DLIST: Building An International Scholarly Communication Consortium for Library and Information Science

By

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ABSTRACT

DLIST is the Digital Library of Information Science and Technology, a repository of electronic resources in the domains of Library and Information Science (LIS) and Information Technology (IT). Initial collection development scope is in Information Literacy and Informetrics. Academics, researchers, and practitioners create a wealth of content that includes published papers, instructional materials, tutorials for software and databases, bibliographies, pathfinders, bibliometric datasets, dissertations and reports. DLIST aims to capture this wealth of information in a library that is openly available for re-use and flobal dissemination. Open deposit processes where authors retain copyright and facilities for full-text storage in a variety of formats are used.

A demonstration of DLIST along with the steps to register, deposit, and use materials is a part of the oral presentation at CALIBER 2003, Ahmedabad, India. UK and US experiences in building institutional repositories and strategies for international consortia building for resource sharing using DLIST are also outlined.

## KEY WORDS: Scholarly Communication, Consortia, Information Technology, Public Domain, Library and Information Science, Information Literacy, Informetrics

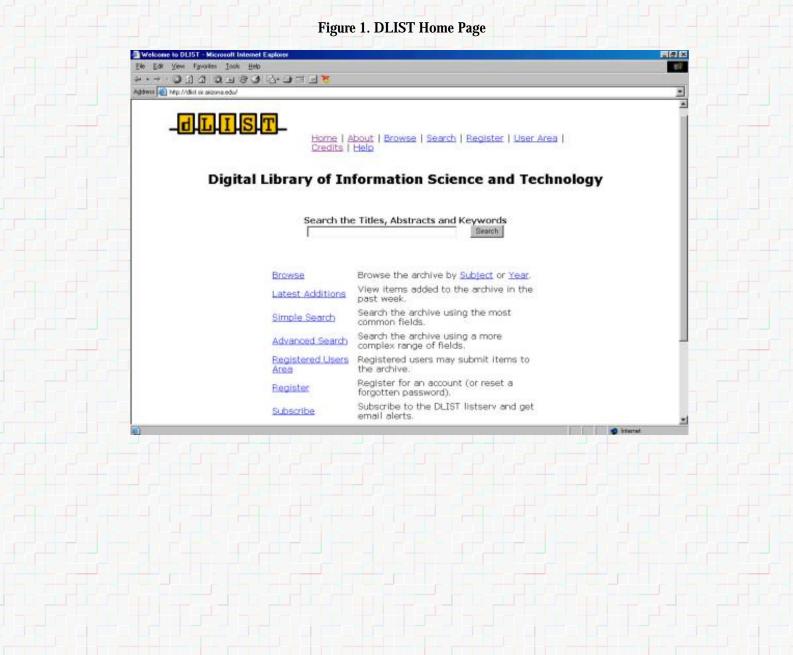
0. INTRODUCTION

DLIST, which stands for the *Digital Library of Information Science and Technology*, is a recently initiated project of the School of Information Resource and Library Science at the University of Arizona in partnership with the Arizona Health Sciences Center [4]. The primary objective of DLIST is to create a web-accessible, open, digital repository for Library and Information Science and Information

#### Technology.

DLIST is based on free software. At its core is the Eprints 2.2 package developed at the University of Southampton, UK [6]. Eprints requires the Linux operating system; the Apache web server with mod\_perl, the Perl programming language with a handful of extra modules, and the MySQL database system [8, 1, 10]. Another open source software, Webalizer is used to analyze and prepare DLISTusage reports [15].

Eprints software is generally used to build institutional or discipline repositories of scholarship, the outputs of research such as journal articles, technical reports, conference proceedings, theses, dissertations, and books. Whole journals, books, and conference proceedings or their components such as individual chapters, and articles can be deposited into a web-accessible digital storage system and described using a database form [13, 14]. Examples and well-known Eprint archives exist for disciplines such as Cog Prints for Cognitive Science and ArXiv for Physics [3, 2]. Figure 1 shows a screenshot of the DLIST home page [4].



The DLIST project is unique among the Eprint repositories that currently exist and is similar in concept to the recently announced MIT project, Dspace [5]. We have extended the Eprint types beyond the traditional scholarly products of research to learning objects such as teaching materials (tutorials, syllabi, course outlines, lesson plans), learning objects (interactive presentations), and bibliographic instruction materials (pathfinders and bibliographies). We feel that the fundamental principles and knowledge in the two areas of our

collection development, LIS and IT are areas in which the lines between research and teaching products are often blurring. The need for lifelong continuous, updating of information literacy and information technology (computing) literacy skills are becoming ever more important in our modern-day society. Repositories that integrate the outputs of research and teaching activities can make the information necessary for the acquisition and constant updating of these skills more easily and widely accessible. DLIST is thus unlike efforts such as MERLOT, GEM, and NDLTD [9, 7, 11]. MERLOT and GEM focus on educational materials, while the NDLTD collects digital theses and dissertations.

### 1. TYPES OF MATERIALS IN DLIST

Academics, researchers and practitioners in LIS and IT create a wealth of content. To capture this wealth and create a library that is as useful as possible, DLIST supports full-text materials (currently limited to English) such as published journal and book articles, bibliometric data sets, instructional and help materials, library pathfinders, reports, and bibliographies. Figure 2 shows some of the types of materials available in DLIST.

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Materials can be stored in the DLIST in formats such as HTML, pdf, text, and postscript. Authors can either upload materials directly to the archive, or specify a URL from which the material may be loaded into the system. In either case, a copy of the work is hosted on the DLIST server. Appendix 1 lists the metadata elements that authors provide at the time of the paper deposit/upload.

### 2. SUBJECTS COVERED BY DLIST

Creators of materials in all areas of LIS and IT are encouraged to participate in DLIST. The full list of DLIST subjects are given in <u>Appendix 2</u>; note that this is not a complete list of all subjects or topics in LIS & IT. New subjects may be added upon the request of authors or as needed. While authors in all LIS/IT subject areas are encouraged to deposit their materials there are two initial areas of emphasis in DLIST:

- Information Literacy We are seeking formal papers as well as help materials, guides, bibliographies, pathfinders, tutorials and other instructional materials in LIS & IT (for example, database guides such as InfoTrac, MedLine, Dream weaver tutorials).
- Informetrics We are seeking formal research papers as well as Informetrics and bibliometric datasets.

#### 3. AN INVITATION TO PARTICIPATE

We are actively seeking partners who can contribute papers, instructional and Informetrics' materials to the project. Besides, refereed and published papers, datasets, help pages, guides, tutorials, and documentation created to help use of information systems, bibliographic databases/indexes, and electronic resources, are the focus of our 'academic and research papers' archive building and collection development efforts. If you have any materials of this nature, please consider depositing them with DLIST for use and access to a wider audience.

We invite authors in the areas of Information Science and Information Technology to self-register and deposit their papers. Authors can choose to participate by contributing their research papers (either before or after publication). If you are interested in having your participation in DLIST coordinated or just have questions, please call or email the DLIST Project Manager: Paul Bracke, Phone: +1 (520) 621-4872, Email: paul@ahsl.arizona.edu.

# 4. WHY SHOULD AUTHORS, LIBRARIANS, AND TECHNOLOGY TEACHERS DEPOSIT IN DLIST?

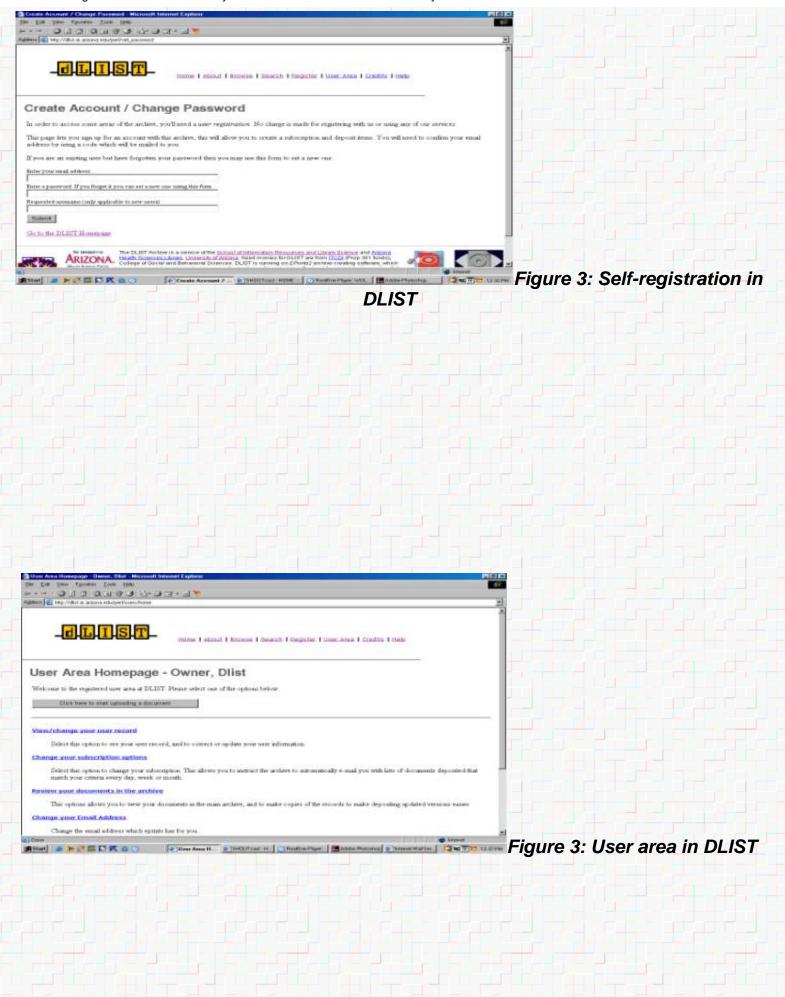
DLIST will improve the visibility and impact of deposited works in several ways:

• DLIST will lower barriers to access of materials in LIS and IT by making them freely available. Research has shown that papers with online access are more frequently cited than those without.

• DLIST will make available a wide range of resources created by researchers and practitioners in LIS and IT. Regardless of the format, DLIST provides the opportunity to make your work widely available.

• DLIST will be part of a global network of research information. The content of DLIST (and many other servers) will be accessible through the Open Archives Initiative (OAI) Protocol for Metadata Harvesting [12].

# Figure 3 shows the self-registration process which authors must complete before they can deposit their articles. Figure 4 shows the private user area.



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Figure 5 shows one part of the DLIST deposit process and associated metadata creation whereby new materials are submitted to the repository. Self-archiving and submission facilities are open to all registered users. <u>Appendix 3</u> provides the text for all the sample forms used in self-deposit.

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**Deposit Process and Metadata Creation** 

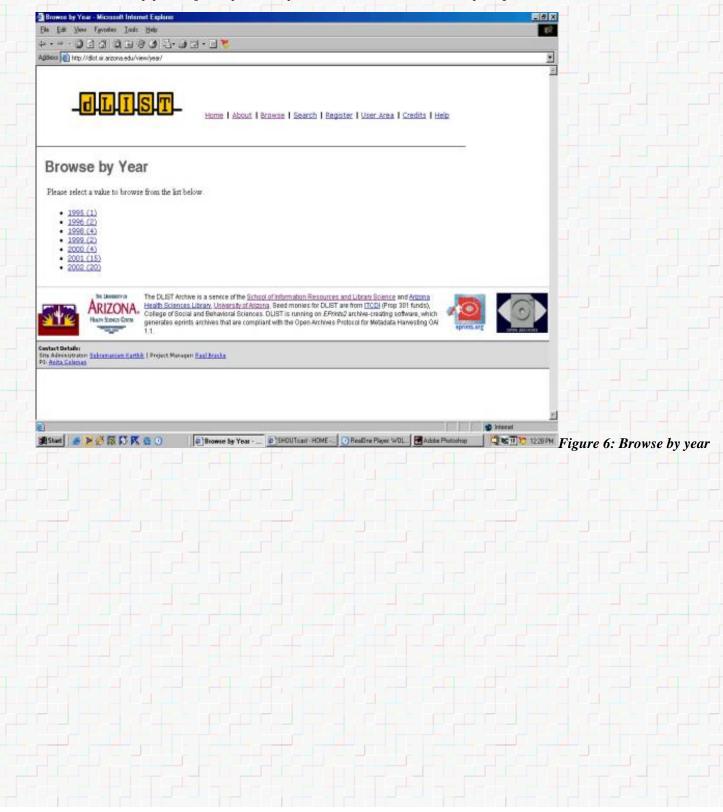
## 5. WHAT ABOUT COPYRIGHT?

Many, but not all, traditional print journals will allow author self archiving. The Self-Archiving FAQ in DLIST has further information; be sure to check the copyright transfer statements for any publications you may have questions about.

Publisher policies with regarding to self-archiving are also being investigated by projects such as ROMEO (Rights Metadata for Open Archiving). Self-archiving policies for LIS publishers will become available on the DLIST archive in Spring 2003.

#### 6. DLIST SEARCH AND BROWSE CAPABILITIES

Figure 6 shows the browse by year capability currently available in DLIST. Browse by subject, which is also available, is not shown.



Figures 7 and 8 show the Simple Search and Advanced Search Capabilities currently available in DLIST.

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#### 7. DOCUMENTATION AND HELP FOR DLIST

Figure 9 shows the screenshot for DLIST Documentation, which is available on how to deposit materials, the process of user and author self-registration, searching DLIST, copyright information, and archiving policies and practices.

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#### 8. DLIST USAGE STATISTICS

Currently, there are about 140 registered users, from many different countries around the world. Tables 1 and 2 below show DLIST usage since inception until January 19, 2003.

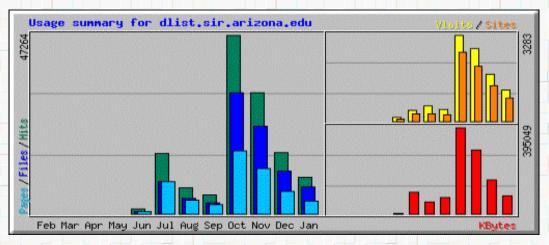




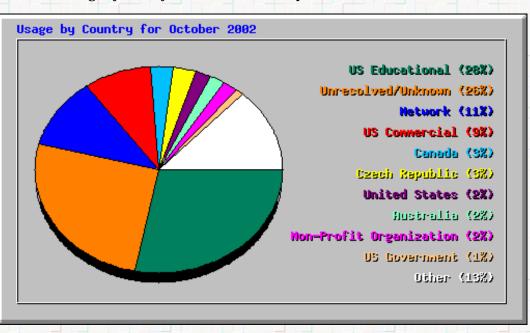
Table 2: Usage Summary by Month

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Jan 2003	503	371	175	61	898	81473 _	1171	3338	7063	9562			
Dec 2002	518	361	193	58	1371	156445	1804	5998	11221	16088			
Nov 2002	1063	770	402	92	2099	290605	2776	12079	23115	31902			
Oct 2002	1524	1029	537	105	2634	395049	3283	16649	31908	47264			
Sep 2002	166	93	82	14	263	75962	448	2461	2808	5006			
Aug 2002	220	129	113	18	285	53137	575	3518	4008	6829			
Jul 2002	518	272	271	13	271	99139	417	8409	8461	16060			
Jun 2002	68	26	34	8	87	2654	152	662	506	1297			
Totals						1154464	10626	53114	89090	134008			

 Table 3: DLIST Usage statistics for October 2002

Total Hits	47264
Total Files	31908
Total Pages	16649
Total Visits	3283
Total Kbytes	395049
Total Unique Sites	2634
Total Unique URLs	378
Total Unique Usernames	48

Table 4 shows the usage by country. Table 5 shows the top 30 countries from which DLIST users come.



Emails from users in countries such as South Africa and India highlight the potential of DLIST to build a strong and freely available resource-sharing library of instructional material. DLIST can improve global communication; thus, it also has the potential to serve as a scholarly communication consortium resource for collaborations by and for information professionals.

Table 5: Number of hits, files downloaded (size in Kbytes) and country of origin of DLIST user in October 2002

#	Hits			Files		Bytes	Country	
1	13195	27.92%	7663	24.02%	83099	21.04%	US Educational	
2	12081	25.56%	8705	27.28%	107049	27.10%	Unresolved/Unknown	
3	5350	11.32%	3643	11.42%	45891	11.62%	Network	
4	4474	9.47%	2905	9.10%	32836	8.31%	US Commercial	
5	1625	3.44%	1283	4.02%	16354	4.14%	Canada	
6	1481	3.13%	1170	3.67%	13688	3.46%	Czech Republic	
7	1088	2.30%	632	1.98%	6009	1.52%	United States	
8	864	1.83%	681	2.13%	9328	2.36%	Australia	
9	802	1.70%	605	1.90%	6354	1.61%	Non-Profit Organization	
10	479	1.01%	370	1.16%	4100	1.04%	US Government	
11	465	0.98%	392	1.23%	4916	1.24%	United Kingdom	
12	398	0.84%	56	0.18%	8476	2.15%	Austria	

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13	389	0.82%	314	0.98%	1814	0.46%	France	
14	375	0.79%	287	0.90%	8464	2.14%	Spain	
15	375	0.79%	276	0.86%	2916	0.74%	Israel	
16	363	0.77%	244	0.76%	2880	0.73%	Italy	
17	307	0.65%	269	0.84%	1633	0.41%	India	
18	261	0.55%	250	0.78%	1755	0.44%	Germany	
<u>19</u>	261	0.55%	192	0.60%	1305	0.33%	Netherlands	
20	251	0.53%	202	0.63%	1752	0.44%	Sweden	
21	243	0.51%	153	0.48%	4224	1.07%	Portugal	
22	238	0.50%	209	0.66%	1645	0.42%	US Military	
23	199	0.42%	105	0.33%	4050	1.03%	Croatia (Hrvatska)	
24	184	0.39%	114	0.36%	701	0.18%	Belgium	
25	171	0.36%	104	0.33%	660	0.17%	Finland	
26	133	0.28%	87	0.27%	2256	0.57%	Denmark	
27	126	0.27%	102	0.32%	7696	1.95%	New Zealand (Aotearoa)	
28	113	0.24%	76	0.24%	958	0.24%	Japan	
29	111	0.23%	84	0.26%	477	0.12%	South Africa	
30	100	0.21%	95	0.30%	747	0.19%	Iceland	

#### FUTURE WORK

8.

Our plans include the following:

1. Long term sustainability and funding to build a trusted repository.

2. Focus collection development on a 'digital core' collection for LIS.

3. Implement citation indexing.

4. Implement the Greenstone Digital Library full-text search.

5. Develop and make available policies for metadata, collection development, and use.

6. Address intellectual property concerns by providing copies of publisher agreements.

7. Add subject editors to maintain quality and oversee deposits.

8. Separate collections within the archive.

Discussions are currently underway for affiliates and partners in the US and UK.

9. CONCLUSION

Librarians, leaders in shaping solutions for the scholarly communication crisis in other disciplines and resource sharing collaborators beyond par, create a wealth of instructional materials (for example, tutorials for software and databases, bibliographies, pathfinders) that are neither managed nor harnessed efficiently for re-use. DLIST provides a venue to explore solutions such as self-archiving, discipline, institutional archiving, and similar other innovative processes. This paper has discussed many of the major features of DLIST for such scholarly communication consortium building in Library and Information Science. These include the use of open source software such as Eprints, open deposit processes whereby authors retain copyright of their own materials, and open registration whereby users choose to display their affiliations. Additionally, the software has features such as versioning, where one can keep track of the different versions of a paper or tutorial, and the potential for implementing citation indexing where citing and citation behaviors can be used for better information retrieval. The benefits of DLIST have been briefly discussed. Not only does DLIST contribute to the development of a strong intellectual commons it can serve as the venue of a global scholarly communication consortium in LIS.

#### 10. FUNDING AND ACKNOWLEDGEMENTS

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#### Appendix I: DLIST Metadata

This is the list of the DLIST metadata elements. DLIST metadata is Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) compliant. OAI-PMH uses Dublin Core as its basic subset.

Elements

- 1. Eprint Type (see list below at item 24)
- 2. Later Version
- 3. Commentary On
- 4. Status: Values are Published, Unpublished, In Press
- 5. Public Domain: Values are Yes, It is in the Public Domain, No
- 6. Editors Names:
- 7. Title:
- 8. Subjects: See list at http://dlist.sir.arizona.edu/subjects/ or in Appendix 2
- 9. Year:
- 10. Abstract:
- **11. Conference:**
- 12. Series:
- 13. Conference Date:
- 14. Location:

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- 15. Volume:
- 16. Number:
- 17. Publisher:
- 18. Commentary on:
- **19.** Alternative Locations:
- 20. Keywords:
- 21. Additional Information:
- 22. References:
- 23. Comments and Suggestions:
- 24. Format: Values are:

#### PDF

ii. HTM

i.

- iii. HTML
- iv. Microsoft Excel Worksheet (.xls)
- v. Microsoft Powerpoint Presentation (.ppt)
- vi. TEXT
- vii. Rich Text Format
- viii. Postscript
- ix. ASCII
- x. Microsoft Word Document
- 25. You may offer an additional brief description of the format.
- 26. Security level (of this document. Who is allowed to download it?) Values are: Anyone, Registered users only, Archive staff only

# **Appendix 2: DLIST Subjects**

Academic Libraries Anthropology Archaeology Archives **Artificial Intelligence Bibliometrics** Cataloging **Citation Analysis** Classification **Co-citation Analysis Cognitive Science** Communications **Computational Linguistics Computer Science** Data Mining Databases **Digital Libraries Distributed Learning Economics** Anthropology Archaeology Archives

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BEIST: Building An International Scholary Communicat	ion consolution	iu mornator	I Science	
Artificial Intelligence				
Bibliometrics				
Cataloging				
Citation Analysis				
Classification				
Co-citation Analysis				
Cognitive Science				
Communications				
Computational Linguistics				
Computer Science				
Data Mining				
Databases				
Digital Libraries				
Distributed Learning				
Economics				
Economics of Information				
Electronic Publishing				
Epistemology				
Evaluation				
Geographic				
Digital Libraries				
Geographic Information Science				
Geography				
Human Computer Interaction				
Hypertext and Hypermedia				
Indexing				
Information Analysis Information Extraction				
Information Literacy				
Information Science				
Information Seeking Behaviors				
Information Systems				
Informetrics				
Interdisciplinarity Internet				
Journalism				
Knowledge Management				
Knowledge Organization				
Knowledge Representation				
Knowledge Structures				
Learning Science				
Libraries				
Library Instruction				
Library Science				
Library Statistics				
Library Systems				
Library and Information Science Education				
Linguistics				
Management				
Management Information Systems				
Map Librarianship				
Media Studies				
Metadata				
Museums				
Natural Language Processing				
Neuroscience				
Ontology				
Philosophy				
Psychology				

Qualitative Research **Quantitative Research Reference Services Research Methods Scholarly Communication** Science Technology Studies Social Epistemology Sociology Software Standards Training **User Studies** Virtual Communities Web Metrics Web Mining Wireless Technologies

World Wide Web XML

Z39.50

## **Appendix 3: DLIST (Eprints) Deposit Process**

A complete overview of the deposit process for submitting resources to the DLIST archive and creating the relevant metadata can be seen from the sample forms below:

Metadata Creation during DLIST Deposit: Asterisks indicate element is required

Deposit Type EPrint Type \* Please select the most appropriate type for your deposit.

Bibliography Book Book Chapter Conference Proceedings Conference Paper Conference Poster Dataset Departmental Report Guide In Collection Interactive Material Journal (On-line/Unpaginated)

Journal (Paginated) Journal Article (On-line/Unpaginated) Journal Article (Paginated) Library Instructional Material Newspaper/Magazine Article Other

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Pathfinder				
Preprint				
Presentation				
Report				
Syllabus				
Technical Report				
Thesis				
Tutorial				

#### Succession/Commentary

Later Version of

If this document is a revised version of another document in the archive, please enter its ID code in this box.

Commentary on If your item is a commentary on another document (or author's response to a commentary) in the archive, please enter its ID in this box.

**Bibliographic Information** 

Please enter the bibliographic data about your deposit. Fields marked with a \* are fields that must be filled out before your deposit will be accepted.

Status \*

Please state here whether your deposit has been published, is currently in the process of being published (in press), or has not been previously published.

Unpublished In Press – Published – Public Domain

If the document you are deposit is not your own but rather an old document that is now in the public domain, then please tick the following box. This will prevent your own name and address appearing with the document as the address for correspondence. Yes, it is public domain No

Editors

Please enter the names of the editors.

1. Title Given Name(s)/Initials Family Name(s) Lineage Person ID:

2. Title Given Name(s)/Initials Family Name(s) Lineage Person ID:

3. Title Given Name(s)/Initials Family Name(s) Lineage Person ID:

Title \*

Please enter the full title of the deposit.

Subjects \*

Please select at least one main subject category, and optionally up to two other subject categories you think are appropriate for your submission, in the list below. In some browsers you may have to hold CTRL or SHIFT to select more than one subject.

Academic Libraries Anthropology Archaeology

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• • • • • • • • • • • • • • • • • • •		-	
Archives			
Artificial Intelligence			
Bibliometrics			
Cataloging			
Citation Analysis			
Classification			
Co-citation Analysis			
Cognitive Science			
Communications			
Computational Linguistics			
Computer Science			
Data Mining			
Databases			
Digital Libraries			
Distributed Learning			
Economics			
Anthropology			
Archaeology			
Archives			
Artificial Intelligence			
Bibliometrics			
Cataloging			
Citation Analysis			
Classification			
Co-citation Analysis			
Cognitive Science			
Communications			
Computational Linguistics			
Computer Science			
Data Mining			
Databases			
Digital Libraries			
Distributed Learning			
Economics			
Economics of Information			
Electronic Publishing			
Epistemology			
Evaluation			
Geographic			
Digital Libraries			
Geographic Information Science			
-Geography			
Human Computer Interaction			
Hypertext and Hypermedia			
Indexing			
Information Analysis Information Extraction			
Information Literacy			
Information Science			
Information Seeking Behaviors			
Information Systems			
Informetrics			
Interdisciplinarity			
Internet			
Journalism			
Knowledge Management			
Knowledge Organization			
Knowledge Representation			
Knowledge Structures			
Learning Science			

Libraries **Library Instruction Library Science Library Statistics** Library Systems Library and Information Science Education Linguistics Management **Management Information Systems** Map Librarianship **Media Studies** Metadata Museums Natural Language Processing Neuroscience Ontology Philosophy Psychology **Qualitative Research Quantitative Research Reference Services Research Methods Scholarly Communication Science Technology Studies** Social Epistemology Sociology Software Standards Training **User Studies** Virtual Communities Web Metrics Web Mining **Wireless Technologies** World Wide Web XML

Year\*

Please enter the year in which your deposit was published or produced.

Abstract

Please enter the abstract of your deposit. You can easily copy and paste it into this box.

#### Conference\*

Please enter the full name of the conference.

Series.

The title of the series or set of books.

#### **Conference Date**

Please enter when the conference took place.

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#### Location

Enter here where the conference took place.

#### Volume

Enter the volume number of the journal in which your deposit appeared.

#### Number

Enter the issue number of the journal in which your deposit appeared.

#### Publisher

Please enter the name of the publisher.

#### **Commentary** on

If your deposit is a commentary on a item that is not in this archive, please enter the full reference of the item here.

#### Alternative Locations

If your deposit is available from other sites, please enter the URLs of your deposit on those sites here, including the initial http://. Please give the full URL of the item itself, and not just the hosting website.

## 1.

3.

2.

#### Keywords

Enter here any keywords you think will aid searchers in finding your deposit. Please be careful to enter specific keywords relevant to your deposit, and don't be too general.

#### **Additional Information**

If you think you can specify some useful information about your deposit that can't be entered anywhere else, please enter it here.

#### References

You are strongly encouraged to paste in the reference list of your item into the box below. It will be used to link your item to those it cites and to those that cite it.

#### **Comments and Suggestions**

Any comments to the editor (this information will not be displayed to the public). Suggestions (with justification) for additional subject fields.

Please select the storage format of this document.

PDF
HTM
HTML
Microsoft Excel Worksheet (.xls)
Microsoft Powerpoint Presentation (.ppt)
TEXT
Rich Text Format
Postscript
ASCII
Microsoft Word Document

You may offer an additional brief description of the format.

Please indicate the required "security level" of this document. Who is allowed to download it? Anyone Registered users only Archive staff only

**Document File Upload** 

Please select an upload method. File Upload Capture from URL. ZIP Archive Upload.tar.gz Archive Upload If uploading plain files, please indicate how many.

Document File Upload Please enter the URL of the document you wish to upload to the archive in the box below.

Occasionally, uploading this way may not produce a totally accurate copy. This is because some assumptions about the structure of the HTML must be made, to stop the software from trying to upload the whole World-Wide Web!

Deposit Verification You have not finished yet!

Please verify that all of the details about your deposit are correct, and that all necessary document files have been correctly uploaded including any figures.

# When you are satisfied click the submit button at the foot of this page.

For work being deposited by its own author: In self-archiving this collection of files and associated bibliographic metadata, I grant DLIST the right to store them and to make them permanently available publicly for free on-line. I declare that this material is my own intellectual property and I understand that DLIST does not assume any responsibility if there is any breach of copyright in distributing these files or metadata. (All authors are urged to prominently assert their copyright on the title page of their work.)

For work being deposited by someone other than its author: I hereby declare that the collection of files and associated bibliographic metadata that I am archiving at DLIST) is in the public domain. If this is not the case, I accept full responsibility for any breach of copyright that distributing these files or metadata

# may entail. Clicking on the deposit button indicates your agreement to these terms.

#### BRIEF BIOGRAPHY OF AUTHOR



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