

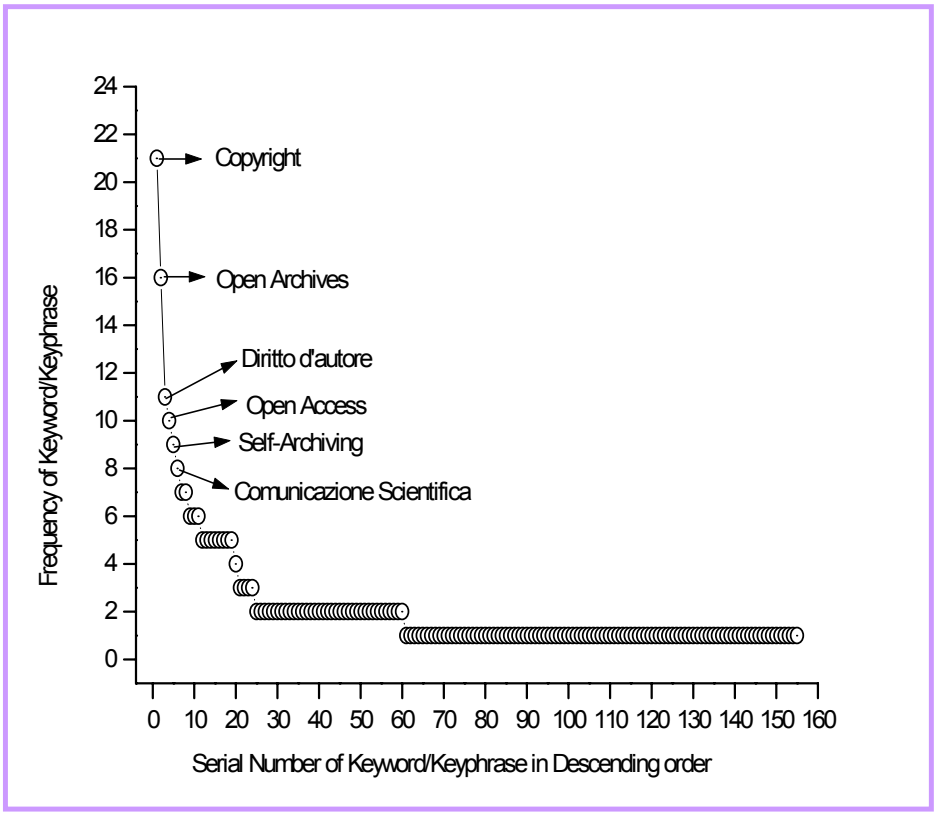

Fig. 8.29: Keywords/Keyphrases occurrence in the metadata of single domain (E: Publishing and legal issues) at site eprints.rclis.org having 57 E-Prints downloaded on and up to 07-07-2004

Table 8.26: Identification of authors in the Domain E: Publishing and legal issues as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	De Robbio, Antonella	13	22.	Gargiulo, Paola	1
2.	Oppenheim, Charles	7	23.	Ingoldsby, Tim	1
3.	Gadd, Elizabeth	6	24.	Leoni, Gilda	1
4.	Probets, Steve	6	25.	Lloret Romero, Núria	1
5.	Hodgkin, Adam	2	26.	Look, Hugh	1
6.	Mornati, Susanna	2	27.	López Alonso, MiguelÁngel	1
7.	Pelizzari, Eugenio	2	28.	Mackenzie Owen, John	1
8.	Prosser, David	2	29.	Maffei, Lucia	1
9.	Asschenfeldt, Christiane	1	30.	Marini Clarelli, Maria Vittoria	1
10.	Bardi, Luca	1	31.	Miranda, Giovanna	1
11.	Bernal, Rafael	1	32.	Peset Mancebo, Fernanda	1
12.	Burioni, Luca	1	33.	Powell, Andrea	1
13.	Carter, Michael	1	34.	Riera Barsallo, Patricia	1
14.	Comba, Valentina	1	35.	Santoro, Michele	1
15.	Delle Donne, Roberto	1	36.	Spigler, Renato	1
16.	Documentation Associations, EBLIDA	1	37.	Suber, Peter	1
17.	Domingo Ripalda, Javier	1	38.	Subirats Coll, Imma	1
18.	European Bureau of Library, Information	1	39.	Tajoli, Zeno	1
19.	Fantoni, Antonio	1	40.	Terranova, Giovanna	1
20.	Friend, Frederick J	1	41.	Velterop, Jan	1
21.	Furneaux, Mark	1	42.	Zapatero Lourinho, Angélica Sara	1
Total					**74**

8.4.6 Domain F: Management

8.4.6.1 Growth of E-Print deposits

The 13 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.30)

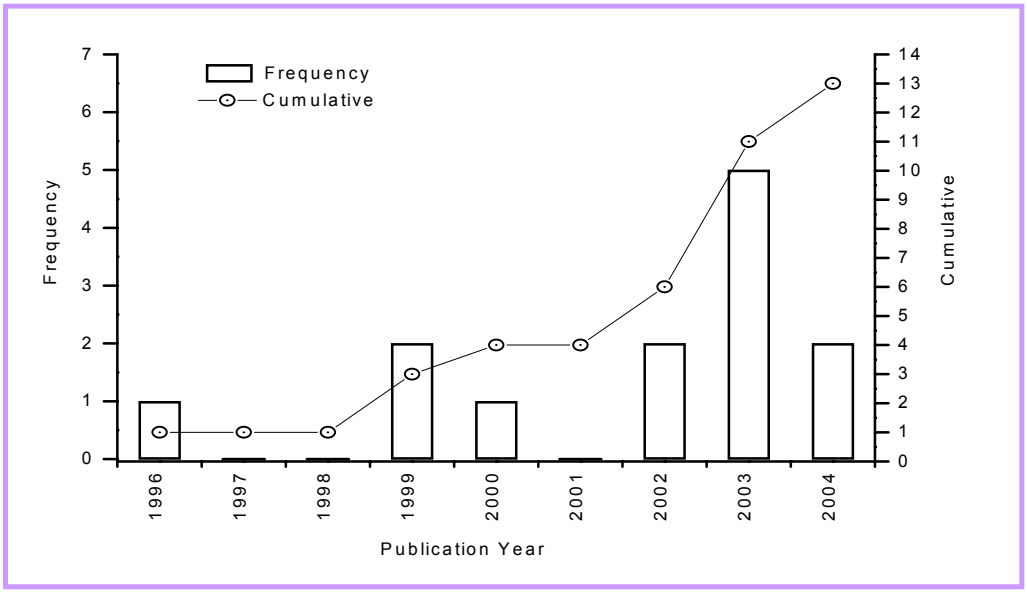

Fig. 8.30: Frequency of eprints in the live archives in single domain (F: Management) at site eprints.rclis.org having 13 E-Prints downloaded on and up to 07-07-2004

8.4.6.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain F: Management 13 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 90 keyword/keyphrase (Table 8.27). Top ranking keyword/keyphrase were: models de documents, creació de documents electronics, documents electronics, electronic Records, electronic Records management, Records creation, templates, managament, and gestión (Figure 8.31).

Table. 8.27: Keywords/Keyphrases occurrence in the metadata of 13 E-Prints of single domain specifications (F: Management) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1	models de documents	6
2	creació de documents electrònics	3
3	documents electrònics	3
4	electronic Records	3
5	electronic Records management	3
6	Records creation	3
7	templates	3
8	managament	3
9	gestión	3
10	Bibliotecas universitarias	2
11	companies	2
12	empresas	2
13	conservació	2
14	content management	2
15	University Libraries	2
16	affiliation	2
17	brokers	2
18	Catalonia	2
19	ebusiness	2
20	e-markets	2
21	Model EFQM	2
22	Procesos	2
23	SCM	2
Sixty Seven Keywords/Keyphrases with frequency One:		
Open Archive Initiative; OAI; Digital libraries; CERN; workshop; Internet; OAI repositories; peer review journals; electronic libraries; digital library; biblioteca digital; Archives; Unión Europea; users; XML; conservations; usuarios; archivos; Avances tecnológicos; Calidad; conservation; DLM Forum; Europe Union.; Evaluación; gestión de información; Quality; comercio electrónico; contents; electronic commerce; gestión actual de la información; gestión del conocimiento; present management of the information; Technological advances; aggregation; agregación; biblioteca tradicional; biblioteca virtual; Clasificaciones de los indicadores para bibliotecas; Classifications of the indicators for libraries; Cocoon; contenidos; Evaluación de los servicios bibliotecarios universitarios; Evaluation; Evaluation of the librarians university services; Extremadura; gestione di materiali non bibliografici; management of the information; management of the knowledge.; Non-book material; object-oriented programming; Perl; PHP; planes estratégicos; plantilles.; plataforma tecnologica; programación orientada a objetos; protocol of evaluation of model EFQM; protocolo de evaluación del modelo EFQM; Sindicación; strategic plans; Syndication; traditional library; Universidad de Salamanca; Universidad Politècnica de Catalunya; University of Salamanca; virtual library; and XSLT.		

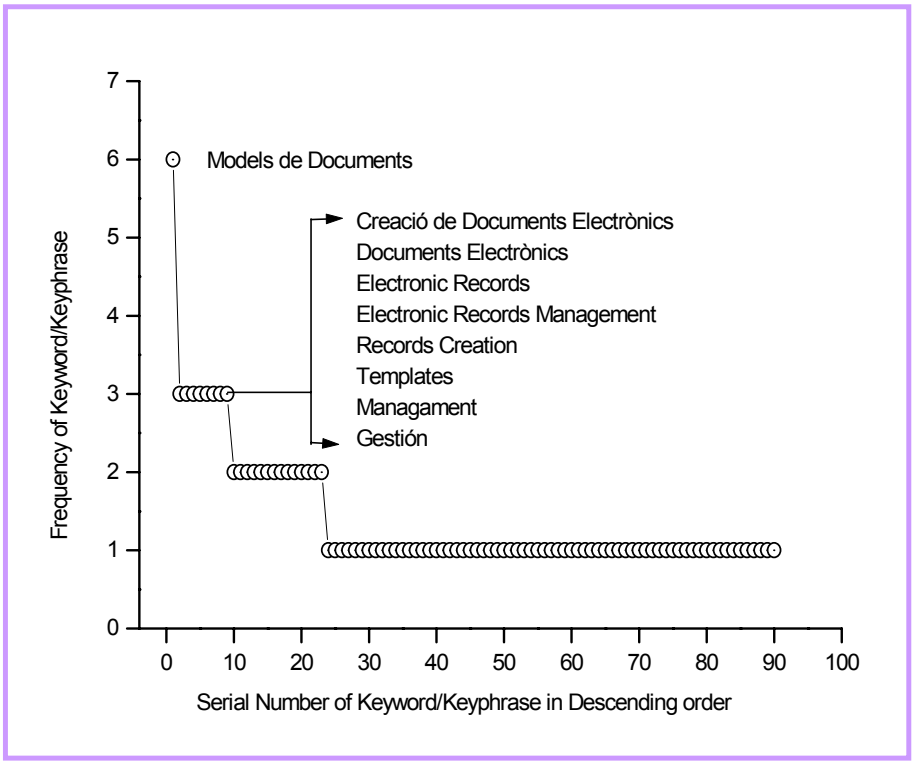

Fig. 8.31: Keywords/Keyphrases occurrence in the metadata of single domain (F: Management) at site eprints.rclis.org having 13 E-Prints downloaded on and up to 07-07-2004

Table 8.28: Identification of authors in the Domain F: Management as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Campos, Isabel	2	11.	Echeverría Cubillas, Mª José	1
2.	Canela, Montserrat	2	12.	Fernández Falero, M R	1
3.	Domingo, Joan	2	13.	García Testal, Cristina	1
4.	Serra, Jordi	2	14.	López, Pedro	1
5.	Alonso Arévalo, Julio	1	15.	Martín Cerro, Sonia	1
6.	Alonso Arévalo, Julio	1	16.	Martinez Suárez, Carlos	1
7.	Badoer, Remo	1	17.	Peral Pacheco, D	1
8.	Belda, Rafael	1	18.	Ribelles, Fernando	1
9	Brinati, Rossana	1	19.	Santiago, Fidel	1
10.	Crow, Raym	1	20.	Serra Serra, Jordi	1
Total					**24**

8.4.7 Domain G: Industry, profession and education

8.4.7.1 Growth of E-Print deposits

The 36 eprints in the live archives deposits had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.32)

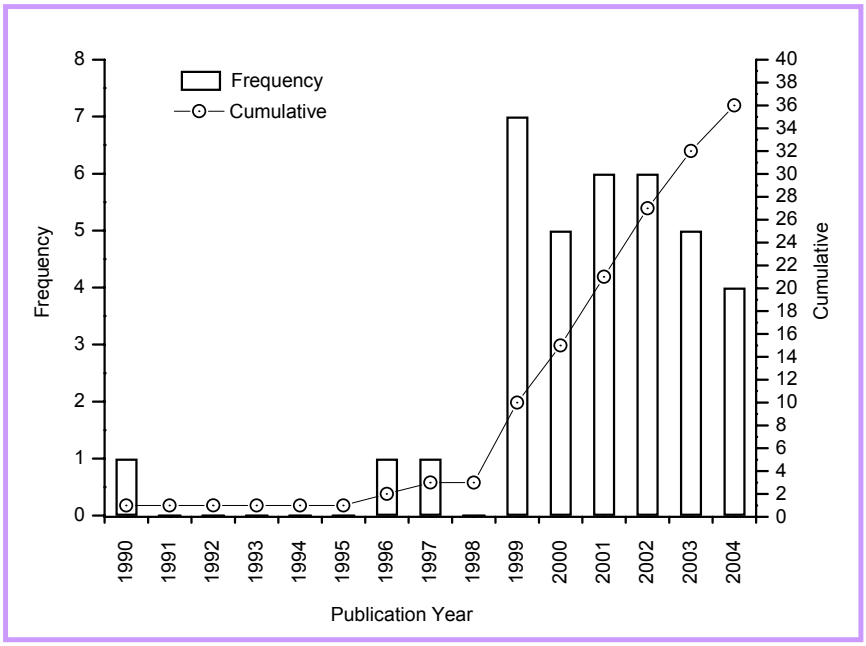

Fig. 8.32: Frequency of eprints in the live archives in single domain (G: Industry, profession and education) at site eprints.rclis.org having 36 E-Prints downloaded on and up to 07-07-2004

8.4.7.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain G: Industry, profession and education had 36 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 167 keyword/keyphrase (Table 8.29). Top ranking keyword/keyphrase were: models de documents, journals, Internet, Archives, companies, empresas, distribution lists, listas de distribución, magazines, profesionals en información electrónica, professionals of electronic information, revistas, congresos, and Congresses (Figure 8.33).

Table. 8.29: Keywords/Keyphrases occurrence in the metadata of 36 E-Prints of single domain specifications (G: Industry, profession and education) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	models de documents	4
2.	journals	4
3.	Internet	3
4.	Archives	3
5.	companies	3
6.	empresas	3
7.	distribution lists	3
8.	listas de distribución	3
9.	magazines	3
10.	profesionals en información electrónica	3
11.	professionals of electronic information	3
12.	revistas	3
13.	congresos	3
14.	Congresses	3
15.	Open Archive Initiative	2
16.	OAI	2
17.	Digital libraries	2
18.	CERN	2
19.	workshop	2
20.	peer review journals	2
21.	electronic libraries	2
22.	sociedad de la información	2
23.	bases de dades.	2
24.	society of information	2
25.	Unión Europea	2
26.	Description of archives	2
27.	España	2
28.	Spain	2
29.	creació de documents electrònics	2
30.	documents electrònics	2
31.	electronic Records	2
32.	electronic Records management	2
33.	Records creation	2
34.	templates	2
35.	conservació	2
36.	conservations	2
37.	DLM Forum	2
38.	Europe Union.	2
39.	information professionals	2
40.	archivist	2
41.	archivists	2
42.	librarians	2
One Hundred Twenty Five Keywords/Keyphrases with frequency One:		
OAI repositories; Information Society; databases; portal; e-learning; information services; Library and Information Science; servicios de información; archivistic sources; archivos; Automatitation of archives; conocimiento; fuentes archivísticas; IFLA; Venezia; virtual communities; contents; documentary management; gestión documental; knowledge; México; Statistics; albo professionale; Antioquia.; apprenticeship of librarians; archival profession; archivista; Archivística; archivos universitarios; Argentina; Asociaciones; associations; Bibliotecario; bibliotecarios; Biblioteconomía; biomedical librarians; Business documentalists in Spain; business knowledge management; Certification in the archival field; certification of information professionals; certifications of informatics competencies; chirone; Colombia; Computer skills certifications; comunidad en línea; Comunidad virtual; Conference Electronic resources; Congress; contenidos digitales;		

continuing education; Costa Rica; DECIDoc; DECIDoc '99; design; Develop European Competencies in Information and Documentation; Développer les EuroCompétences en Information et Documentation; digital community in line; distance learning; Documentación; documentalist training; documentalists; ECDL; ECIA; electronic age; Empleo; Employment; Enseñanza bibliotecológica en México; ensenyament bibliotecari; escoles de biblioteconomia; Escuelas de bibliotecología; Estudiantes de ciencias de la información; EUCIP; European Certification of Informatics Professionals; European Council of Information Associations; european information and documentation professionals; Euroréférentiel I&D; FAD; formazione a distanza; gestión de recursos electrónicos; History of printig industry; I&D professions; ICT european certifications; Information and Communication Technologies certifications; Information and documentation professionals; information archtecture; information science professional; Information Science students; investigació en ciències de la informació; Investigación Bibliotecológica y de la Información; Italian biomedical libraries; knjižnicni kolokviji; librarian; librarianshi literature; librarianship and information science investigation; librarianship degree; librarianship education in Mexico; librariashpip faculties; Library profession in Italy; Literatura bibliotecológica; llicenciatura en biblioteconomia y documentación; management of electronic resources .; managers; Medical librarianship in Italy; Mercado de trabajo; opensource; Postgrado en Bibliotecología; postgrau en biblioteconomia; profession; professional de la información; Professional training for librarians; professionality; Publicaciones periódicas y seriadas; publicaions periòdiques i seriades; regulation of intellectual professions; schedules about documentalists; South America; spanish universities; stalno strucno usavršavanje library colloquium; Sud Amèrica; Sur America; training; trajna izobrazba; Universidades españolas; university/faculty archives; and work market.

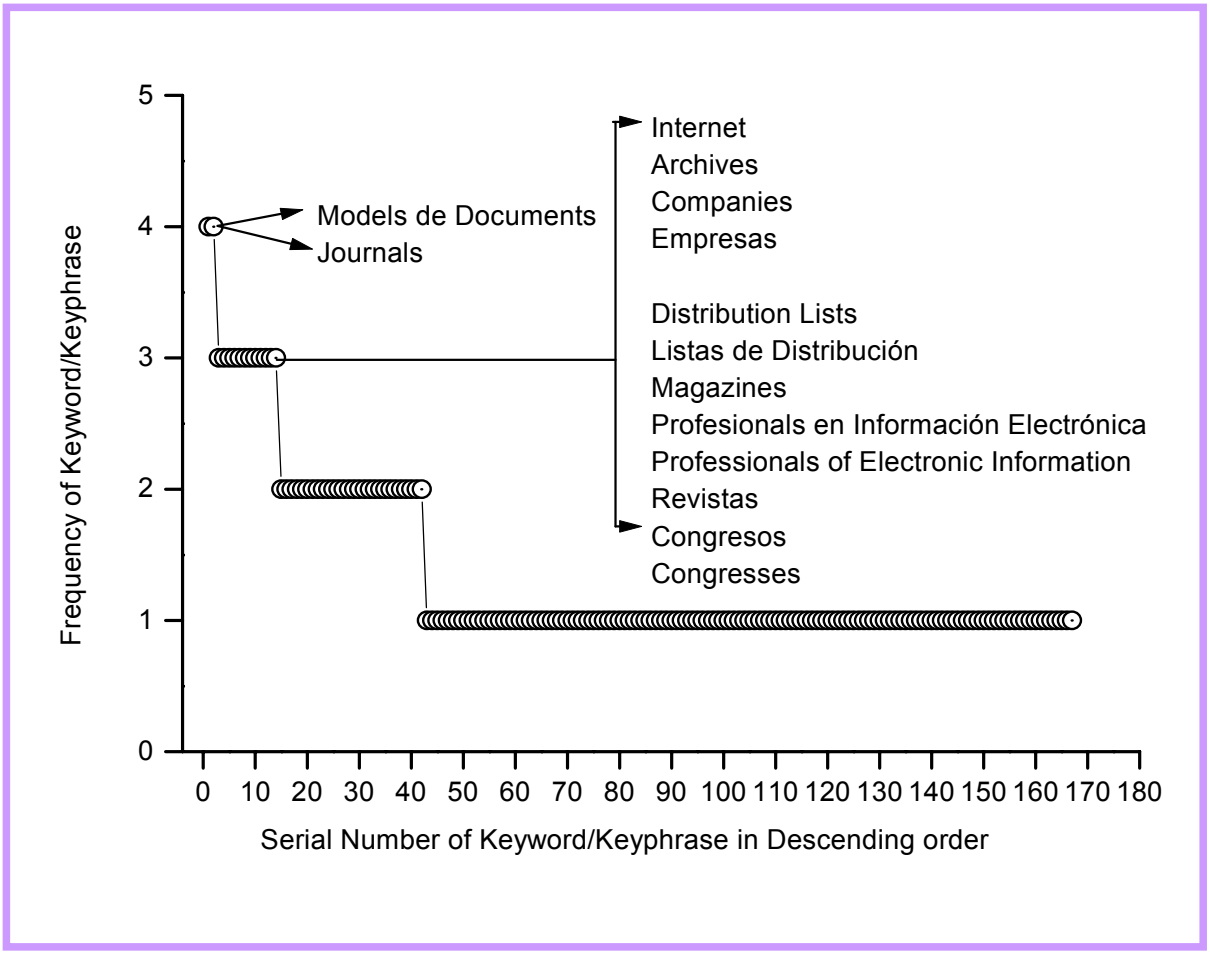

Fig. 8.33: Keywords/Keyphrases occurrence in the metadata of single domain (G: Industry, profession and education) at site eprints.rclis.org having 36 E-Prints downloaded on and up to 07-07-2004

Table 8.30: Identification of authors in the Domain G: Industry, profession and education as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Carosella, Maria Pia	4	20.	Lloret Romero, Núria	1
2.	Serra Serra, Jordi	2	21.	López Rodríguez, Carlos	1
3.	Author Unspecified	1	22.	Manfredi, Paolo	1
4.	Alonso Arévalo, Julio	1	23.	MEI, Editorial Board	1
5.	Bassi, Maria Cristina	1	24.	Melinšcak Zlodi, Iva	1
6.	Belton, Benjamin K	1	25.	Merlo Vega, José Antonio	1
7.	Callegari, Marco	1	26.	Mihalic, Mirjana	1
8.	Dekeyser, Raf	1	27.	Miñarro, Lola	1
9.	Dewey, Melvin	1	28.	Muñoz Feliu, Miguel C	1
10.	Eduarte Salazar, José Pablo	1	29.	Nardi, Lucia	1
11.	Feliu, Víctor	1	30.	Ontalba y Ruipérez, José Antonio	1
12.	Ferrer Sapena, Antonia	1	31.	Peset Mancebo, Fernanda	1
13.	García Testal, Cristina	1	32.	Poggiali, Igino	1
14.	Hollier, Anita	1	33.	Ramírez Leyva, Elsa M	1
15.	Hunter, Philip	1	34.	Ridi, Riccardo	1
16.	Kaljanac, Maja	1	35.	Schgör, Paolo	1
17.	Lázaro, Fernando	1	36.	Sorli Rojo, Ángela	1
18.	Llansó Sanjuán, Joaquim	1	37.	Vázquez Vázquez, Marta	1
19.	Lloret Romero, Núria	1	**Total**		**41**

8.4.8 Domain H: Information sources, supports, channels

8.4.8.1 Growth of E-Print deposits

The 113 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.34)

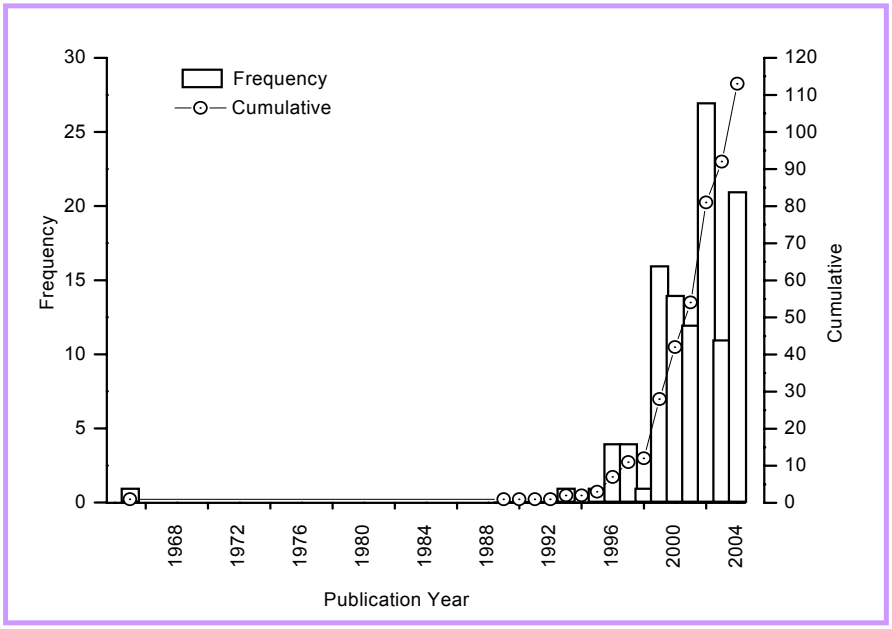

Fig. 8.34: Frequency of eprints in the live archives in single domain (H: Information sources, supports, channels) at site eprints.rclis.org having 113 E-Prints downloaded on and up to 07-07-2004

8.4.8.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain H: Information sources, supports, channels had 113 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 338 keyword/keyphrase (Table 8.34). Top ranking keyword/keyphrase were: OAI, Digital libraries, workshop, Open Archive Initiative, CERN, Open archives, peer review journals, and electronic libraries (Figure 8.35).

Table. 8.34: Keywords/Keyphrases occurrence in the metadata of 113 E-Prints of single domain specifications (H: Information sources, supports, channels) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	OAI	27
2.	Digital libraries	21
3.	workshop	20
4.	Open Archive Initiative	19
5.	CERN	19
6.	Open archives	14
7.	peer review journals	14
8.	electronic libraries	14
9.	OAI repositories	13
10.	E-journals	10
11.	Internet	8
12.	archivi aperti	7
13.	comunicazione scientifica	6
14.	Open access	5
15.	auto-archiviazione	5
16.	scholarly information	5
17.	scholarly communication	5
18.	databases	5
19.	service providers	5
20.	portal	5
21.	periodici elettronici	5
22.	digital library	4
23.	Self-Archiving	4
24.	OPAC	4
25.	eprints	4
26.	MEDLINE	4
27.	OAI-PMH services.	4
28.	repository	4
29.	biblioteca digital	3
30.	repositories	3
31.	women	3
32.	electronic journals	3
33.	Mujeres	3
34.	data providers	3
35.	dictionaries	3
36.	acceso a la información	3
37.	depositi istituzionali	3
38.	periodico elettronico	3
39.	spanish language	3
40.	sumarios	3
41.	metadata	2
42.	bases de dades.	2
43.	Music	2

44.	new technologies	2
45.	bibliotecas	2
46.	cataloghi	2
47.	information science	2
48.	libraries	2
49.	Spain	2
50.	electronic publishing	2
51.	noves tecnologies	2
52.	Catalan	2
53.	Documentación ambiental	2
54.	environmental documentation	2
55.	Softcatala	2
56.	access	2
57.	biblioteche digitali	2
58.	collaboration	2
59.	database	2
60.	e-mail	2
61.	access to the information	2
62.	accessibilità	2
63.	banche dati biomediche	2
64.	biomedical database	2
65.	Collaboration Coefficient	2
66.	communication system	2
67.	Diccionarios	2
68.	EMBASE	2
69.	free access	2
70.	lengua española	2
71.	MathSciNet	2
72.	Medicine	2
73.	Norm ISO 11620	2
74.	Online Information 2000	2
75.	PubMed	2

Two Hundred Sixty Three Keywords/Keyphrases with frequency One:

Scientometrics; copyright; Archives; informacion; metadata.; Intellectual property; Description of archives; España; journals; users; bibliography; propiedad intelectual; scholarship communication; bibliografia; bibliographical selection; electronic resources; research in computing and information science; selección bibliográfica; archivos abiertos; bibliotecas digitales; català; ciencias de la información; e-learning; information services; managament; servicios de información; acceso abierto; archivistic sources; ciencias de la documentación; diccionaris; digitization; E-LIS; Evaluación; fuentes archivísticas; history of science; information professionals; information retrieval; institutional reporitory; investigación en informática y ciencias de la información; llengua catalana; Peer review; preservation; Red de bibliotecas; virtual communities; access to information; accesso; archivos históricos; ArXiv; Australia; Berlin Declaration; Bibliotecas digitales de textos completos; catalogues; communication; comunicación; Comunicación científica; Comunidades virtuales; Economics; e-government; Espanya; Evaluation.; Full text digital libraries; Gestión de Contenidos; gray literature; Historical archives; hybrid libraries; information sources; Informetrics; JSTOR; letteratura grigia; Linguistica; linguistics; Periodismo; Publicación científica; recursos de información; Redes interuniversitarias; Scientific communication; scientific publication; Telematica; telematics; UNIMARC; AACR2; accés gratuït; access to medical database; accesso gratuito; Added Value Services; AIB-WEB; Anglo-American Cataloguing Rules; Antoni Maria Alcover; astronomical literature; Astrophysics Data System; Azadirachta indica A. Juss.; base de datos; Bases de dades; Bases de dades legislatives; bibliographic database; Biblioteca Médica Virtual; bookstores; Castilian language; cataloghi on-line; Catalogue of periodicals of interest to Italianists held in Universities in the British Isles; CERN Courier; changes; citation indexes; comparation between biomedical database; Computer Supported Cooperative Work; Comunicazione scientifica e mezzo digitale; conferencias privadas; Congresos Virtuales;

Continue..

consorzi; Contents Management; copertura periodici; Copyright contro Copyleft; Costo periodici elettronici; CSCW; current contents; Databases of legislation; Diccionario de la Lengua Española de la Real Academia Española (DRAE); Diccionario de uso del español de María Moliner; Diccionarios ideológicos; Digital Mathematical Library; digitalizzazione; Diritto d'Autore e legislazione; DML; Documenta Matematica; Documentació periodística; Documentary Products; documentation about childhood and adolescence; Documentation and archaelogy; DoIS; economía; electonic publishing; electronic information; Electronic information in Italy; Electronic Journalism.; electronic publications; EMIS 2001; emisiones en Internet; enciclopèdies; encyclopedia; Encyclopedia of Astronomy and Astrophysics; ERL; excavation documentation; excavation journal; feminist movement; Gestión de calidad; gruppi di lavoro virtuali; iconographic documents; ideological dictionaries; ILS; indexing and abstracting; Indicadores; Indicators; indice citazionale; Information networking; information resources; information.; Informative Products; integrated library systems; interfacce personalizzate; interfacce utente; Internet Grateful Med; Internet Portals; Internet resources; Internet.; interuniversity networks; Italian periodicals; journalistic documentation; legislative documents; lengua castellana; lettaratura astronomica; library consortia; library management systems; Librerías; LMS; local networks; long-term archiving.; Management of quality; matematica; MATH; Mathematical Reviews; mathematics; mathematics.; MathSci; MathSci Disc; Max Planck Society.; Medical Virtual Library; Medical Web Resources; MEDLARS; movimiento feminista; MyLibrary; National Library of Medicine; Neem Research; network of libraries; network resources; New York; NLM; non-print materials; non-textual documents; OAI services.; OAI-PMH services; online bibliographic resources; on-line union catalogues; OVID; Pascal; pascal biomed; periodical; periodici; periodici italiani; physics.; planimetries; Portales de Internet; portalizzazione; Portals of norms and laws; preprints; print journals; private conferences; Productos documentales; Productos Informativos; Recursos de Internet; recursos informativos; Recursos Web Médicos; redes telemáticas; refereed journals; registry of particular finds; Regole di catalogazione anglo-americane; repertori di OPAC; risorse bibliografiche online; risorse elettroniche remote; RIX; Scholarship; self-documentation; Servicios de Valor Añadido; servicios telemáticos; sholarship comunication; sistemi di automazione bibliotecari; sistemi gestionali per biblioteche; Sistemi per il database networking; social informatics; Sound documents; stratigraphic diagram; stratigraphic sequence; stratigraphic unities; stratigraphy; submission; surveys and photos registries; Tatoo; Tecnoneet; telematic networks; telematic services.; thesaurus MeSH; UKMARC; Ultranet; United States of America; US records; US registry; use of information sources; uso de fuentes de información; virtual congress.; virtual reference desk; WAI; web; weblogs.; and xarxes locals.

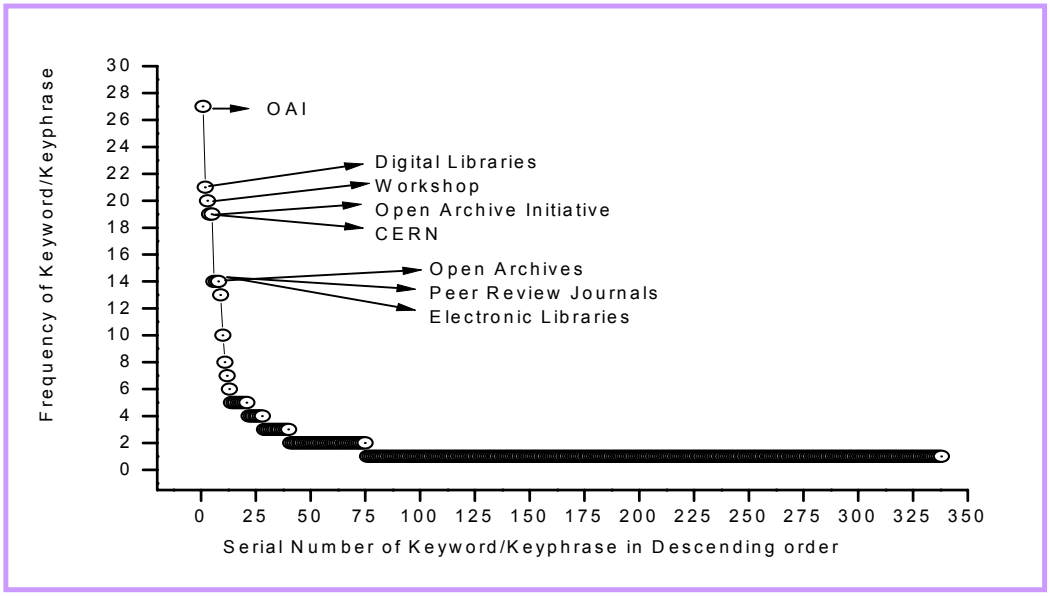

Fig. 8.35: Keywords/Keyphrases occurrence in the metadata of single domain
(H: Information sources, supports, channels) at site eprints.rclis.org
having 113 E-Prints downloaded on and up to 07-07-2004

Table 8.35: Identification of authors in the Domain H: Information sources, supports, channels as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	De Robbio, Antonella	23	58.	Korac, Ana	1
2.	Mornati, Susanna	5	59.	KrasicMarjanovic, Olga	1
3.	Barrueco Cruz, Jose Manuel	3	60.	Krot, Michael	1
4.	Carosella, Maria Pia	3	61.	Kurtz, Michael J	1
5.	Krichel, Thomas	3	62.	Lagoze, Carl	1
6.	Hubbard, Bill	2	63.	Latorre Zacarés, Nacho	1
7.	Krichel, Thomas	2	64.	Laullon, Txema	1
8.	Maffei, Lucia	2	65.	Le Meur, JeanYves	1
9.	Warner, Simeon	2	66.	Lledó Silla, Mario	1
10.	Abad García, MF	1	67.	Llinares, Joan A	1
11.	Accomazzi, Alberto	1	68.	Lopez Carreño, Rosana	1
12.	Adell Segura, Jordi	1	69.	López Rodríguez, Carlos	1
13.	Agustí, Lluís	1	70.	López, Ferran	1
14.	Alonso Arévalo, Julio	1	71.	MaciasVirgos, Enrique	1
15.	Alonso, Julio	1	72.	Mackie, Morag	1
16.	Amat, C B	1	73.	Malgosa Sanahuja, Josemaría	1
17.	Armengol Noguera, V	1	74.	Manfroid, Jean	1
18.	Awre, Chris	1	75.	Mangano, Michelangelo	1
19.	Badoer, Remo	1	76.	Marra, Monica	1
20.	Bayo Calduch, P	1	77.	Martellini, Enrico	1
21.	Begenišic, Dobrila	1	78.	Martín Cerro, Sonia	1
22.	Beier, Gerhard	1	79.	Martinez Catalán, C	1
23.	Bellver Torlà, Carles	1	80.	Martinez Mendez, Francisco Javier	1
24.	Boix, Montserrat	1	81.	McGlashan, David	1
25.	Bosc, Hélène	1	82.	Mediavilla, Marisa	1
26.	Braslavsky, Pavel I	1	83.	Murray, Stephen S	1
27.	Brody, Tim	1	84.	Nelson, Michael L	1
28.	Brunetti, Francesca	1	85.	Noverges Domenech, Natividad	1
29.	ButiganVucaj, Tamara	1	86.	Olivieri, Veliana	1
30.	Campón Gozalbo, J	1	87.	Ortega Cerezo, Eusebio	1
31.	Carr, L	1	88.	Panadès, Toni	1
32.	Castillo Blasco, L	1	89.	Pascual Olaguíbel, Marina	1
33.	Castriotta, Maria	1	90.	Peset Mancebo, Fernanda	1
34.	Cobb, Kenneth R	1	91.	Prosser, David	1
35.	Córdova Eguívar, Héctor	1	92.	Rehmann, Ulf	1
36.	Cueva, Alejandro de	1	93.	Reidy, Denis	1
37.	Dobratz, Susanne	1	94.	Ridi, Riccardo	1
38.	Domènech, David	1	95.	Robles, Lola	1
39.	Eichhorn, Guenther	1	96.	Sanchis Pérez, Elisa	1
40.	Erdelez, Sanda	1	97.	Sandfær, Mogens	1
41.	Escudero Sánchez, Manuel	1	98.	Schena, Antonella	1
42.	Fernández Cáceres, José Luis	1	99.	Schiavone, Luisa	1
43.	Fraser, Gordon	1	100.	Schmitt, JeanPhilippe	1
44.	García Testal, Cristina	1	101.	Seguí i Francés, Romà	1
45.	Giménez, Juan Vicente	1	102.	Smiljanic, Ilinka	1
46.	GoldschmidtClermont,	1	103.	Smith, MacKenzie	1

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
	Luisella				
47.	González Teruel, A	1	104.	Soler, Concha	1
48.	Goranovic, Milka	1	105.	Spigler, Renato	1
49.	Grant, Carolyn S	1	106.	Steele, Colin	1
50.	Hagedorn, Kat	1	107.	Subirats Coll, Imma	1
51.	Harnad, Stevan	1	108.	Van der Vaart, Lilian	1
52.	Janjetovic, Ljuba	1	109.	Vigen, Jens	1
53.	JHEP, Executive Office	1	110.	Virgili, Josep Maria	1
54.	Jørgensen, Lotte	1	111.	Voss, Rüdiger	1
55.	Jost, Michael	1	112.	Wegner, Bernd	1
56.	Kalyane, V L	1	113.	Wynne, Martin	1
57.	Karlsson, Sune	1	114.	Yakimischak, David	1
Total					**150**

8.4.9 Domain I: Information treatment for information services (Information functions and techniques)

8.4.9.1 Growth of E-Print deposits

The 101 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.36)

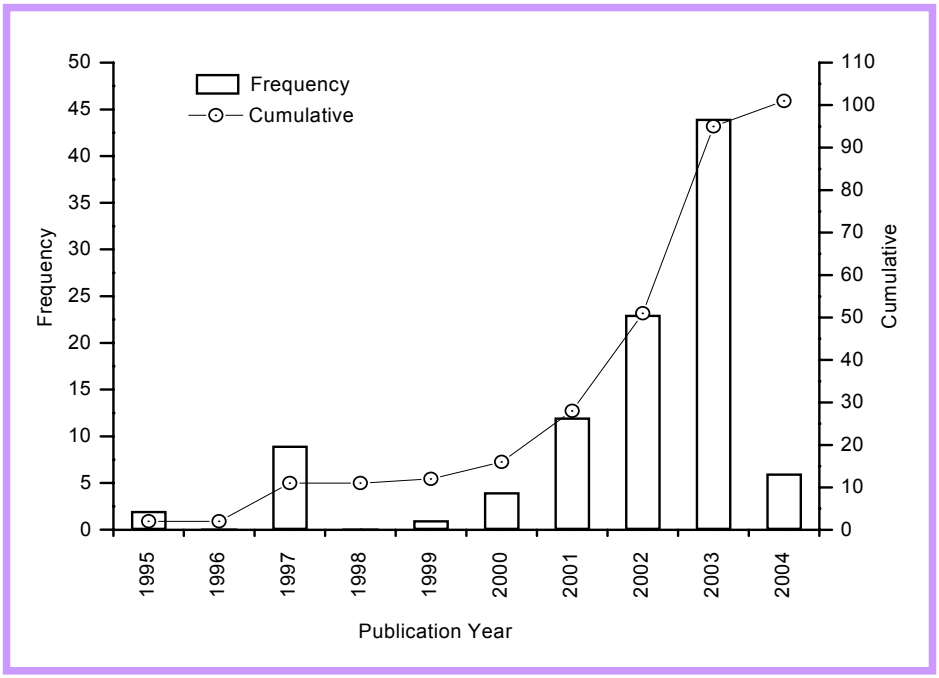

Fig. 8.36: Frequency of eprints in the live archives in single domain (I: Information treatment for information services (Information functions and techniques)) at site eprints.rclis.org having 101 E-Prints downloaded on and up to 07-07-2004

8.4.9.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain I: Information treatment for information services (Information functions and techniques) ad 101posits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 543 word/keyphrase (Table 8.36). Top ranking keyword/keyphrase were: Authority control, Authority files, archivi di autorità, controllo d'autorità, Record d'autorità, and authority Records (Figure 8.37).

Table. 8.36: Keywords/Keyphrases occurrence in the metadata of 101 E-Prints of single domain specifications (I: Information treatment for information services (Information functions and techniques) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	Authority control	24
2.	Authority files	21
3.	archivi di autorità	18
4.	controllo d'autorità	14
5.	Record d'autorità	11
6.	authority Records	10
7.	digital library	8
8.	biblioteca digital	8
9.	reference linking	8
10.	cataloguing	8
11.	cataloging	8
12.	metadata	7
13.	catalogazione	7
14.	FRBR	7
15.	GARR	7
16.	metadata.	6
17.	services linking	6
18.	openURL	6
19.	scientific classifications	6
20.	SFX	6
21.	OPAC	5
22.	SBN	5
23.	cataloghi	5
24.	search engines	5
25.	classificazioni matematiche	5
26.	MSC	5
27.	Open archives	4
28.	Open access	4
29.	Music	4
30.	Description of archives	4
31.	Catalogs	4
32.	RICA	4
33.	electronic resources	4
34.	research in computing and information science	4
35.	Servizio bibliotecario nazionale	4
36.	access point control	4
37.	classifications schemas	4
38.	classificazioni scientifiche	4
39.	controllo dei punti di accesso	4

Sl. No.	Keywords/Keyphrases	Frequency
40.	ISAAR(CPF)	4
41.	ISADN	4
42.	Mathematics Subject Classification	4
43.	MSC2000	4
44.	Regole italiane di catalogazione per autori	4
45.	Requisiti funzionali per Record bibliografici	4
46.	Internet	3
47.	information science	3
48.	editorials	3
49.	accés obert	3
50.	archivos abiertos	3
51.	arxius oberts	3
52.	LEAF	3
53.	Bibliografia Nazionale Italiana	3
54.	ciències de la documentació	3
55.	FRANAR	3
56.	Functional Requirements for Bibliographic Records	3
57.	Guidelines for authority and reference entries	3
58.	INDECS	3
59.	LCSH	3
60.	MACS	3
61.	MARC21	3
62.	Multilingual Acces to Subjects	3
63.	recerca en informàtica i ciències de la informació	3
64.	subject headings	3
65	UNIMARC/Authorities	3
66.	World Wide Web	3
67.	OAI	2
68.	Digital libraries	2
69.	E-journals	2
70.	women	2
71.	informacion	2
72.	España	2
73.	specialized libraries	2
74.	bibliography	2
75.	bibliografia	2
76.	bibliographical selection	2
77.	selección bibliográfica	2
78.	Tecnologías de la Información	2
79.	acceso abierto	2
80.	AUTHOR	2
81.	Automatitation of archives	2
82.	Avances tecnológicos	2
83.	ciencias de la documentación	2
84.	Dublin core	2
85.	EAD	2
86.	education	2
87.	investigación en informática y ciencias de la información	2
88.	thesauri	2
89	Valencian Community	2
90..	access points	2
91.	Bibliographic control	2
92	BNI	2
93.	BN-OPALE PLUS	2

Sl. No.	Keywords/Keyphrases	Frequency
94.	classification schemas	2
95.	directory	2
96.	EAC	2
97.	EDIT16	2
98	Encoded archival context	2
99.	Functional Requirements for Bibliographic Records Controllo d'autorità	2
100.	Guidelines for authority Records and references	2
101.	indexing	2
102.	indicizzazione	2
103.	International Standard Archival Authority Record For Corporate Bodies	2
104.	International Standard Authority Data Number	2
105.	Interoperability of Data in E-Commerce Systems	2
106.	intestazioni di soggetto	2
107.	ISAD (G)	2
108.	Italian National Bibliography	2
109.	Library of Congress Subject Headings	2
110.	linguaggi di indicizzazione	2
111.	Linking and Exploring Authority Files	2
112.	Manus	2
113.	manuscript cataloguing	2
114.	MSC Mathematics Subject Classification	2
115.	paradigm	2
116.	Persons and Families	2
117.	pseudonyms	2
118.	punti d'accesso	2
119.	RAMEAU	2
120.	Televisión Murciana	2
121.	VIAF	2

Four Hundred Twenty Two Keywords/Keyphrases with frequency One:

Open Archive Initiative; copyright; comunicazione scientifica; Archives; bases de dades.; electronic journals; Mujeres; scholarly communication; databases; bibliotecas; libraries; Spain; electronic publishing; propiedad intelectual; Bibliotecas especializadas; access; bibliotecas digitales; Knowledge Management; archivistic sources; archivos; Calidad; conocimiento; conservation; database; digitization; editoriales; Evaluación; fuentes archivísticas; gestión de información; IFLA; information infrastructure; interoperability; network; preservation; protocols; Quality; Red de bibliotecas; virtual communities; accesso; ARCHIM; Bibliotecas digitales de textos completos; catalogues; Computer Science; comunicación; Comunicación científica; Comunidad Valenciana; Comunidades virtuales; Comunitat Valenciana; e-commerce; Evaluation.; Full text digital libraries; gestión actual de la información; gestión del conocimiento; gray literature; letteratura grigia; MetaOPAC; multimedia; personal data; present management of the information; Publicación científica; Red; Redes interuniversitarias; risorse elettroniche; Scientific communication; scientific publication; semantic web; Streaming; Technological advances; Telematica; telematics; UDC; UNIMARC; videoregistrazione; AAAF; academic metadata format; accesos de banda ancha; accesso per soggetto; ACDI; administratives archives; AFNOR; ALEPH500; AMF; análisis de citas; Ancient Italian states; Anglo-American Authority File; archival documents cataloging; archival records Soggetti produttori di documenti; archival theory; archivio d'autorità bavarese; Archivio di autorità dei nomi di Perugia e del suo territorio; archivos administrativos; Archivos municipales; ARricchimento Servizi Bibliografia Nazionale Italiana; ARSBNI; Association française de normalisation; Associazione dei bibliotecari ecclesiastici italiani; Associazione francese di normalizzazione; Audio-visual; Audio-visual Communication; audio-visual contents; authorities Controllo d'autorità; authorities Intestazioni di soggetto; authority control Autori latini del medioevo; authority control of printers; authority data; authority file nazionale; authority files of Medieval Latin literature; authority lists; authority metadata Archivi di autorità; authority records Archivio d'autorità di SBN; authority records Controllo d'autorità semantico; authority records Metadati per soggetto; authority work; authority work in Italy; automation;

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automazione; Autori cattolici e opere liturgiche in italiano; Azalai; Bavarian authority file; Bavarian union catalogue; Beautiful Arts; Bellas Artes; Beni culturali; BHA; Bibliografia di storia dell'arte; bibliographic standards; Bibliography of the history of art; Biblioteca di cultura medievale; biblioteca ibrida; Biblioteca virtuale; bibliotecas del futuro; Biblioteche; biblioteche di slavistica; Biblioteques especialitzades; Bibliotheca Scriptorum Latinorum Medii Recentiorisque Aevi; BISLAM; BN-OPALE; BN-Opaline/Estampes; Bolivia; broadband web connection; buscadores; Canadian International Development Agency.; catalogazione dei manoscritti; catalogazione del libro antico; catalogazione derivata; catalogazione di documenti d'archivio; catalogazione di manoscritti; catalogazione di risorse elettroniche; catalogazione di risorse Internet; catalogazione per autori e titoli; cataloging electronic resources; Catalogo; catalogo collettivo bavarese; catalographic standards; catalogues Controllo bibliografico; cataloguing languages; cataloguing of Internet resources; categorization tool; Catholic Authors and Liturgical Works; CECOSBI; Censimento nazionale delle edizioni italiane del XVI secolo; Central European Name Authority File Controllo d'autorità; Centro per il coordinamento dei servizi bibliografici italiani; CIMI; citation based funding scheme; citation business model; citation data; cluster heading; Codex; COFAR; Collectivités officielles françaises d'Ancien Régime; Collectivités Religieuses Controllo d'autorità; collettività religiose; collezioni bibliografiche di slavistica; commercio elettronico; Comunicación Audiovisual; Comunidad Valenciana (España); Conceptual Reference Model; Conference Authority control; conferenza di Crimea; conservación document management; consuetudini; contenidos audiovisuales; Contesto archivistico codificato; controlled vocabularies; controllo bibliografico; Controllo Bibliografico Universale; controllo di autorità; controllo di autorità di stampatori; Convegno internazionale sull'Authority Control; Cooperative Online Resource Catalog Controllo d'autorità; COoperative Research Cataloging; copy cataloguing; CORC; CORELI; creators of archives Controllo d'autorità; CRM; crosswalks; dati di Autorità per autori e per titoli uniformi; decreti; delle associazioni e degli enti locali italiani dal Medioevo alla fine del secolo XVIII; descrizione archivistica; devices; document importation; dones; Edición Electrónica; EDIFICARE; editori e librai; editori/tipografi; Educación musical; electronic journals management; Encoded Archival Description; enti collettivi; Esperienza Di Immediata Catalogazione con Fiduciaria Attivazione di un rapporto diretto con gli Editori; European Educational Network; faccette; Facet classification; Faceted Application of Subject Terminology; faceted classification; facets; Families; FAST; Fondazione Ezio Franceschini; Fondazione Franceschini; Fondo delle leggi degli antichi Stati italiani; French Official Corporate bodies of the Ancient Regime; Functional Requirements And Numbering of Authority Records; Functional requirements for bibliographic Records Nomi multipli; Gemeinsame Körperschaftsdatei; geological information; German authority files; Gestión de Documentos; GKD; Gli autori in Medioevo Latino; GSARE; Guidelines for subject authority and reference entries; headings; ICCP; identificatori bibliografici; ILIAC; image; imagen; IMCE; in Italian: an Authority List; Indexing Systems; indicizzazione per soggetto; información geológica; information transfer; Informative programmes; INTERMARC; International Archival Authority RCords (Corporate Bodies; International Conference Authority Control Archivi d'autorità; International Conference on Cataloguing Principles; International Meeting of Cataloguing Experts; International Standard Bibliographic Description for Electronic Resources; International Standard of Archival Description (General); INTERPARTY; InterParty project; intestazione a grappolo; intestazioni; ISAAR(CPF) Requisiti funzionali per record bibliografici; ISBD(ER); Italian Catholic Librarian Association ACOLIT; Italian manuscripts Controllo d'autorità; Italian Metadata Group; Italian national authority file; Joconde; LACoBiT; LAIT; language cross-linking; lavoro d'autorità; lavoro d'autorità in Italia; leggi; Legislación informacional; libraries of the future.; Library of Congress; Library of Congress Authorities; Library of Congress metadata; Libri antichi in Toscana; linguaggi catalografici; Lista integrata degli Autori Controllati delle Biblioteche in Toscana; liste di autorità; luoghi; MAI; MALVINE; manoscritti italiani; Manutenzione archivi semantici; MARC; marche tipografiche; MARS; Mass media; mathematical subject classification; Medieval Latin authors; medios de comunicación; metadata Archivi di autorità; Metadata Standards; metadati catalogazione; metadati d'autorità; METS; mitjans de comunicació; MLAR Controllo d'autorità; MOPARK; motores de búsqueda; motori di ricerca; Multiple names; Municipal archives; musical education; NACO; names of Perugia and its area Archivi di autorità; National Authority Co-operative project; national bibliographies BNI; Nomi di persona del medioevo; Nomi di persona dell'antichità; nomi religiosi; notes providing a summary; notes relating to the contents; OAIMH; old books' cataloguing; ONIX; online catalogs; ordini e privilegi dei comuni; PAN; Paris Principles; PCC; Personal Names of the Antiquity; Personal Names of the Middle Ages; Personennamendatei; Persons; places; PMA; PND; Polytechnical University of Valencia.; portale TEL; Principi di Parigi; principi di Toronto; printers; Program for Cooperative Cataloging; Programas informativos; Project National Park Digital Library; projects - NLS; protocol; publishers and booksellers; Raccolta di statuti; RAK Archivi d'autorità tedeschi; RCord d'autorità dei soggetti produttori di archivi; RDF; record creators; recuperación en el web; registrazioni archivistiche; registrazioni di autorità; religious corporate bodies; religious names; Répertoire d'autorité-matière encyclopédique et alphabétique unifié; reproducción del vídeo; Resource Organisation and Discovery in Subject-based services; retrospective conversion; right to cite; rinvii vedi e vedi anche; ROADS; RTEE;

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SACO; SBN Ancient Books Antichi Stati italiani; SBN authority file; SBN Libro antico; SBN-MARC; SBS; schede d'autorità; Schlagwortnormdatei; see and see also references Accesso multilingue ai soggetti; Semantic authority control; Servizio bibliotecario senese; Sistema Archivístico; Sistemas de Indización; slavistica; Società internazionale per lo studio del Medioevo latino; Soggettario per i cataloghi delle biblioteche italiane; SPIRES-HEP; streaming technology.; strumenti di classificazione; subject access; subject gateways; subject heading languages; subject indexing languages; Subject metadata; SWD; SWD/RSWK; Switching language; System of Archives; technological breakthroughs; Televisión; Teoría archivística; TERENA; tesauri; The European Library; titoli uniformi; Toronto Tenets; Trans-European Research and Education Networking Association; trattamento dell'informazione slava in Italia; UBC; uniform titles; UNIMARC/BNI; Universal Bibliographic Control; Universal Decimal Classification; Universidad de Murcia; Universidad Politécnica de Valencia; university networks; University of Florence libraries Biblioteche dell'Università di Firenze; University of Murcia; VHS; vídeo; video broadcasting; videos; Virtual International Authority File; vocabolari controllati; Web retrieval; web semantico; Webfarm; Working Group on Functional Requirements and Numbering of Authority Records; Working Group on Minimal Level Authority Records; XVI century Italian editions Controllo d'autorità; ZDB; and Zeitschriftendatenbank.

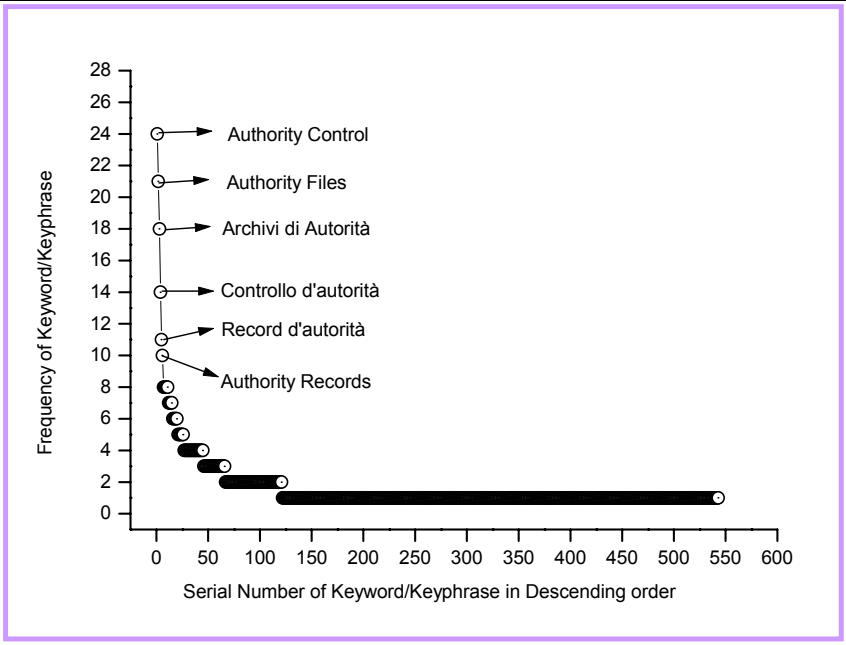

Fig. 8.37: Keywords/Keyphrases occurrence in the metadata of single domain
(I: Information treatment for information services (Information functions and techniques))
at site eprints.rclis.org having 101 E-Prints downloaded on and up to 07-07-2004

Table 8.37: Identification of authors in the Domain I: Information treatment for information services (Information functions and techniques) as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Barrueco Cruz, Jose Manuel	11	51.	Haya, Glenn	1
2.	De Robbio, Antonella	8	52.	Injac, Vesna	1
3.	Maguolo, Dario	7	53.	Jerdelet, Jocelyne	1
4.	Marini, Alberto	7	54.	Klink, Markus J R	1
5.	Subirats Coll, Imma	6	55.	Kosanovic, Biljana	1
6.	Van de Sompel, Herbert	5	56.	Krichel, Thomas	1
7.	Krichel, Thomas	4	57.	Latorre Zacarés, Nacho	1
8.	Hochstenbach, Patrick	3	58.	Leoncini, Claudia	1
9.	BeitArie, Oren	2	59.	Lucarelli, Anna	1
10.	Canet Centellas, Fernando	2	60.	MacEwan, Andrew	1
11.	De Robbio, Antonella	2	61.	Manjunath, G K	1

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
12	Fornas Carrasco, Ricardo	2	62.	Martinez Mendez, Francisco Javier	1
13	Fuertes Royo, Cristina	2	63.	Mazzitelli, Gabriele	1
14	Geretschläger, Ingrid	2	64.	Menna, Massimo	1
15	Lewandowski, Dirk	2	65.	Meßmer, Gabriele	1
16	Magliano, Cristina	2	66.	Mihailovic, Olivera	1
17	Warner, Simeon	2	67.	Montejo, Ángel	1
18	Adelantado Mateu, Eulalia	1	68.	Muñoz Feliu, Miguel C	1
19	Amat, C B	1	69.	Muñoz García, Adolfo	1
20	Argente i Jiménez, Montse	1	70.	Nicholson, Dennis	1
21	Badalamenti, Guido	1	71.	Noverges Domenech, Natividad	1
22	Baldacchini, Lorenzo	1	72.	O'Connell, Heath B	1
23	Benito Amat, Carlos	1	73.	Parmeggiani, Claudia	1
24	Boddaert, Nadine	1	74.	Patton, Glenn E	1
25	Boschini, Matteo	1	75.	Pavía Cogollos, José	1
26	Bourdon, Françoise	1	76.	Petrucciani, Alberto	1
27	Bucchioni, Cinzia	1	77.	Pignard, Nathalie	1
28	Buizza, Pino	1	78.	Pitti, Daniel V	1
29	Cabó i Cardona, Anna	1	79.	Plassard, MarieFrance	1
30	Cano Guarachi, Johnny	1	80.	Ponzani, Vittorio	1
31	Cerbai Ammannati, Gloria	1	81.	Pujar, S M	1
32	ClavelMerrin, Genevieve	1	82.	Quezada Cortéz, Guido	1
33	Colussi, Gianni	1	83.	Rossi, Paola	1
34	Cornella, Alfons	1	84.	Ruggeri, Fausto	1
35	Cristán, Ana L	1	85.	Sabini, Luciana	1
36	Crocetti, Luigi	1	86.	Sansò, Annarita	1
37	Crupi, Gianfranco	1	87.	Santoro, Michele	1
38	Cruz Mundet, José Ramón	1	88.	Sardo, Lucia	1
39	Dean, Rebecca J	1	89.	Schneider, Markus	1
40	Delle Monache, Sara	1	90.	Scholze, Frank	1
41	di Girolamo, Maurizio	1	91.	Scolari, Antonio	1
42	Donati, Maria Teresa	1	92.	Servello, Rosaria Maria	1
43	Gamberini, Roberto	1	93.	Tartaglia, Stefano	1
44	Garcia Rivas, Marta Isabel	1	94.	Thomas, Krichel	1
45	Gil Vicent, Vicent	1	95.	Tomassini, Marco	1
46	Giménez Tudurí, Carmen	1	96.	Vecchi Pomphile, Analía	1
47	Gnoli, Claudio	1	97.	Vigen, Jens	1
48	Gorman, Michael	1	98.	Vitali, Stefano	1
49	Guerrini, Mauro	1	99.	Weber, Jutta	1
50	Haldimann, Maywenn	1	**Total**		**151**

8.4.10 Domain J: Technical services libraries, archives and museums

8.4.10.1 Growth of E-Print deposits

The 25 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.38)

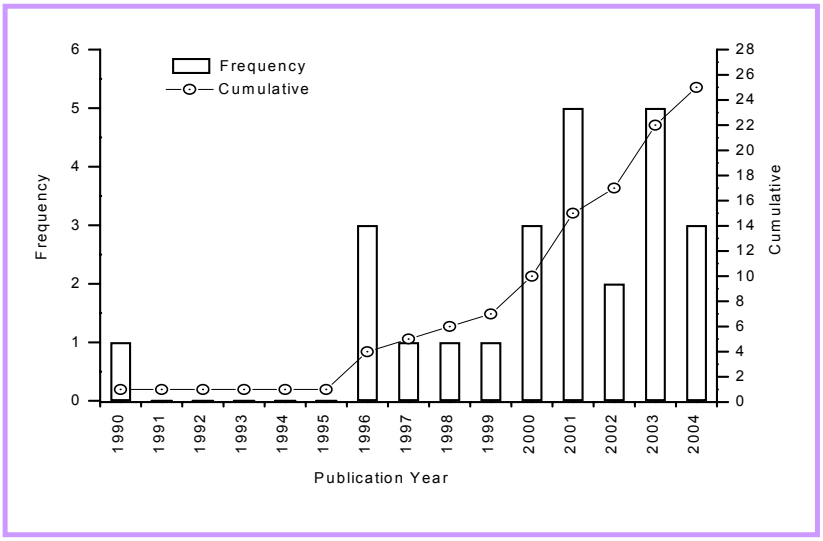

Fig. 8.38: Frequency of eprints in the live archives in single domain (J: Technical services libraries, archives and museums) at site eprints.rclis.org having 25 E-Prints downloaded on and up to 07-07-2004

8.4.10.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain J: Technical services libraries, archives and museums had 25 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 81 keyword/keyphrase (Table 8.38). Top ranking keyword/keyphrase were: Unión Europea, Centers of documentation, Centros de documentación, European Union, and Internet document delivery (Figure 8.39).

Table. 8.38: Keywords/Keyphrases occurrence in the metadata of 25 E-Prints of single domain specifications (J: Technical services libraries, archives and museums) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	Unión Europea	3
2.	Centers of documentation	3
3.	Centros de documentación	3
4.	European Union	3
5.	Internet document delivery	3
6.	Open archives	2
7.	bases de dades.	2
8.	SBN	2
9.	users	2
10.	public administration	2
11.	administración pública	2
12.	perfiles de usuario	2
13.	data bases	2
14.	institutional reporitory	2
15.	DD	2
16.	digital preservation	2
17.	Document delivery	2
18.	documentación parlamentaria	2
19.	EUROINFO	2
20.	ILL	2
21.	jurisprudence	2
22.	parliamentary	2

Sl. No.	Keywords/Keyphrases	Frequency
23.	política	2
24.	political documentation	2
25.	statistics gathering	2
Fifty Six Keywords/Keyphrases with frequency One:		
catalogazione; eprints; RICA; acceso a la información; access; conservations; e-learning; legislación; legislation; conservation; digitization; IFLA; preservation; access to information; documentary management; ER; gestión documental; risorse elettroniche; UDC; Acquisitions; Archivo de gestión; catalogazione descrittiva; CCOO; comité de empresa; Conservación de archivos; Conservación del patrimonio documental; digital information; digitale; Document media; document supply; documentary committee of company; fornitura documenti; fuentes documentales; Gutenberg's Bible; IFLA voucher; illuminated codices; management archive; Paper preservation; payment; performance indicators; performance measurement; preservation of Library materials; Preservation of of archives; Preservation of the documentary heritage; prestito interbibliotecario; Quality Of Service; reference; Reference service software Digital reference service; Remote Users; SDIAF; Security; Soportes documentales; Tokyo National Library; valor del documento; value of the document; and Vatican Library.		

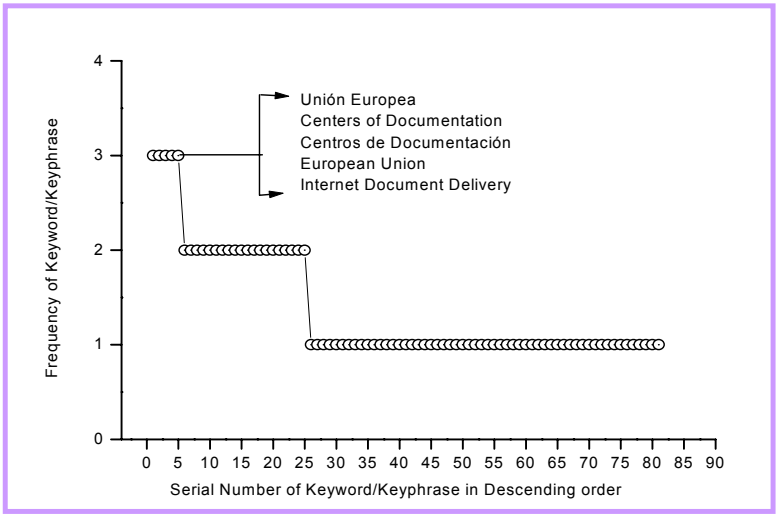

Fig. 8.39: Keywords/Keyphrases occurrence in the metadata of single domain (J: Technical services libraries, archives and museums) at site eprints.rclis.org having 25 E-Prints downloaded on and up to 07-07-2004

Table 8.39: Identification of authors in the Domain J: Technical services libraries, archives and museums as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1	Mangiaracina, Silvana	3	16	Hanley, Marian	1
2	Carosella, Maria Pia	2	17	Ionta, Matteo	1
3	Chiodetti, Anna Grazia	2	18	Kademani, B S	1
4	Marchitelli, Andrea	2	19	Kalyane, V L	1
5	Melloni, Marco	2	20	Kumar, Vijai	1
6	Abba, Laura	1	21	Mazzitelli, Gabriele	1
7	Alonso Llorca, Joan	1	22	Noverges Domenech, Natividad	1
8	Badoer, Remo	1	23	Ridi, Riccardo	1
9	Bertini, Lucia	1	24	Rodríguez Bouyssi, Juan	1
10	Bustos, Ana	1	25	Salamone, Patrizia	1
11	Buzzi, Marina	1	26	Sarti, Silvia	1
12	Della Porta, Carola	1	27	Scarafoni, Maria Pia	1
13	Fortuzzi, Cinzia	1	28	Sigalat Vayá, Maria Jose	1
14	Gennai, Francesco	1	29	Tajoli, Zeno	1
15	Hajdarovic, Nevenka	1	30	Thomson, Ian	1
				Total	**36**

8.4.11 Domain K: Housing Technologies

The Domain K **having only one eprint in the the E-LIS live archives.**

e.g. ID Code: 751; Author: Ombuen, Giulia; Title: Lavorare con i videoterminali. Misure tecnico-organizzative ed indicazioni comportamentali per il lavoro con attrezzature munite di VDT ; PY: 2003; Type of Source: Tutorial; Keywords: Health and safety at work with VDT Salute e sicurezza sul lavoro con VDT.

8.12 Domain L : Information technology and library technology

8.12.1 Growth of E-Print deposits

The 92 eprints in the live archives had publication year. These were depicted as per their publication year frequency and cumulative occurrence (Figure 8.40)

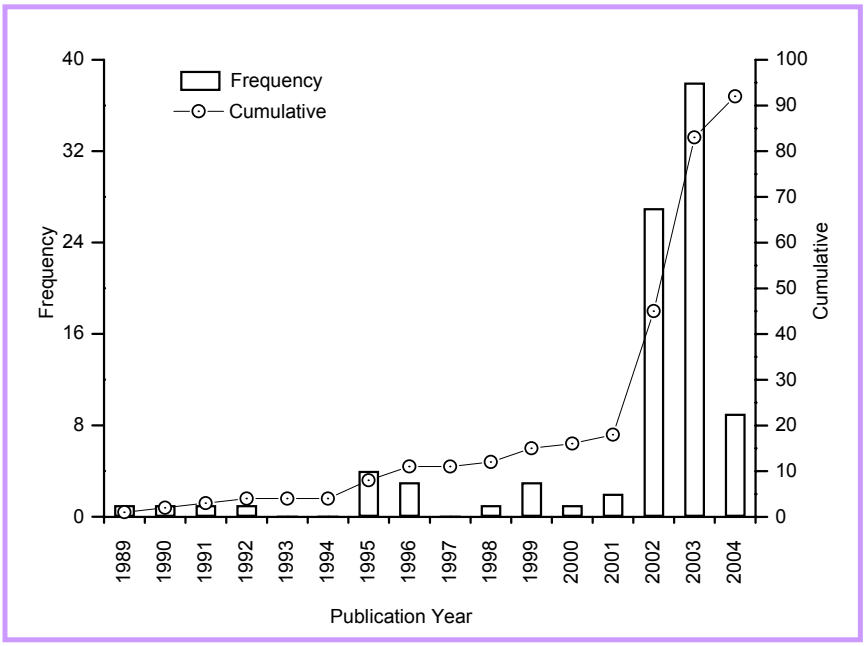

Fig. 8.40: Frequency of eprints in the live archives in single domain (L: Information technology and library technology) at site eprints.rclis.org having 92 E-Prints downloaded on and up to 07-07-2004

8.12.2 Contents analysis of E-Prints through Keywords/Keyphrases

The domain L: Information technology and library technology 92 deposits with single domain specifications. When keyword/keyphrase frequency count was taken, it was found that there were 290 keyword/keyphrase (Table 8.40). Top ranking keyword/keyphrase were: Open Archive Initiative, Digital libraries, OAI, CERN, and Internet (Figure 8.41).

Table. 8.40: Keywords/Keyphrases occurrence in the metadata of 92 E-Prints of single domain specifications (L: Information technology and library technology) at site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Keywords/Keyphrases	Frequency
1.	Open Archive Initiative	20
2.	Digital libraries	11
3.	OAI	10
4.	CERN	10
5.	Internet	10
6.	workshop	9
7.	Open archives	8
8.	OAI repositories	8
9	Open Archives Iniziative (OAI)	8
10.	metadata	7
11.	Open access	6
12.	peer review journals	6
13.	electronic libraries	5
14.	new technologies	5
15.	scholarly information	4
16.	informacion	4
17.	XML	4
18.	copyright	3
19.	electronic journals	3
20.	Centers of documentation	3
21.	Centros de documentación	3
22.	noves tecnologies	3
23.	Catalan	3
24.	Documentación ambiental	3
25.	environmental documentation	3
26.	Softcatala	3
27.	català	3
28.	networks	3
29.	scientific publishing	3
30.	digital library	2
31.	sociedad de la información	2
32.	OPAC	2
33.	Archives	2
34.	metadata.	2
35.	society of information	2
36.	Globalización	2
37.	search engines	2
38.	service providers	2
39.	Technologies	2
40.	data providers	2
41.	public administration	2
42.	administración pública	2
43.	bibliotecas digitales	2
44.	perfiles de usuario	2
45.	Tecnologías de la Información	2
46.	free software	2
47.	information retrieval	2
48.	nuevas tecnologías	2
49.	OAI-PMH	2
50.	protocols	2

Sl. No.	Keywords/Keyphrases	Frequency
51.	Artificial Intelligence	2
52.	Bibliotecas virtuales	2
53.	CDSware	2
54.	eprints repositories	2
55.	Expert Systems	2
56.	Information Technologies	2
57.	Library Automation Software	2
58.	OAI Metadata Harvesting protocol	2
59.	OPAC web	2
60.	Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)	2
61.	Open Directory Project	2
62.	profiles of users	2
63.	software	2
64.	software lliure	2
65.	software.	2
66.	Usabilidad	2
67.	usability	2
68.	user-lab	2
69.	virtual libraries	2
70.	visualización de información	2
	Two hundred twenty Keywords/Keyphrases with frequency One:	
authority Records; repositories; bases de dades.; SBN; España; libraries; Spain; specialized libraries; users; electronic publishing; art; Servizio bibliotecario nazionale; e-learning; LEAF; usuarios; author's rights; biblioteche digitali; conocimiento; data bases; Dublin core; EAD; e-mail; e-publishing; network; ArXiv; comercio electrónico; Didactics; e-commerce; Economics; editoria elettronica; electronic commerce; Espanya; Gandia; hybrid libraries; JSTOR; knowledge; MetaOPAC; multimedia; Periodismo; Red; Statistics; Streaming; videoregistrazione; About.com; Accesibilidad a la Información; access systems; Accessibility to the Information; All the Time Fast Search; All the web; Alvar Garcia; architecture of the information; archivos de prensa.; ARNO; arquitectura de la información; Art History; artificial neuronal networks; arxius; AskJeeves; Astronomy; BDI; bibliografic reserach; biblioteca digitale accademica italiana; Biblioteca digitale italiana; biblioteca especializada; Bibliotecas públicas españolas; biblioteques; CAS; CDS/ISIS; centro linguistico; Classical Archaeology; COAP; Collaborative Work Service; collezioni digitali; communications; CompuServe; comunicaciones; Conversion of data; Conversione dei dati; CRUI; derecho de autor; Design History; Digital communities; digital publishing; Digital rooms of consultation; Direct Hit; diseño de información; documentación periodística; DSpace; EasyWeb; Edit Mediterrània; electronic integration; electronic links; Electronic resources (RER); Encomix; escalabilidad; espacio natural; espacio rural; Europe; European Library Project (TEL); European University Institute; Evaluación de Sistemas de Información; Evaluation of Information systems; Excite; experience of user; experiencia de usuario; Extensible Markup Language; Extranet; FAST Image Transfer Adobe Photoshop plug-in; Fedora; file sharing; Filtering Service; GNU Eprints; gophers.; heuristic tests.; hypermedia; iCite; image files; Indice 2; information design; insegnamento delle lingue; integración; integral system; Intelligent Computer-Assisted Instruction; interfaces de usuario; interfaces of user; internet searching; Intranet; i-Tor; Journalism; Koha; library philosophy and practice; Library Services; link scent; Looksmart; matteo Ionta; mediateca; metadatos; Methodology for the development of Information systems; methods and techniques.; Metodología de Desarrollo de Sistemas de Información; métodos y técnicas; modern manuscripts; MPG eDoc; multimedia databases; multimedia message systems; musical files; MyCoRe. OA softwares.; Natural Language Applications; natural space; news archive; news library; NewsML; NITF; OAI 1.0 repository.; OAI implementation; oai-rights; OEBPS;		

Continue

Okapi; Open Archive Initiative Protocol for Metadata Harvesting (OAI-PMH); Open Archives Initiatives harvesting protocol; Open Citation Project; Open eBook Publication Structure; open publishing.; Open Source Software; OpenOffice; opsonline; periodici digitalizzati; progetti di biblioteche digitali; progetti di digital libraries; Protocol for Metadata Harvesting (OAI-MPH); Public-Access Computer Systems; RCursos web; recuperación de información; Recursos electrónicos; redes neuronales artificiales; reingeniería; Repositories of information; resources; resources Web.; ricerca; Rich Site Summary; risorse informative; RSS; rural space; Salas de Consulta Digitales; sample groups; scalability; Scholarly Electronic Publishing; Scientific journals; SciX project; SDI; sector turístico; services providers; Servicom; shop engines; sistema integral; SKIOS; Spanish public libraries; Spritel; tests heurísticos; thesis; tourism; trabajo colaborativo; triangulation; tutorial; UK Archival Thesaurus; Undernet; università italiane; University of Molise; user services; utenti accademici; Validation; vertical portals; Virtual Observatory (VO); visual resource; web cataloging; web communities; World Wide Web Consortium; xarxa.; and Yahoo!.

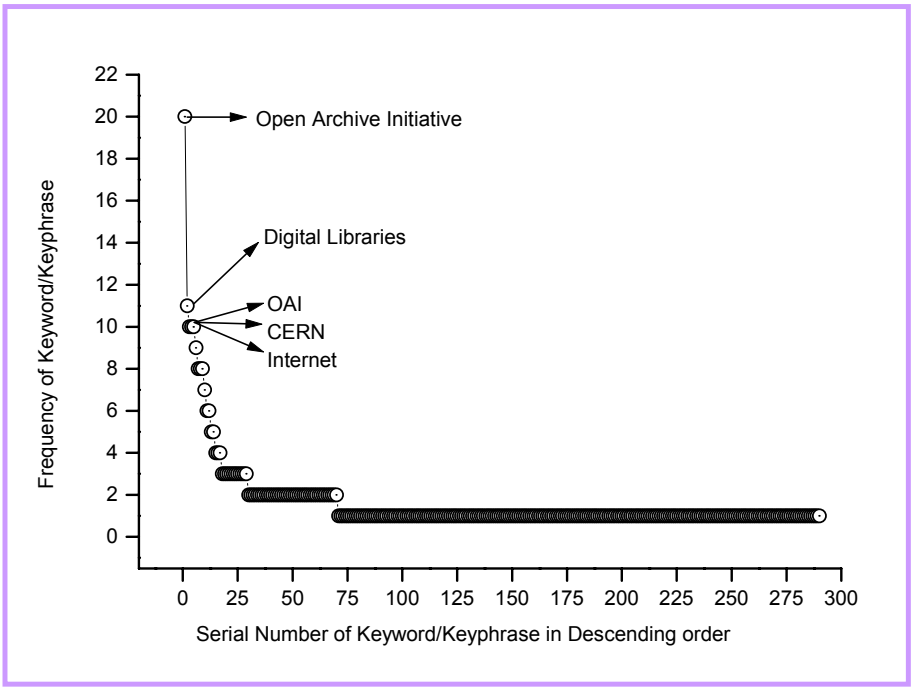

Fig. 8.41: Keywords/Keyphrases occurrence in the metadata of single domain (L: Information technology and library technology) at site eprints.rclis.org having 92 E-Prints downloaded on and up to 07-07-2004

Table 8.41: Identification of authors in the Domain L: Information technology and library technology as per site eprints.rclis.org downloaded on and up to 07-07-2004

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
1.	Mornati, Susanna	5	53.	Kumar, Vijai	1
2.	Bailey, Jr , Charles W	4	54.	Lagoze, Carl	1
3.	Van de Sompel, Herbert	3	55.	Lagoze, Carl	1
4.	Marchitelli, Andrea	2	56.	Lieder, HansJörg	1
5.	Matthaei, Birgit	2	57.	Lopez Carreño, Rosana	1
6.	Müller, Uwe	2	58.	Lorente, Magdalena	1
7.	Turk, Ziga	2	59.	Lupi, Mauro	1
8.	Adell, Jordi	1	60.	Lützenkirchen, Frank	1
9.	Anderson, Ian	1	61.	Mackenzie, George	1
10.	Andrew, Theo	1	62.	Maffei, Lucia	1
11.	Asnicar, Fabio	1	63.	Maniega Legarda, David	1

Sl. No.	Authors	Number of authorships	Sl. No.	Authors	Number of authorships
12.	Badoer, Remo	1	64.	Martinez Mendez, Francisco Javier	1
13.	Bardi, Luca	1	65.	Medeiros, Norm	1
14.	Bellver, Carles	1	66.	MEI, Editorial board	1
15.	Belzunces, Marc	1	67.	Mitric, Marina	1
16.	Bide, Mark	1	68.	Muñoz García, Salvador	1
17.	Carpenter, Leona	1	69.	Nelson, Michael L	1
18.	Casal, David	1	70.	Pàmies, Víctor	1
19.	Casals Fornos, Carmen	1	71.	Pandey, Rasik	1
20.	Child, Paul	1	72.	Papa, Jula	1
21.	Cliff, Pete	1	73.	Peláez, Teresa	1
22.	Cole, Louise	1	74.	Pilia, Elisabetta	1
23.	Corrius, Jesús	1	75.	Pirri, Marco	1
24.	Crestani, Fabio	1	76.	Prakasan, E R	1
25.	Crow, Raym	1	77.	Rajan, Rahim S	1
26.	Cueva, Alejandro de	1	78.	Ramírez, Jorge	1
27.	Daniel, Rossini	1	79.	Ridi, Riccardo	1
28.	Danschin A , Guadalupe	1	80.	Rodríguez i Gairín, Josep Manuel	1
29.	De Robbio, Antonella	1	81.	Rodríguez, David	1
30.	di Girolamo, Maurizio	1	82.	Ross, Seamus	1
31.	Díez, Jesús	1	83.	RuschFeja, Diann	1
32.	Echagüe Burgos, José Antonio	1	84.	Sgambati, Giuliana	1
33.	Foulonneau, Muriel	1	85.	Sodi, Saverio	1
34.	Frías, Amparo	1	86.	Sonker, Sharad Kumar	1
35.	Garcia Gomez, Juan Carlos	1	87.	Straccia, Umberto	1
36.	Genova, Francoise	1	88.	Swarna, T	1
37.	Gonzalez Olivares, Jose Luis	1	89.	Tajoli, Zeno	1
38.	Guerrero Bote, Vicente P	1	90.	Tajoli, Zeno	1
39.	Gunjal, Bhojaraju	1	91.	Tallandini, Laura	1
40.	Gutteridge, Christopher	1	92.	Tentoni, Paola	1
41.	Hernández Franco, Carlos	1	93.	Tiozzo, Stefano	1
42.	Hernández, Tony	1	94.	Tonello, Giuliano	1
43.	Hitchcock, Steve	1	95.	Tramullas, Jesús	1
44.	Hohmann, Georg	1	96.	Valenti, Fulvia	1
45.	Ionta, Matteo	1	97.	Van der Vaart, Lilian	1
46.	Jange, Suresh	1	98.	van Veen, Theo	1
47.	Jayakanth, Francis	1	99.	Vesely, Martin	1
48.	Jones, Richard	1	100.	Viñals Blasco, María José	1
49.	Kademani, B S	1	101.	Warner, Simeon	1
50.	Kalyane, V L	1	102.	Yakimischak, David	1
51.	Krichel, Thomas	1	103.	Yraolagoitia, Jaime de	1
52.	Krot, Michael	1	Total		116

9. CONCLUSIONS

The priority for ideas and philosophy related to "Network Theory" have been traced back and documented by Braun (2004), and credit goes to Karinthy (1929).The IT has empowered to realise it, as the most practical phenomena and it is no more a humour. The OAI (Open Archives Initiatives) and ACIS (Academic Contributor Information System)are progressive in the direction ,which may lead to realise the "Collective Genius" (pekelis 1984) at global level. Focus of present study is on Author-Self-Archiving (A-S-A)Metadata of the 983 Eprints in the Live Archives of the E-LIS (EPrints of Library and Information Science),which were approved till 7th July 2004.The A-S-A Metadata was used for librametric analysis. Self-explanatory bibliographics are illustrated.The highlights include: Conference papers (34%); highest approval, June 2004 (28%); published archives (76%); not refereed (52%); not in public domain (60%); highest self-archiving-author (De Robbio, Antonella).The Nos. of EPrints having single JITA domain specifications were: Theoretical and general aspects of libraries and information (27); Information use and sociology of information (80);Users,literacy and reading (13); Libraries as physical collections (30); Publishing and legal issues (57); Management (13); Industry, profession and education (36);Information sources, supports, channels (113); Information treatment for information services,Information functions and techniques (101); Technical services libraries, archives and museums (25); Housing technologies (1); Information technology and library technology (92); and Inter-domainery i.e. having specifications of two or more than two JITA classes (395).

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