The Digital South Asia Library: Electronic Access to Seminal South Asian Resources

Funded by the U.S Department of Education under Title VI, Section 606,
October 1999 through September 2002

ABSTRACT

APPLICANT

The Center for Research Libraries
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TITLE OF PROJECT

The Digital South Asia Library: Electronic Access to Seminal South Asian Resources

PROJECT DIRECTOR

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FUNDING REQUESTED

$223,841 for the first year
$223,113 for the second year
$217,220 for the third year

PROJECT DATES

Oct. 1, 1999 - Sept. 30, 2000 (first year)
Oct. 1, 2000 - Sept. 30, 2001 (second year)
Oct. 1, 2001 - Sept. 30, 2002 (third year)

ABSTRACT OF PROPOSED PROJECT

Overview of the Project

In order to maintain and improve access to vital resources for the study of South Asia, the Center for Research Libraries proposes a three-year collaborative project to deliver digital research materials to users both in the United States and throughout the world via the Internet. It has become increasingly evident that in an era of static or decreasing budgets research libraries will need to develop innovative and collaborative strategies in order to acquire and maintain the resources necessary for research. In no area of study is this necessity more apparent than in the case of South Asia. Given the size and diversity of interest, both inside and outside of academia, it is clear that cooperative acquisition alone can not provide readers with the increasingly vital materials in South Asian regional languages or certain highly sought after resources in an effective or timely fashion. Building upon a successful two-year pilot project, the Digital South Asia Library (DSAL), funded by the Association of Research Libraries' Global Resources Program and the Andrew W. Mellon Foundation, the CRL proposes that the DSAL will expand to provide over the internet: 1) full-text documents such as select journals, pedagogical resources, statistical data and government documents; 2) electronic images such as maps and photographs; and 3) indexes to select journals in the regional languages of South Asia. Through the DSAL academic researchers, business leaders, public officials and citizens in general will be able to find and receive from overseas by the Internet essential materials concerning South Asia not now accessible in the U.S.

Authorized Activities

The DSAL includes all seven of the "authorized activities" outlined in the legislation providing for this grant. The DSAL will facilitate access to resources for the study of South Asia from both the subcontinent and elsewhere by producing an electronic index of select journals in South Asian languages, a bibliographic database of official government publications, an index of the Oriental and India Office's collection of approximately 250,000 historical photographs, and a searchable database of the cartographic holdings concerning South Asia in the British Library. These access tools will be produced with the collaboration of institutions and consortia in the U.S., South Asia, and the U.K.

The DSAL will also directly deliver documents in South Asia identified from the aforementioned access tools through the Internet to readers in the U.S. and elsewhere. For a select number of South Asian journals the DSAL proposes to provide full-text versions accessible over the Web. Similarly, the DSAL will develop a site for full-text versions of parliamentary debates from South Asia. In addition, key statistical data, selected maps, and selected photographic images will also be available for immediate downloading to readers through the DSAL. In order to assist teachers of less commonly taught South Asian languages the DSAL proposes to digitize a number of text-books, grammars and readers previously created with government support as well as number of dictionaries and paleographic guides. For still other material identified by the use of the access tools of the DSAL, microfilm or paper copies will be scanned with the cooperation of institutions in South Asia and elsewhere to create electronic files for transmission to patrons. At the same time, the DSAL will identify documents in need of preservation microfilming to be carried out by collaborating consortia such as the South Asian Microforms Project.

In order to accomplish these goals the DSAL proposes to use not only existing software and technology, such as Ariel for windows and the Mekel Microfilm Scanner system, that comport to existing international standards but also to create new software. In collaboration with ARTFL (American and French Research on the Treasury of the French Language), a leader in developing digital technologies for library initiatives, the DSAL proposes to create software that allows the linking of statistical data with cartographic images to create innovative visual representations. Furthermore, the DSAL will use the experience of ARTFL to continue implementation of the Unicode encoding standard as means of displaying texts in the numerous scripts of the regional languages in South Asia. For all of its proposals, the DSAL will build upon a network of established collaborative relationships with institutions in the U.S., the sub-continent, and Europe.

Need and Significance

As a site of major civilization for more than four thousand years, South Asia continues to comprise an enormous geographical and intellectual domain representing more than twenty-percent of world's population. More than forty years of sustained government support for language training and acquisitions has produced a sizeable body of informed scholars whose contributions to the study of South Asia have been unmatched outside the subcontinent itself. The Association of Asian Studies lists more than 760 members with South Asia as a major focus of academic interest. The number of American citizens tracing their heritage to the subcontinent is increasing so that in 1990 one in every two hundred Americans identified themselves as having ancestors from the sub-continent. With government funding for acquisitions through the Library of Congress ending this year, a consortia of U.S. research libraries are collaborating to ensure that the aggregate national collection of South Asian resources remains strong. However, with interest increasing and the number of publications proliferating rapidly the inherent dependence of cooperative acquisition upon inter-library loan can not adequately meet the needs for certain core materials or the less widely collected material in regional languages. The DSAL proposes to meet the challenge outlined above as well as achieve improved levels of coverage by providing electronic access to seminal resources from the subcontinent for the study of South Asia over the Internet.

Project Design

The DSAL will continue to use the models of collaboration and sustained growth established by the pilot project to increase participation in the project with the eventual aim of making it a self-sustaining institution. In the U.S. the project will rely upon the experience of the founding institutions of the DSAL pilot project, the University of Chicago and Columbia University, together with the Center for Research Libraries and ARTFL to ensure that the commitment to uniform international standards are maintained. The considerable resources and expertise of the British Library will also be invaluable to this project. In the subcontinent two founding members of the DSAL, the Roja Muthiah Library and the Sundarayya Vignana Kendram, will continue to foster cooperation among other South Asian institutions that have pledged their support. Together with its present and future collaborators the DSAL will enlist the aid and advice of prominent scholars in the various disciplines involved in the study of South Asia in order to select materials for inclusion in the project and to evaluate its performance. The DSAL hopes to share its experience and the expertise developed by ARTFL not only with other projects receiving grants under this rubric but also with other research libraries in the hopes of building a "new library movement" in South Asia responsive to local needs and ready to join in international collaborations. The collaborative nature of the project together with its established quality has contributed to its success in garnering offers of support not only from participating research institutions but also charitable foundations.

Resources, Management, and Evaluation

The support requested for the DSAL is modest relative to its benefits. Contributions of staff time and support from the participating institutions have reduced the labor costs. The DSAL will benefit from the expertise of motivated project assistants recruited from the University of Chicago's South Asia Language and Area Center. In addition computing facilities and material infrastructure are already in place in the U.S. Travel expenses will be modest and scheduled to coincide with national South Asia meetings. In the subcontinent, the DSAL has already benefited from the capable administration and technically proficient staff of its partner institutions as well as considerably lower costs for labor and materials. The DSAL will purchase a limited amount of special equipment needed by collaborators in South Asia. A grant from the Department of Education will enhance the likelihood that sister institutions in the subcontinent will also receive support from governments and foundations in the region. Along with the present grant, the DSAL can expect to benefit from future subscriptions and contributions in kind from collaborating institutions, charitable matching funds and the proven-track record of its proposed directors in obtaining and managing grants.

Management and evaluation of the DSAL will be the responsibility of the principal investigator, two co-directors, a project manager, advisory board and selection panel selected under procedures outlined in the main body of this proposal. They will assess the progress and success of the program not only by soliciting evaluations from users but also by an empirical consideration of the costs per transaction as well as a highly specific computer record of resources actually used by patrons.

Conclusion

Building upon an established project of technical collaboration with institutions in the U.S. and elsewhere the DSAL will maintain and augment the resources available for the study of South Asia to the mutual benefit of all concerned. The DSAL will particularly benefit readers with significant and expeditious material with which to continue and expand the body of knowledge on South Asia.

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Introduction

The Center for Research Libraries (CRL) proposes a three-year collaborative project to improve electronic access to vital resources for understanding South Asia. Through this project scholars, public policy officials, business leaders, and other citizens will benefit from an improved electronic information infrastructure and expeditious delivery of digital research materials directly to them from the South Asian subcontinent and England. The Digital South Asia Library (DSAL) project will produce:

1) On-line information about contemporary and historical South Asia – including full-text documents, statistical data, electronic images, cartographic representations, and pedagogical resources for language instruction;

2) Delivery on demand of page images from South Asia, scanned from both paper and microform sources;

3) Internet-based indexes to highly select journals in the regional languages of South Asia;

4) Use of Unicode electronic character encoding for non-roman language data disseminated under the project;[1]

5) An international cooperative venture whose contributing members will include leading universities in the U.S., Britain, and South Asia as well as libraries with a focus on South Asian studies; and

6) A detailed plan of operation for phase three of the Digital South Asia Library.

The Digital South Asia Library (DSAL) described in this proposal builds upon a highly successful two-year pilot project funded by the Association of Research Libraries' Global Resources Program with support from The Andrew W. Mellon Foundation. Encompassing India, Pakistan, Nepal, Bangladesh, Sri Lanka, Bhutan, and the Maldives, the pilot project is the only one funded by the Association of Research

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[1]Unicode is a character-encoding standard. This 16-bit international character code for information processing is established as International Standard ISO/IEC 10646-1;1993. A site on the World Wide Web at

Libraries for South Asia. The second phase of DSAL embodied in this proposed project will

dramatically increase the quantity and the range of research resources available as well as multiply the

number of participants in DSAL. The third phase of DSAL following this proposed project will be

largely self-sustaining, based on membership contributions from universities and individual scholars.

This proposal is being simultaneously presented to The Andrew W. Mellon Foundation for partial

funding of the required matching project support following their expression of "genuine interest in

supporting the project to the level of $50,000 if the Department of Education awards a grant."[2] Other

matching support will be provided by cash and in-kind contributions from CRL, U.S. and overseas

research libraries participating in DSAL, together with philanthropic foundations in the United Kingdom

and South Asia. Proposals are also under preparation to the National Endowment for the Humanities, the

Institute of Museum and Library Services, and the Ford Foundation for the support of activities that

complement those enumerated here.[3]

1)   Meeting the Purpose of the Authorizing Statute

The program detailed in this proposal encompasses all of the authorized activities in the Higher

Education Amendments of 1998, Title VI, Section 606 (20 USC 1126).

"SEC. 606. TECHNOLOGICAL INNOVATION AND COOPERATION FOR FOREIGN INFORMATION ACCESS.
(a) AUTHORITY.—The Secretary is authorized to make grants to institutions of higher education, public or nonprofit private libraries, or consortia of such institutions or libraries, to develop innovative techniques or programs using new electronic technologies to collect, organize, preserve, and widely disseminate information on world regions and countries other than the United States that address our Nation's teaching and research needs in international education and foreign languages."

<http://www.unicode.org/> provides detailed information about the standard. A description of *The Unicode Standard, Version 2.0*, the published manual, is included in Appendix 5.

[2]Based on a telephone conversation and correspondence with Dr. Richard Ekman, Secretary of The Andrew W. Mellon Foundation.

[3]The specific topics addressed in these proposals are: creation of an electronic *Guide to Pakistani Periodical Publications*, an on-line index to current English serial literature in the social sciences and humanities to be submitted to the National Endowment for the Humanities; creation of digital resources for South Asian art historical research and museology to be submitted to the Institute of Museum and Library Services, and creation of a union catalog of nineteenth-century South Asian publications to be submitted to the Ford Foundation.

The Center for Research Libraries, a nonprofit private library, is applying for support on behalf of a consortium of higher education institutions and libraries. With the South Asian subcontinent as the regional focus, the applicant proposes a program to address widely acknowledged teaching and research needs through innovative use of digital technologies. As noted throughout this proposal, the World Wide Web will be used for broad dissemination of new digital resources created for understanding South Asia. Beyond the South Asian focus, this project will also address our larger national needs by hosting a conference, as noted in Section 9, where other projects with Department of Education funding together with projects of the Global Resources Program will jointly evaluate those initiatives. Those at the conference will consider possible synergies between themselves and share plans for future activities.

"(b) AUTHORIZED ACTIVITIES.—Grants under this section may be used—
(1) to facilitate access to or preserve foreign information resources in print or electronic forms;"

The overwhelming majority of activities proposed in Section 4 aim to facilitate access to foreign information resources through carefully focused digitization and indexing.

"(2) to develop new means of immediate, full-text document delivery for information and scholarship from abroad;"

The Internet will be used to its full potential in facilitating full-text delivery of documents created under this project. A distinctive feature of the approach successfully tested under the current pilot phase of the Digital South Asia Library involves direct delivery from India of scanned page images to scholars in the U.S. As described in Section 6, these services will be expanded dramatically with support from the Department of Education.

"(3) to develop new means of shared electronic access to international data;"

One of the new means of access described in Section 4 involves the interconnection of digital data from distinct files to create synergistic results. For example, software will be created that connects statistical data with electronic cartographic files to create new visual representations of information relevant for scholars, policy makers, and businesses.

"(4) to support collaborative projects of indexing, cataloging, and other means of bibliographic access for scholars to important research materials published or distributed outside the United States;"

The wide-ranging collaborative base established for DSAL includes indexing for highly select periodicals, cataloging of vital official publications from South Asia, and access to electronic databases of bibliographic information via the Internet. Specific details are provided in Sections 4 and 6.

"(5) to develop methods for the wide dissemination of resources written in non-Roman language alphabets;"

In Section 6 below, the Digital South Asia Library program is committed to full implementation of the internationally recognized Unicode encoding standard as the means of displaying DSAL texts in the regional scripts of South Asia over the World Wide Web. While this means of text encoding is beginning to be included in standard software packages, it is currently used only rarely for South Asian texts.

"(6) to assist teachers of less commonly taught languages in acquiring, via electronic and other means, materials suitable for classroom use; and"

As enumerated in Sections 4 and 6, pedagogical resources will be made available. Notably, the earlier investments made by the Department of Education in creation of text books for less commonly taught languages will bear further fruit through conversion of selected titles to digital resources. Many of those valuable publications are now difficult to obtain in printed form. Their distribution over the Internet will be an aid to language learners here and abroad.

"(7) to promote collaborative technology based projects in foreign languages, area studies, and international studies among grant recipients under this title."

Collaboration in the use of technology is a hallmark of this proposed program. Evidence of this approach is presented throughout the proposal. The collaborative nature of the enterprise is reflected in the wide array of institutions joined together to enhance language instruction, expand resources for scholarship on South Asia, and improve the position of international studies. Participants in the Digital South Asia Library include leading U.S. universities, the Center for Research Libraries, the South Asia Microform Project, the Committee on South Asian Libraries and Documentation, the Association for

Asian Studies, the Library of Congress, the Asia Society, the British Library, the University of Oxford, the University of Cambridge, MOZHI in India, the Sundarayya Vignana Kendram in India, Madan Puraskar Pustakalaya in Nepal, and other institutions in South Asia. It is also noteworthy that a new American center for South Asian libraries is under creation by the principals in this proposal, as reflected in Appendix 4, and will become a member of the DSAL project.

"(c) APPLICATION.—Each institution or consortium desiring a grant under this section shall submit an application to the Secretary at such time, in such manner, and accompanied by such information and assurances as the Secretary may reasonably require. "

Submitted by the prescribed due date of March 17, 1999, this application includes all of the information and assurances required by the Secretary of Education.

"(d) MATCH REQUIRED.—The Federal share of the total cost of carrying out a program supported by a grant under this section shall not be more than 66$^2/_3$ percent. The non-Federal share of such cost may be provided either in-kind or in cash, and may include contributions from private sector corporations or foundations."

Beyond the narrow expectation of one-third matching funds, the Digital South Asia Library expects to approach a one hundred percent match of Department of Education funding during its three-year term. Section 7 includes a detailed statement on project resources.

2) Need for Project

South Asian studies encompasses the subcontinent which lies south of the Himalayan range and comprises India, Pakistan, Bangladesh, Nepal, Sri Lanka, Bhutan, and the Maldive Islands. This area has been the site of major civilizations since at least 2,500 B.C. Both in geographical area and chronological expanse, the intellectual domain is enormous. The size of the subject is matched by the American contribution to the study of this region. Since 1960 scholars from North America have done more to enhance knowledge of South Asia than their colleagues from any region, save the subcontinent itself. This assessment is based on the number and quality of books and articles written, Ph.D.s awarded, courses taught, and language instruction offered. The growth of knowledge about the region has been supported by forty-one years of funding from the U.S. Department of Education for foreign language and

area training. This sustained support has produced an intelligent and demanding body of scholars and policy makers with demonstrable capacity to use the languages of South Asia and comprehend the nuances of South Asian civilizations. They expect and deserve more extensive and flexible access to electronic resources in order to train succeeding generations of researchers and leaders as well as to further their own inquiries.[4] This project will address that need.

South Asian studies in the United States has historical roots in nineteenth-century philological and religious studies, both focused on classical India. In the aftermath of World War II, however, there was a marked change. The war highlighted America's profound ignorance about the civilizations of South Asia (as well as other world areas) and systematic efforts were made to develop programs of study, first at a few universities, but at many more by the 1960s. These new South Asia programs had distinctive intellectual characteristics and disciplinary orientations that were shaped by founding faculty. Yet, in general, there was a strong emphasis on the social sciences and regional rather than the classical languages.

The **social sciences** have remained vital and continue to attract the interest of new students and of scholars without backgrounds in South Asian studies. Some researchers have been engaged by the writings of South Asian scholars addressing traditional issues such as colonialism from varied perspectives. Others have been interested in more novel approaches to knowledge such as those surrounding popular culture (or public culture), cinema, and gender studies. During this period of economic liberalization and increased foreign investment, economics and political science continue to attract the attention of many. The **humanities** are also vital areas of research related to South Asia. As an example, scholars of regional literatures are writing new histories of the enormous and varied literary traditions in the subcontinent that challenge presuppositions of literary and language boundaries, chronological divisions, nationalism, and canon that undergirded earlier publications.

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[4]Please see Appendix 8 for a succinct statement on the inadequacy of digital resources for South Asian studies,

While most researchers come from a discipline – both as a departmental home and also as a methodological disposition – there is increasing interest in **interdisciplinary studies and trans-regional research** on South Asia. One can point to investigations about the environment, nationalism, human rights, and migration as examples of topics commanding contemporary and future attention. In addition to their wide geographical scope, these inquiries often have a global impact.

The need for this project on South Asia is acutely felt in **research libraries**. This is the first year in which Library of Congress "PL-480 acquisitions program"[5] support of acquisitions from India is no longer available. With static or decreasing acquisitions budgets at many academic libraries, it has been necessary to reduce the number and variety of publications acquired from the subcontinent. More specifically, books and periodicals in South Asia's regional languages are often targeted for sharp reductions. In response to decreased acquisition budgets, consortia of U.S. research libraries are beginning to share collecting responsibilities in order to ensure that the aggregate national collection remains strong. This cooperation entails a greater reliance on inter-library loan. For less commonly consulted publications inter-library loan remains an acceptable alternative to widespread duplication in acquisition. However, for many core resources widespread demand requires alternative solutions that can provide a number of readers with important works in a timely fashion. The direct delivery of selected documents to readers via the Internet as proposed in this project is such an alternative.

Beyond the primary audiences of scholars and policy makers, other important bodies of readers will be well served by the electronic resources prepared and disseminated under the Digital South Asia Library. These include:

- businesses;

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extracted from the 1996 publication *Scholarship, Research Libraries, and Global Publishing.*

[5]The PL-480 acquisitions program in India and Pakistan was begun by the Library of Congress in 1962, using U.S. excess foreign currency funds appropriated under the "Wheat Loan Program." From 1988 through 1998, when they were exhausted, the Indian rupees reserves were administered under the United States-India Fund for Cultural, Educational, and Scientific Cooperation.

- outreach coordinators at National Resource Centers, Centers for International Business Education, and Undergraduate International Studies and Foreign Language programs;

- school teachers;

- governmental and non-governmental organizations (NGOs);

- cultural institutions, especially museums and libraries; and

- media.

Through this project, the needs of a **wide array of U.S. citizens** for ready access to new and unique resources will be met. (Please see Section 3 for examples of how the resources might be used.) They will be able to turn to the project's site on the World Wide Web for free and dependable access to information of the highest accuracy and integrity.

3) Significance

This project achieves significance through **effectively addressing needs** registered by national foundations and associations of scholars and librarians. Funded by The Andrew W. Mellon Foundation, the Association of Research Libraries (ARL)[6] published a review of current problems in scholarly access as well as suggested remedies entitled *Scholarship, Research Libraries, and Global Publishing*. Building on that report, ARL and the Association of American Universities (AAU)[7] inaugurated the Global Resources Program (GRP). Its principal goals are to improve access to international research resources and help libraries contain costs through the creation of cooperative structures, the use of new technologies, and the expansion of international document delivery. Funded by a grant from The Andrew W. Mellon Foundation, the GRP promotes a distributed, interdependent approach to collecting scholarly

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[6]The Association of Research Libraries (ARL) is a not-for-profit membership organization comprising the libraries of 121 North American research institutions and operates as a forum for the exchange of ideas and as an agent for collective action. Membership in ARL is institutional. ARL programs and services promote equitable access to and effective use of recorded knowledge in support of teaching, research, scholarship, and community service.

[7]The Association of American Universities (AAU) was founded in 1900 by a group of fourteen universities offering the Ph.D. degree. The AAU currently consists of 60 North American universities. The Association serves its members by assisting them in developing national policy positions on issues that relate to academic research and graduate and professional education. It also provides members with a forum for discussing a broad range of other institutional issues, such as undergraduate education.

materials from abroad. This approach ensures more focused collection development at individual

institutions resulting in access to a broader array of these often difficult-to-acquire resources. The GRP

coordinates its efforts with those of other libraries and organizations that share common interests with

AAU and ARL. Current GRP regional projects include: the Cooperative African Newspapers Project;

the German Resources Project; the Japan Journal Access Project; the Latin Americanist Research

Resources Project; and the Digital South Asia Library. Please see Appendix 6 for brochures describing

the Global Resources Program and the Digital South Asia Library and the DSAL Web site at

<http://www.lib.uchicago.edu/LibInfo/Subjects/SouthAsia/dsal.html>. As noted earlier, the Digital

South Asia Library pilot project is the only one funded by the Association of Research Libraries for

South Asia. During the pilot project DSAL has developed an Internet-based **infrastructure for

intercontinental electronic document delivery** to and from selected South Asian libraries.

    DSAL's **large target audience will be well served** by the digital resources provided. The

Association for Asian Studies lists more than 760 of its members as having South Asian countries as a

major focus of academic interest. In addition, many members of other scholarly associations have a

primary interest in South Asia -- the American Academy of Religion, the American Political Science

Association, the American Anthropological Association, and the American Oriental Society, to name a

few. Looking to the larger body of citizens, the 1990 U.S. census shows that slightly more than one

million Americans trace their heritage to the cultures of South Asia. DSAL resources will serve

"heritage learners" among this population. Finally, those outside the U.S. will be well served by the

resources freely available over the Internet. It is important to recall that the South Asian subcontinent

encompasses more than 22% of the world's population and that access to the Internet is expanding

rapidly in that region.

    Examples of use by Digital South Asia Library patrons, as identified in Section 2, substantiate the

significance of this project. Scholars in virtually all disciplines of the social sciences and humanities will

be able to consult the DSAL Web site for an array of documents, statistics, images, and bibliographic data supporting their research, teaching, and planning efforts. Drawing on the detailed descriptions of specific sub-projects in Section 4, one can predict the following scenarios of use. Economists and political scientists will use the **periodical indexes** to locate current articles, both in English and in the regional languages, in the on-line *Bibliography of Asian Studies (BAS)*. Thanks to this project a much richer variety of periodicals will be indexed in that pivotal reference resource. Literary scholars will also use the *BAS* for earlier articles, again thanks to this project's retrospective periodical indexing. Once located in the *BAS*, articles in those periodicals not available in the U.S may be requested as scanned images from microfilm or paper copies in South Asia with the images delivered directly to the reader via the Internet.

Beyond the art historical and museological uses of **photographs** scanned from the British Library's collection, anthropologist and historians will consult the finding aids for photographs made accessible under this project to locate images from the Anthropological Survey of India or street scenes of urban India. Professors of art will be able to project pictures of South Asian buildings in class from the DSAL Web site when discussing the architectural heritage of the subcontinent.

Businesses and government policy makers will rely on current data from the **statistical abstracts** of South Asian countries presented with accompanying programs for statistical analysis of the data. Criminologists with interests in jail populations, rates of crime, and size of police forces will be able to query the same abstracts to derive data from as early as 1840. They will then be able to plot the data on **digital maps** by interconnecting the statistics with GIS or "geographical information system" files created under this second phase of DSAL.

Language teachers will be able to direct their students to the **pedagogical resources for instruction in less commonly taught languages**, knowing that the best available materials created under Department of Education grants will have been converted for easy access. The same teaching resources will enable

distance language learning by students not able to meet face-to-face with one of the few U.S. instructors for certain least commonly taught languages. Carefully selected on-line dictionaries will complement the grammars and readers if our complementary proposal to support their conversion is awarded. These language resources will be valued by "heritage learners" as well as others.

News reporters and others in the media will find it easy to consult background articles from **full-text documents** such as the *Economic and Political Weekly* and *India Briefing*.

Systems staff of ARTFL will implement the **project's computational and Web delivery** components in the U.S. ARTFL, an acronym for American and French Research on the Treasury of the French Language, is a University of Chicago program for humanities computing and one of the first large-scale digital libraries developed on the Internet. (Please see Appendix 1 for a detailed statement on the organization and its activities.) ARTFL's involvement will ensure high quality results. Further, it is highly significant that work done under this program will draw upon the body of software previously created by ARTFL thus reducing project expenses. At the same time project funds will support development of new computer algorithms and modes of dissemination over the World Wide Web that will further **augment the software library ARTFL maintains**. The electronic resources created by ARTFL are shared widely throughout academic computing and will therefore serve the needs of a larger audience than this specific project.

Overseas implementation of the project is significant for its method as well as its objectives. The DSAL project builds upon and expands existing cooperative relationships, particularly in the United Kingdom and South Asia. More than a decade of close collaboration between the Center for Research Libraries' South Asia Microform Project, the University of Chicago, and the British Library's Oriental and India Office Collections have led to the preservation on microfilm of nearly 10,000 publications at the British Library. This project will extend that relationship into the realms of digitization and delivery of electronic files – files containing textual, pictorial, cartographic, and bibliographic data – to readers.

While much of this work will be undertaken overseas, multi-directional flow of information is central to the DSAL model. In other words, benefits accrue in South Asia, the U.S., and elsewhere in the world. In addition to the electronic resources on the Web, one is already beginning to see the results in India of DSAL workshops held to train librarians and archivists in preservation and bibliographic access, topics inadequately addressed in university training programs for professionals.

Another element in DSAL's overseas implementation is taking concrete form as this proposal is submitted. As noted above and in Appendix 4, a new American center for South Asian libraries is under creation by the principals in this proposal. At its March meeting, the Board of the Center for Research Libraries approved incorporation of the new center in conjunction with the Digital South Asia Library. This is an extension of CRL's role in developing global resources for scholarship. At the same time, approval by the Board is a clear endorsement of DSAL's national significance.

Effective dissemination of the resulting digital resources and information about the project will enhance the project's significance. The free DSAL Web site will allow readers around the world easy access to the texts, images, and bibliographic data created under this project. The Co-Directors will notify scholarly organizations, libraries, and the general public of progress during the course of this project by means of news notes and articles in relevant scholarly publications, academic news publications such as the *Chronicle of Higher Education*, postings to the listservers for South Asian scholars, and press releases to national news media. We will send information about this project to the all members of the Association for Asian Studies' Committee on South Asian Libraries and Documentation, a group including representatives of all significant North American research libraries with collections on South Asia.[8] Updates on the project will also be sent on a periodic basis to major

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[8]Membership includes: Center for Research Libraries, Columbia University, Cornell University, Duke University, Harvard University, Library of Congress, New York Public Library, Syracuse University, and the universities of British Columbia, California at Berkeley, Chicago, Hawaii, Illinois, Iowa, Michigan, Minnesota, Pennsylvania, Texas at Austin, Toronto, Virginia, Washington, and Wisconsin at Madison.

foreign libraries.[9] James Nye, one of the DSAL Co-Directors and also the Director of the University of

Chicago South Asia Language and Area Center, will keep other Department of Education National

Resource Centers for South Asia informed of progress on this project.

4) Project Design

The project design represented in this proposal for phase two of the Digital South Asia Library builds

on the earlier achievements of DSAL. Begun as a pilot project with two participating U.S. universities

(Chicago and Columbia) and two sister institutions in India (the Roja Muthiah Research Library and the

Sundarayya Vignana Kendram), the program is prepared to expand in a coherent fashion to include a

larger body of participants, encompass a broader array of resources, define prices for membership, and

work with the Center for Research Libraries as a long-term home for DSAL. The project has

successfully employed a model of **sustainable growth** over the past two years. It will continue to use

that model in the future.

As noted in the previous section, DSAL began with ARTFL's involvement in implementing

computing components of the pilot project. The pilot project relied on existing computer programs as

well as the extensive knowledge of Mark Olsen, the ARTFL Assistant Director, and his staff of students.

During the pilot project the experimentation by ARTFL staff with deployment of database information

over the Web expanded expertise at ARTFL. Those techniques and expertise are now available for

future projects.

The two original sister institutions in India will continue to grow under this project, expanding to

provide a larger array of digital resources while also helping to train those at new DSAL sites in the

subcontinent. One of DSAL's fundamental objective is building a "new library movement" in South

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[9]At the minimum this will include: National Library of India, Central Secretariat Library (New Delhi), Nehru Memorial Museum and Library, Indira Gandhi National Centre for the Arts, Shastri Indo-Canadian Institute, Oriental and India Office Collections at the British Library, Bodleian Library, Cambridge University Library, Australian National University, the Südasien-Institut at Universität Heidelberg, Universität zu Köln, Tokyo University for Foreign Studies, Institute of Developing Economies in Tokyo, and the Library of Congress Field Offices in New Delhi and Islamabad.

Asia, a new library movement more responsive to local needs and also more capable of joining in international collaborations.

The Digital South Asia Library project is designed to meet the needs of those identified in Section 2 above. An Advisory Board and a Selection Panel (described in Section 5 below) will ensure that the project receives input from a broad range of users and that the items identified for treatment are those most important for the intended audiences.

A **commitment to international standards** is central to the project's design. For a more detailed statement of those standards, please see Appendix 5 with extracts from relevant Web sites. Where display of text in non-roman characters is required, DSAL will use Unicode. Further, DSAL staff will report to the Unicode Consortium on how the character sets for South Asian languages could be usefully expanded through the inclusion of conjunct characters for a more felicitous display of texts. All electronic resources delivered over the Internet will contain Dublin Core metadata.[10] Where bibliographic files are created the project will follow the USMARC standard for bibliographic records. The Encoded Archival Description (EAD)[11] will be the standard where finding aids are created.

The statutory standard for equitable access under Section 427 of the Department of Education's General Education Provisions Act is met through free dissemination of the project's resources via the Internet and through wide publicity of the availability of the project's Web site. Further, the Center for Research Libraries is an equal opportunity employer and provides equitable access to, and participation in, its programs for students, teachers, and others with special needs. As described in greater detail in Appendix 1, the Center will not discriminate on any basis prohibited by applicable federal, state or local law.

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[10]The Dublin Core is a simple set of descriptive elements used to describe electronic resources and aid in their discovery on the World Wide Web. Dublin Core had its origins as a research project at the Online Computer Library Center (OCLC). Over the past four years this initiative has achieved international consensus on the form for encoding metadata about those resources, becoming a de facto standard. A basic statement on Dublin Core taken from <http://purl.org/DC/> is included in Appendix 5.

[11]A background statement on EAD taken from <http://www.loc.gov/ead/eadback.html> is included in Appendix 5.

Sketches of Constituent Elements

The constituent elements within this proposal include a wide variety of formats and types of

documents. However, those elements can be classified into three broad categories. These categories are:

full-text documents [a through d], **graphics** [e through f], and **bibliographic information** [g]. All of

these categories grow out of the DSAL pilot project which was intended to develop an Internet-based

infrastructure for intercontinental electronic document delivery to and from selected South Asia libraries.

(a) **Full-text Documents.** Collaboration with publishers will include: 1) making the full text of the

Asia Society's *India Briefing*[12] available, except for the current year; 2) experimenting with retrospective

digitization and dissemination of the *Economic and Political Weekly*,[13] and 3) helping develop and

provide mirror sites for the full text of parliamentary debates from South Asian countries. Matching

funds will be requested from The Andrew W. Mellon Foundation.

  (a1) ARTFL will implement these full-text presentations on the Web, drawing on their extensive

    experience with comparable electronic texts. The *India Briefing* is already available as an

    electronic file, so data entry will not be required.

  (a2) Page images of the *Economic and Political Weekly* will be created and the images converted to

    text in India using the same approaches successfully deployed by JSTOR and other similar

    programs providing the full text of periodicals over the Internet. (Please see Appendix 9 for

    information on JSTOR.)

  (a3) DSAL will develop a searchable site similar to "Thomas" <http://thomas.loc.gov/> at the Library

    of Congress with Unicode deployed for display of text in non-roman scripts. Some

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[12]Since its inception in 1987, this publication edited by Dr. Marshall M. Bouton has provided seminal analytic essays on events in India and the South Asian subcontinent, along with an annual chronology. It is a valued source of background information, used by academics, diplomats, and the business community.

[13]The *Economic and Political Weekly*, commonly known as *EPW*, is a pivotal Indian journal for contemporary social scientists, policy makers, and humanists. Editors of the journal have an agreement with the South Asia Microform Project, a member of DSAL, permitting microfilming of the journal. We will seek to expand that agreement to include digitization.

parliamentary debates from South Asian countries are currently available on official Web sites. However, text in regional languages does not display felicitously and the search engines are not robust.

(b) **Pedagogical Resources for Instruction in Less Commonly Taught Languages.** Collaboration with South Asia National Resource Centers in the United States will include: 1) conversion to Web resources of existing grammars and readers created under earlier Department of Education support; 2) creation of electronic paleographic guides for the scripts of South Asia; and 3) preparation of proposals to convert standard dictionaries of South Asia for the modern literary languages to files available via the Web and via file transfer protocol. In-kind matching support is being provided by Columbia University through its creation of an on-line Sanskrit-English dictionary for inclusion on the DSAL Web site.

(b1) Professor C.M. Naim at the University of Chicago has already given permission for DSAL to present an updated version of his highly successful 1965 publication *Readings in Urdu: Prose and Poetry* on the project Web site. Also, Professor Frances Pritchett at Columbia University has given permission for her forthcoming English translation of Muhammad Husain Azad's *Ab-e hayat* to be presented on the Web site with the original Urdu text as one example of a program to provide parallel readers. Other grammars and readers produced at the University of Chicago and Columbia University will be converted first, followed by books produced at other South Asia centers, with preference given to the least commonly taught languages. Notably, many of these titles are out of print. At least eight titles will be converted by keying in South Asia.

(b2) At least three paleographic guides will be converted from paper to electronic resources. The scripts addressed include Grantha, Telugu, and Oriya.[14] Conversion will take place at the Center for Research Libraries.

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[14]Authors have given permission to convert the following texts for access via the Web: *A Primer in Grantha Characters* by K. Venugopalan (1983); *A Primer in Telugu Characters*, by Edward C. Hill (1988); *A Primer in Oriya Characters*, by Purna Chandra Mishra (1999).

(b3) The DSAL Co-Directors will submit a proposal at the end of March 1999 for conversion of

dictionaries in the twenty-eight modern literary languages of South Asia to Web resources.[15]

Mounting these dictionaries with links to the grammars and readers mentioned above will create

a productive arena for modern and classical language instruction over the Internet.

(c) **Official Publications of South Asia.** Collaboration with the British Library, the University of

Oxford, the University of Cambridge, and the Roja Muthiah Research Library will include: 1) creation

of an international union catalog of holdings, covering the earliest seventeenth-century publications

through the contemporary period, and mounting the file as a free resource on the Internet; 2) creation of

full cataloging records for official publications and contributing them to the standard international

cataloging utilities, Online Computer Library Center (OCLC) and Research Libraries Information

Network (RLIN); 3) highly selective retrospective digitization of titles recommended by the DSAL

Selection Panel; and 4) preservation microfilming of selected official publications. The University of

Oxford has requested £120,000 in matching funds for this project from the British Government. An

award is anticipated in May 1999. The University of Chicago and the British Library will provide other

in-kind contributions for cataloging and integration of cataloging records into international bibliographic

utilities.

(c1) A searchable bibliographic database of 23,050 official publications for colonial India is

available at <http://www.lib.uchicago.edu/LibInfo/Subjects/SouthAsia/off-pubs.html>. (The site

was created by ARTFL in 1998.) The period of coverage for that database will be expanded

under this project to encompass publications with imprints from 1947 through the contemporary

period. Statements of international holdings will be augmented through a project of the

University of Oxford titled "Collaborative Collection Management and Associated

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[15]The proposal will be submitted on March 31, 1999 to the International Research and Studies Program at the Department of Education's International Education and Graduate Programs.

Retroconversion Project for South Asian Official Publications." Please see the letter of commitment in Appendix 3 from the Indian Institute Library at the University of Oxford.

(c2) Please see the letter of commitment in Appendix 3 from the British Library covering this and other sub-project.

(c3) Cambridge University Library will donate nearly 9,000 volumes of duplicate official publications of South Asia to the University of Chicago this summer. Selected titles will be digitized in South Asia. Since titles selected may include runs of annual administrative reports, only three titles will be converted.

(c4) The South Asia Microform Project (SAMP), based at the Center for Research Libraries, will create preservation microfilm of at least 300 volumes, with the microfilming work done at the Roja Muthiah Research Library in Madras. This will build on an earlier and highly successful SAMP program to microfilm the Indian land settlement reports held by the British Library. SAMP will be engaged for preservation while DSAL is the vehicle for digital dissemination of selected titles.

(d) **Statistical Data.** Collaboration with governments in South Asian countries will include: 1) conversion of key historical data from the *Statistical Abstract Relating to British India* and its successor publications for presentation as a database available on the Internet along with software resources for interrogating the file; and 2) negotiations with South Asian governments for release of current statistical data in electronic form to be mounted in the countries and mirrored on the DSAL Web site.

(d1) At a minimum, population and area data will be converted for the period 1840 through the present. Determination of which other sections of the statistical abstracts will be converted will be made by the Selection Panel. Conventional double-keying will be used for data entry in India with an error rate not to exceed one in 5,000 characters, as specified by contract.

(d2) DSAL Co-Directors will request that statistical data be made available from each country in South Asia. Where countries are not willing to share electronic information, highly select data will be keyed from printed sources, based on the recommendations of the DSAL Selection Panel.

(e) Cartographic Representations. Collaboration with the British Library will include: 1) selection by the DSAL Selection Panel of at least 200 maps important for the study of South Asia; 2) conversion of the British Library's existing printed catalog of South Asian maps held by the former India Office Library and Records into electronic library cataloging records and a searchable database on the Web; 3) creation of raster and vector maps for the 200 or more selected maps and mounting them on the DSAL Web site; and 4) creation of Web resources for linking DSAL statistical data with vector maps. Contributed time of supervisory staff at the British Library is being provided as in-kind matching support.

(e1) The Selection Panel will identify an array of contemporary and historical maps with different scales of representation.

(e2) The British Library has successfully converted some of their older catalogs of manuscript holdings. Project staff will follow similar procedures to convert the printed catalogs of India Office maps into Encoded Archival Description format, creating approximately 17,000 entries. The British Library's collection of maps on South Asia is one of the finest in the world.

(e3) Raster images of maps will be of research quality, specifically, 300 dpi and 24-bit color. This is the standard adopted by the Library of Congress for its map digitization project. In creating the raster images, staff will take into account the results of the highly successful Oversized Color Image Project at Columbia University under a contract from the Commission on Preservation and Access. The British Library will create these digital images in London using equipment already owned. Additionally, project staff in India will experiment with conversion of selected maps to vector or GIS format. The GIS or "geographical information system" maps will comply with Open GIS Consortium standards as described in Appendix 5.

(e4) ARTFL staff have extensive experience in preparing statistical information for display on the

Web and in connecting statistical and non-statistical data to create new means of understanding

complex phenomena.

(f) **Photographic Images of South Asia.** Collaboration with the British Library will include: 1)

mounting indexes to the Oriental and India Office Collections' approximately 250,000 historical

photographs on the British Library and DSAL Web sites; 2) digitization of at least 500 images selected

by the DSAL Selection Panel and mounting the images on the British Library and DSAL Web sites; and

3) delivery of scanned images on demand from those with existing copy prints at the British Library,

based on requests from users of the Web index. Contributed time of supervisory staff at the British

Library is being provided as in-kind matching support.

(f1) ARTFL staff will convert the indexes at the British Library into a searchable Web resource,

comparable to the one of their creation mentioned in (c1) above. Previous grants to the British

Library from the J. Paul Getty Jr. Charitable Trust and the Leverhulme Trust supported original

compilation of the index file.[16]

(f2) British Library staff will scan images in London from existing copy prints. Staff at a project site

in India will add descriptive metadata to each image file and link the images to the index entries

mentioned above, creating an integrated resource for readers.

(f3) As images are requested British Library staff will scan photographic copy prints, with the digital

images being added to the Web sites in London and the U.S. It will be possible to scan at least

1,000 additional photographs based on requests during the three years of this project.

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[16]Wide dissemination of this index directly responds to recommendation E1 for improved access to visual materials in *Scholarship, instruction, and libraries at the turn of the century: results from five task forces appointed by the American Council of Learned Societies and the Council on Library and Information Resources* (Washington, D.C.: Council on Library and Information Resources, 1999), p. 27.

(g) **Periodical Indexing and Electronic Delivery of Articles.** Collaboration with several libraries in South Asia will include: 1) expansion of the periodical indexing program begun under DSAL's pilot phase with coverage of serials in additional languages; 2) expanded delivery of articles from South Asia via scanning from paper copies and microfilm to create page images; and 3) collaboration with the *Bibliography of Asian Studies* (*BAS*) to produce better services for readers. Matching support is coming from the Global Resources Program and Columbia University's contribution of staff salaries.

(g1) In addition to further indexing of English, Tamil, and Urdu periodicals, already begun under the DSAL pilot phase, the project will expand to index key periodicals in Hindi, Nepali, and Telugu in India and Nepal. Further, the new center for South Asian libraries at the Center for Research Libraries will use some of its resources for collaborative indexing of Bengali periodicals in India. A minimum of 80,000 index entries will be created. Experience under the DSAL pilot project provides confidence that this is a realistic goal for the time and funds requested.

(g2) Project staff in India will use the Mekel Microfilm Scanner system and flatbed scanners to digitize page images for delivery to readers. Source documents will include microfilm and paper copies of periodicals in the collections of South Asian sister libraries. Ariel for Windows will be used for Internet document transmission. The system was devised by the Research Libraries Group for use with commercially available hardware and is increasingly becoming a standard for use by libraries. It permits scanning of articles, photos, and similar documents, and transmission of the resulting electronic images as e-mail attachments.

(g3) A joint initiative with the Association for Asian Studies, the producer of the *Bibliography of Asian Studies* (*BAS*), will result in incorporation of text in Asian languages into the *BAS* database. Further, DSAL staff will assist *BAS* staff in implementing Unicode for delivery of index information in the future (within 2-3 years) and collaborate in developing statistical measures of Web usage. The *BAS* has received major support from the National Endowment for

the Humanities for retrospective conversion of the early printed volumes to create the current on-line *Bibliography*. Its collaboration with DSAL will extend the temporal range and depth of indexing.

5) **Project Personnel**

The **Principal Investigator** and **Co-Directors** have extensive experience managing complex projects with federal and private funding. This is reflected in the brief curricula vitae included in Appendix 1 for Donald Simpson at the Center for Research Libraries, the Principal Investigator, and James Nye at the University of Chicago and David Magier at Columbia University, the two Co-Directors. Their aggregate experience includes direct engagement with many of the most significant digital library initiatives over the past five years, both at the level of program formulation for national bodies and management of specific projects. They hold positions of leadership on major domestic and international bodies related to area studies scholarship and librarianship. Nye has been at the University of Chicago since 1984. Magier has been at Columbia University since 1987. Both are active in South Asian studies through participation in organizations such as the Association for Asian Studies, the American Oriental Society, the American Institute of Indian Studies, and the American Institute of Pakistan Studies as well as the library profession through the Committee on South Asian Libraries and Documentation and the American Library Association. Each will commit 10% of his time to the project. The Digital South Asia Library will be well entrusted to their leadership.

As noted in the preceding Section, both an **Advisory Board** and a **Selection Panel** will be constituted to ensure that decisions made during the course of the project are well matched with expectations of users. The Principal Investigator and Co-Directors will prepare a preliminary list of possible appointees to the two bodies. Those lists will contain names of respected South Asia scholars from the social sciences and humanities who make active use of project resources in their research along with representatives of other audiences targeted as users of DSAL resources. Final selection of the panel

will be made by the South Asia Council of the Association for Asian Studies. The British Library will appoint an additional member to each body in recognition of the central role played by that institution in this collaborative project.

A full-time **Project Manager** will be appointed by the Principal Investigator in consultation with the Co-Directors after a national search. Chief characteristics of the successful candidate will include academic knowledge of South Asian studies, proven skills as an administrator, and broad exposure to library needs. The Manager's responsibilities are enumerated in the Management Plan in Section 8, below.

Among the **colleagues in England and South Asia** collaborating on this project are: Graham Shaw, the Deputy Director of the Oriental and India Office Collections at the British Library; Dr. Gillian Evison, Director of the Indian Institution Library at Oxford University; Dr. Craig Jamieson, of the Oriental Department at Cambridge University Library; S. Theodore Baskaran, Director of the Roja Muthiah Research Library in Madras; and Dr. Atlury Murali, Senior Reader in History at the University of Hyderabad and at the Sundarayya Vignana Kendram in Hyderabad.

Computer programming and implementation of Web delivery of the project's resources will be the responsibility of ARTFL. As noted in Sections 3 and 4 above and in Appendix 1, ARTFL at the University of Chicago is a leader in developing large-scale digital technologies for library initiatives on the World Wide Web. This collaboration extends several years of fruitful engagement between South Asian scholars at Chicago and ARTFL. An average of .5 FTE will be committed over the duration of the project.

One full-time equivalent of **project assistants** in the U.S will be recruited from among graduate students in the University of Chicago's South Asia Language and Area Center. Students with advanced training in the regional languages of South Asia will assist with resources in the languages and scripts of

the region, collaborate with computer programmers from ARTFL, and perform other work as assigned by the Project Manager.

6) Project Services

Project services will be presented to readers in a effective manner because, as noted elsewhere in this proposal, there are few other groups of computer programmers as capable as ARTFL in delivering Digital South Asia Library resources to readers over the Internet. They are leaders in the development of new technologies for dissemination of scholarly knowledge in the social sciences and humanities. Services developed by ARTFL are consistently well suited to the needs of users because ARTFL staff members are themselves both scholars with research interests and highly skilled programmers.

The DSAL Web site will be both a service and a means of accessing services. Programmers will deploy the latest technologies for the project's electronic databases and Web pages. This will include experimentation with voice synthesizers connected to Web browsers, permitting the blind to "read" the contents of DSAL resources on the Internet. We also expect the Web site to be implemented with programming capable of detecting the type of browser used by a remote client and automatically delivering data in a fashion suited to that client.

The Web site will be a free service on which resources created under this project are accumulated. It will be possible to view documents while connected as well as retrieve documents via conventional file transfer protocols.

7) Project Resources

The **support requested** for this project **is modest relative to its benefits**. This is in large measure due to contributions by the Center for Research Libraries, University of Chicago, Columbia University, and other members of the Digital South Asia Library. There will be no charge for bibliographers' time or for material infrastructure. In the U.S., the project will use computer facilities and other resources already in place at CRL, Chicago, and Columbia. Travel expenses are extremely modest because

meetings of the Advisory Board and Selection Panel will be combined with national South Asia meetings.

Conducting digitization work in collaboration with institutions in South Asia is prudent and productive. Evidence for this assertion is based on extensive previous experience at the University of Chicago in comparable projects. First, administrative staff in India at the local institutions selected as collaborating partners have proven highly efficient and professional. Second, work by staff engaged and trained for technical activities is of high quality. Third, there are many individuals with the requisite language expertise in the pool of potential employees. Fourth, the expense of salaries for staff in South Asia is considerably lower than that in the U.S. And, fifth, this collaboration with colleagues in the subcontinent provides benefits to both parties, enhancing cooperation between the U.S. and South Asia and serving as a model for other projects.

The Center for Research Libraries and ARTFL have a robust base of Web equipment already installed. There will be no charge for the use of those facilities. Much of the expense for the Indian sites, including basic electronic equipment, has already been met by other grants and by contributions from U.S. universities participating in the program. It is anticipated that other donations of hardware and software from local philanthropic organizations in South Asia will be received during the duration of this grant. In fact, a grant from the Department of Education will improve the visibility of programs in the subcontinent and enhance the likelihood of successful appeals for support by our sister institutions in the region. DSAL will purchase a limited amount of special equipment needed to accomplish the specific objectives of this project.

The **potential for continued support is great**, from future grants and from membership fees and subscriptions. During three-year grant from the Department of Education, the Co-Directors will, at minimum, approach the National Endowment for the Humanities Preservation and Access Division, the Institute of Museum and Library Services, and the Ford Foundation for grants. As noted earlier, the

specific topics addressed in these proposals are: creation of a *Guide to Pakistani Periodical Publications* as an on-line index to current English serial literature in the social sciences and humanities (National Endowment for the Humanities); creation of digital resources for South Asian art historical research and museology (Institute of Museum and Library Services); and creation of a union catalog of nineteenth-century South Asian publications (Ford Foundation). The Co-Directors have had excellent records of success in applications to these funding agencies.

DSAL will establish modest membership fees and subscriptions before the end of this grant. Fees assessed to U.S. member institutions will be on a sliding scale to encourage participation by smaller institutions as well as larger ones. Additionally, the Advisory Board will evaluate the impact of cost-recovery charges for access to certain DSAL services by individuals at non-member institutions.

There are several **objectives of the next phase**. First is establishment of new priorities for creation and delivery of a broader range of documents. Expanded participation by colleagues in South Asia when setting priorities for the next phase may lead to inclusion of scholarly resources beyond those needed for area studies research in the subcontinent. For example, electronic publications in the sciences may be delivered from the U.S. to select partners in India. The second objective will be re-evaluation of the technology used during DSAL's second phase. Third, the project will expand our strategic alliances to include locations in other South Asian countries and more North American participants in the Digital South Asia Library program. In expanding the alliances, we will explore models for making the Digital South Asia Library program economically self-sustaining. Statistical data from the project will be analyzed to determine if the fees assessed for services are adequate to ensure the long-term survival of the program. By the time the third phase is inaugurated we expect that the Center for South Asian Libraries mentioned in Appendix 4 will be a fully constituted body and a major contributor in the creation of digital resources for DSAL.

Examples of projects already under consideration for the third phase of DSAL include the following

categories:

Full-text

- Creation of an archive for electronic full-texts of newspapers from South Asia, drawing on publishers photocompositor tapes rather than the highly truncated texts now provided on the Web;

- Collaboration with Columbia International Affairs Online (CIAO) to expand the range of working papers on South Asia at <http://www.columbia.edu/cu/cup/ciao/>, with a special emphasis on NGO reports from South Asia on a highly selective basis;

- Collaboration with the Centre for Study of Developing Societies in New Delhi directed by Ashis Nandy for distribution of a database on elections in India;

Images

- Collaboration with museums to provide both data and software of value for art history and museology, such as resources for assessment of stylistic features of art works, databases to assist in determining provenance of specific art objects, software for viewing stereoscopic images over the Web, and so forth;

- Collaboration with the Centre for the Study of Culture and Society in Bangalore directed by Ashish Rajadhyaksha for preparation of a digital archive on cinema and media in South Asia;

Bibliographic
- Creation of a *Guide to Pakistani Periodical Literature* following the approach of the widely acclaimed *Guide to Indian Periodical Literature*;

- Collaboration with the Getty Thesaurus of Geographic Names project <http://www.ahip.getty.edu/vocabulary/about_tgn.html> to add names for South Asia places to the Getty database;

- Establish a comprehensive service on dissertations from South Asia, addressing needs of authors, readers, and libraries with major features including: a pre-thesis site for posting intended thesis topics, finding aids for completed theses (including a union list of holding), an acquisition program for the best theses in paper form for CRL, preservation microfilming, and a delivery system (both via inter-library loan and via the Internet.); and

- Creation of a Web site for information on copyright in each of the South Asian countries to assist digital library projects in making informed decisions about the legal status of resources and describing best practices in working with South Asian publisher and copyright holders.

Considerable previous experience at the Center for Research Libraries, the University of Chicago,

and Columbia University with comparable grants provides a high degree of confidence that the budget

for the project is adequate to support the project activities. Supporting documentation for each relevant budget category is provided in Part II, Budget Documentation.

8) Management Plan

The **Principal Investigator** will have overall administrative responsibility for the project. Along with his staff at the Center for Research Libraries, he will provide fiscal control, arrange for sub-contracts, and make certain that the program proceeds as described in this proposal.

The **Co-Directors** will coordinate activities in England and South Asia with those at the Center for Research Libraries and organize and chair meetings of the project's Advisory Board and Selection Panel.

The full-time **Project Manager** will have overall responsibility for the project's smooth operation on a day-to-day basis. This will include work with the Principle Investigator and Co-Directors in coordinating project activities in the U.S. with those in England and South Asia, monitoring fiscal records, overseeing subcontracted work with ARTFL, and supervision of students employed as project assistants.
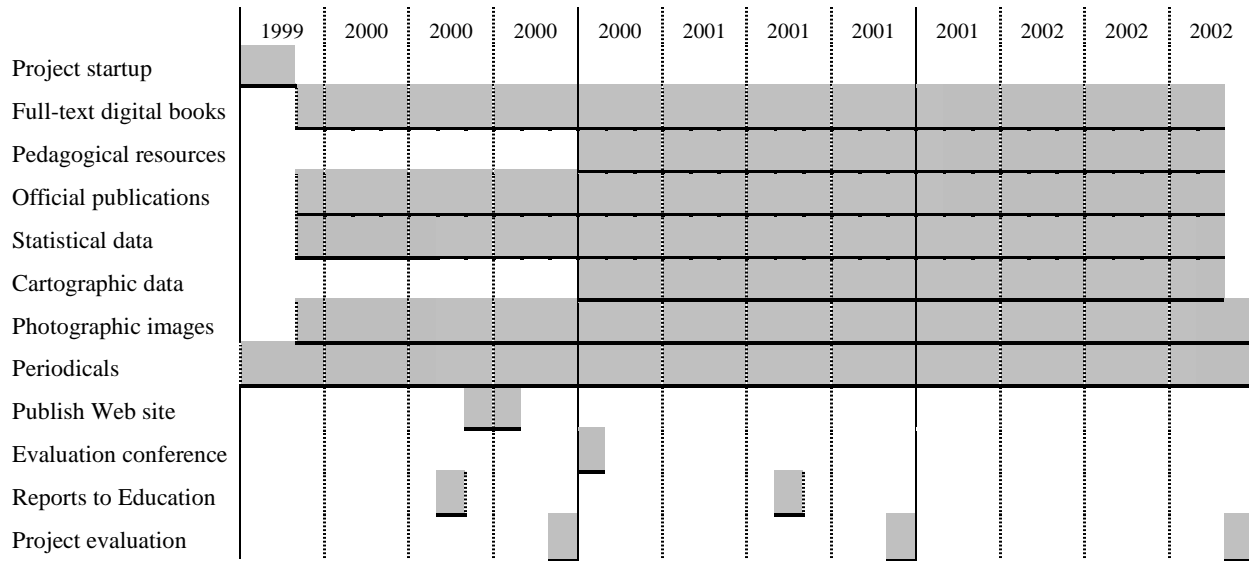
The **Advisory Board** and **Selection Panel** will meet annually in conjunction with the South Asia Conference held each October at the University of Wisconsin, Madison. Comments from these two bodies will be central to project management and evaluation of the project both as it progresses and at its conclusion. The Board's appraisal of costs and benefits will also be crucial for planning DSAL's phase three.

ARTFL will manage the development and implementation of Web resources. Appendix 1 provides a statement of ARTFL's history of success in creation of similar on-line files and maintaining them for use by scholars and the general public.

The following table depicts management of time during the three-year project:

Project Timeline

Year 1				Year 2				Year 3			
Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep

	1999	2000	2000	2000	2000	2001	2001	2001	2001	2002	2002	2002
Project startup	▩											
Full-text digital books		▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Pedagogical resources					▩	▩	▩	▩	▩	▩	▩	▩
Official publications		▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Statistical data		▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Cartographic data					▩	▩	▩	▩	▩	▩	▩	▩
Photographic images		▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Periodicals	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Publish Web site			▩									
Evaluation conference					▩							
Reports to Education			▩			▩						
Project evaluation				▩				▩				▩

9) Project Evaluation

Preliminary evaluations will be done at the end of the first and second years with **final evaluation** of the Digital South Asia Library Project to follow in September 2002. Members of the Advisory Board will assess the quality of electronic resources produced and disseminated under this project, review observations by librarians at the Indian sister institutions, consider comments gathered from scholars who used the project's web site and document delivery service, and examine costs associated with preparation and delivery of electronic information in conjunction with statistics on use of the resources. The Board will evaluate costs and benefits as well as any systematic problems encountered during the pilot project. They will also be charged to assess annual progress toward self-sustaining status for DSAL. Nye and Magier will organize observations of the Advisory Board into a final project report for distribution to the Department of Education and Board members and for mounting on the project web page. The interim evaluations and final report on the project will be central elements in planning subsequent phases of the project.

In **assessing usage of information** made available under this project we will use the widely endorsed "Guidelines for Statistical Measures of Usage of Web-Based Indexed, Abstracted, and Full Text

Resources"[17] prepared by the International Coalition of Library Consortia (ICOLC), a group that currently comprises over 90 library consortia. Expanding upon an earlier report by the JSTOR Web Statistics Task Force, the ICOLC statement was prepared to provide an international perspective on preferred practices in the licensing and purchasing of electronic information. Through the implementation of these Guidelines in this project we will be able to analyze use and frequency of use without violating an individual's privacy. It will also be possible to provide much more subtle interpretations of usage than could be achieved through reliance on crude counts of "hits" on Web sites. The guidelines cover queries (searches), menu selections, sessions or logins, instances of users turned away due to simultaneous user limits, and items examined. Other topics addressed include user, institutional, and consortium confidentiality; comparative statistics; and secure access to statistical reports via the World Wide Web. Along with assisting the evaluation of this project, statistics gathered under the ICOLC Guidelines will also provide member institutions in DSAL with data to assess the benefits of membership in the consortium.

Communication and collaboration between digital international studies projects is a major desideratum that will be considered in evaluating those projects. The Digital South Asia Library project will initiate formal communication between projects funded under Title VI, Section 606 and those supported under the Association of Research Libraries' Global Resources Program. This communication will serve the purposes of shared evaluation, exploration of synergies between the projects, and shared planning for sustained activities after project funding. DSAL expects to host a conference early in the second year of this project to assess progress made by each funded project. Initial discussions are underway with Dr. Deborah Jakubs, the Director of the Global Resources Program, and two projects funded under that program toward organizing such a conference. Two representatives from each of the Department of Education projects will be invited along with two representatives from each of the Global

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[17] The complete Guidelines, taken from the URL <http://www.library.yale.edu/consortia>, are reproduced in

Resources Program projects with support from that body. A formal proposal will be presented to Dr.

Jakubs for partial support of the conference if DSAL is funded by the Department of Education.

Furthermore, DSAL will maintain a public Web site with information on developments of all these

projects and links to the relevant project Internet resources.

Appendix 3 below.

Appendix 1.   Institutional Context

The Center for Research Libraries

Mission and functions of the Center

   The Center for Research Libraries (CRL) is a not-for-profit corporation established and operated by scholarly and research institutions to strengthen the library and information resources for research and to enhance the accessibility of those resources.

   Founded in 1949, the Center functions as a cooperative, membership based research library dedicated to acquiring, storing, preserving, providing bibliographic access to and lending/delivery from a collection that complements and supplements the local collections of the major research libraries of North America. Through its programs, the Center supports individual member libraries in meeting their local users' needs for research materials.

   The Center derives approximately 90 percent of its general operating budget from annual membership fees. These fees are assessed, in part, on the basis of each member's collection size, acquisition budget, and binding expenditures. Currently, more than 170 institutions in North America are members of CRL. (A list of member institutions is appended.) The Center also administers six special microfilm projects that have participants throughout the world, which are supported primarily by subscription fees and other funding agencies.

The Center's collections

   The Center's collections of 3.7 million volumes and 1.2 million microforms originally developed from member library deposits of infrequently-used research materials. These collections are now actively managed and developed through an energetic acquisition program to develop resources in support of advanced scholarly research. The collection is comprised of five component programs:
- Global Newspapers, consisting of 6,100 foreign titles and 2,100 U.S. titles, including historically important ethnic press materials;
- International Doctoral Dissertations – More than 700,000 titles from universities outside North America, among the largest collections in the world;
- Area Studies, supporting microfilming of rare and endangered materials held in Africa, the Middle East, East Asia, South Asia, Southeast Asia, and Eastern Europe, with copies of the resulting film available for loan at CRL;
- Scholarly Journals – 13,000 current titles and more than 30,000 retrospective titles from outside the U.S. especially those dealing with scientific and technical subjects;
- Subject Collections – Specialized publications dealing with a variety of areas including major microfilm sets, governmental and personal archives, publications from state governments, and historical collections including textbooks and college catalogs.

The Center staff

   The current staff size is 56 full time equivalent (FTE) permanent positions including 24.5 FTE professional staff and 11.5 FTE student assistants. Because the Center is an independent, freestanding organization, it employs its own physical plant, personnel, and accounting staff. As a cooperative membership-based organization, the Center also maintains an administrative staff to support governance and membership activities.

   The library operational units are technical services (cataloging and serials), user services (interlibrary loan, circulation, and public information services), and collection resources (stack management, acquisitions, and collection management), but do not include a reference staff or selectors. The Center's collection development policy is designed and written by the membership through a structure of committees and advisory panels, and implemented by the collection resources staff.

Appendix 1.   Institutional Context (cont.)

Policies governing use of the Center's materials

Information regarding the Center's holdings is made available to scholars through various on-line databases and printed guides. CRLCATALOG, the on-line public access catalog of the Center, is accessible through the Center's Web site <http://wwwcrl.uchicago.edu> on the Internet. CRLCATALOG includes authority and bibliographic records for virtually all titles in the Center's cataloged collections: monographs, newspapers, serials, archival materials in microform, microform sets and title analytics.

The Web site also contains searchable databases for specific collections at CRL. Currently these databases cover foreign newspaper holdings, ethnic press titles, newsletters from the CCC camps, and current serials received from the states of the former Soviet Union. Other databases will be added to this group during the coming year. Information about cataloged serials, newspapers, monographs, and microform sets are also entered into the OCLC database (the Center's OCLC symbol is CRL) and the RLIN database (the Center's RLIN library identifier is ILRC). Some libraries also incorporate the Center's records in their own on-line catalogs.

The Center's Handbook is a descriptive guide to all of the Center's collection, including collections that are not cataloged by policy. It is arranged by subject, defines the scope of each collection component, and indicates which materials are cataloged. A list of Center publications, bibliographies, and guides is appended. An electronic version of the handbook is also available at the CRL Web site.

Physical access to the Center's materials is achieved primarily through interlibrary loan, and, to a lesser extent, use of the materials at the Center. Through their local library, researchers at member institutions can borrow an unlimited amount of materials for an indefinite length of time. These liberal terms of loan are intended to serve patrons working on projects requiring extensive research.

Interlibrary loan requests can be transmitted to the Center via the OCLC and RLIN ILL subsystems, CLASS OnTyme, Internet, Envoy (for Canadian libraries), telephone, telefacsimile, and mail. The Center will provide a photocopy of an article or other portion of a work when copyright compliance is indicated on the request. Also the Center will transmit photocopies via fax to improve delivery time. Fax delivery is a routine service for which there is no extra charge to members.

Under its demand purchase program, the Center will consider acquiring materials in the following categories in response to a member library's interlibrary loan request:

- archival materials in microform that record the activities of national governments;
- doctoral dissertations written at institutions outside the United States and Canada;
- newspapers in microform that add to the file of a title to which the Center currently subscribes.

The Center delivered 75,000 items from its collections in response to 44,000 interlibrary loan requests during the fiscal year 1997/98. Most interlibrary loan uses of the Center's collections are by its member institutions. Libraries that are not Center members can also borrow materials, although cost recovery fees and use limitations are imposed. Researchers from both member and non-member libraries have free and unrestricted access to materials used in the Center's reading room; in 1997/98, 565 reading room requests were processed. The Center's reading room is open Monday to Friday, 9:00 AM to 5:00 PM.

Statement of non-discrimination

The Center for Research Libraries is an equal opportunity employer: hiring, promotions and transfers, and other aspects of the employment relationships are conducted on the basis of skill, qualifications, and performance without regard for race, color, religion, sex, national origin, ancestry, age, marital status, unfavorable discharge from military service unrelated to ability to perform the job, sexual preference, mental or physical handicap. The Center will not discriminate on any other basis prohibited by applicable federal, state or local law.

The Center also takes affirmative action to ensure equal employment opportunities. A copy of the Center's Affirmative Action Program for its current fiscal year is kept on file in the office of the Director of Administration and is available for inspection upon request.

Appendix 1.   Institutional Context (cont.)

**The Center for Research Libraries
Member Institutions
As of 03/1/99**

Voting Members   (95)

University of Akron
University of Alabama
University of Alberta
University of Arizona
Arizona State University
Brigham Young University
University of British Columbia
Brown University
University of Calgary*
University of California, Berkeley
University of California, Davis
University of California, Irvine
University of California, Los Angeles
University of California, Riverside
University of California, San Diego
University of California, Santa Barbara
University of California, Santa Cruz
University of Chicago
University of Cincinnati
The Claremont Colleges
University of Colorado
Columbia University
Cornell University
University of Delaware
Duke University
Emory University
University of Florida
Florida State University
University of Georgia
Harvard University
University of Houston
University of Illinois at Chicago

University of Illinois at Urbana-Champaign
Indiana University
University of Iowa
Iowa State University
University of Kansas
Kansas State University
Kent State University
University of Kentucky
Loyola University of Chicago
University of Maryland at College Park
University of Massachusetts, Amherst
McGill University
University of Miami
Miami University of Ohio
University of Michigan
Michigan State University
University of Minnesota-Twin Cities
University of Missouri-Columbia
University of Missouri-Kansas City
New York Public Library
New York University
SUNY-Albany
SUNY-Binghamton
SUNY-Buffalo
SUNY-Stony Brook
North Carolina State University
University of North Carolina at Chapel
    Hill
Northern Illinois University
Northwestern University
University of Notre Dame
Ohio State University

Ohio University
OhioLINK
University of Oregon
University of Oklahoma
Oregon State University
Penn State University
Princeton University
Purdue University
Rice University
University of Rochester
Rutgers University
University of South Carolina
University of Southern California
Southern Illinois University
Southern Methodist University
University of Tennessee
University of Texas-Austin
Texas Tech University
University of Toronto
Tulane University
University of Utah
Utah State University
Vanderbilt University
University of Vermont
Virginia Commonwealth University
University of Virginia
Washington University
University of Washington
Washington State University
Western Michigan University
University of Wisconsin-Madison
Yale University

Associate Members   (35)

Amoco Corporation
Bowling Green State University
Brandeis University
Carleton University
Carnegie Mellon University
Case Western Reserve University
CUNY Graduate Center
College of William and Mary
University of Dayton
Florida Atlantic University
Florida International University
George Mason University

Indiana State University
Indiana University of Pennsylvania
Lake Forest College
Marquette University
University of Mississippi
University of Missouri-St. Louis
National Humanities Center
University of North Texas
Old Dominion University
University of Ottawa
Portland State University
Princeton Theological Seminary

Research Libraries Group, Inc. (RLG)
Nitze School of Advanced Int'l Studies at
    Johns Hopkins University
Southwest Missouri State University
University of Texas – San Antonio*
Truman State University
U.S. EPA
Urbana Free Library
Valparaiso University
Western Kentucky University
State Historical Society of Wisconsin
Wright State University

Group Members (46)

Belmont Technical College
Capital University
Cedarville College
Central Ohio Technical College
Central State University
Cincinnati State Technical and Community
    College
Clark State Comm. College
Cleveland State University
College of Mount St. Joseph
College of Wooster
Columbus State Comm. College
Cuyahoga Community College
Denison University
Edison Community College
Hiram College

Jefferson Comm. College
Hocking College
Kenyon College
Lakeland Community College
Lima Technical College (OSU)
Lorain Community College
Marion Technical College (OSU)
Medical College of Ohio
Mt. Vernon Nazarene College
Muskingum Technical College (OU)
North Central Technical College
Northeastern Ohio Universities College of
    Medicine
Northwest State Comm. College
Oberlin College
Ohio Dominican College

Ohio Northern University
Ohio Wesleyan University
Owens Community College
Rio Grande Community College
Shawnee State University
Sinclair Community College
Southern State Community College
Stark State Community College
State Library of Ohio
Terra Community College
University of Toledo
Ursuline College
Washington State Community College
Wittenberg College
Xavier University
Youngstown State University

Affiliate Members   (2)

Association of Research Libraries (ARL)
OCLC Online Computer Library Center Inc.

Appendix 1.   Institutional Context (cont.)

The ARTFL Project at the University of Chicago

ARTFL is an acronym for American and French Research on the Treasury of the French Language and is regularly applied to the following three entities: 1) the ARTFL Project which is a cooperative enterprise established in 1981 by the University of Chicago and the French *Centre National de la Recherche Scientifique* (CNRS); 2) the ARTFL database which consists of many thousands of French texts ranging from classic works of literature to non-fiction prose and technical writing originally assembled to prepare a new French historical dictionary; 3) and the ARTFL system developed at the University of Chicago, which is a suite of software for sophisticated indexing, retrieval, and linguistic analysis.

ARTFL as such was among the first large-scale digital libraries developed on the Internet. From its inception in 1981, the ARTFL Project has provided users in North America with exclusively networked-based access to its resources. Well before the appearance of the World Wide Web, ARTFL developed Internet-based client-server access mechanisms (named PhiloLogic). Given ARTFL's experience with Internet-based client-server technology, the Project was able to adapt very quickly to WWW technology as it appeared and began to extend the basic systems to serve the hypertextual and hypermedia capacities afforded by WWW infrastructure. ARTFL provides access to its non-public domain collections through a consortium of 160 subscribing educational institutions in North America. The system handles well over one million queries a month.

The ARTFL Project has a prominent position in the national academic community. Both through its main database and its more recent undertakings such as the development of Diderot and d'Alembert's eighteenth century *Encyclopédie*, ARTFL has become a standard, indispensable reference for scholars and students in a broad range of fields. Results from the ARTFL Project and its technology are featured prominently in a number of important publications, including Keith Baker's *Inventing the French Revolution: Essays on French Political Culture in the Eighteenth Century* (Cambridge, 1990), Liah Greenfeld's *Nationalism : Five Roads to Modernity* (Cambridge, Mass., 1992), Daniel Gordon's *Citizens without Sovereignty: Equality and Sociability in French Thought, 1670-1789* (Princeton, 1994), and Joan DeJean's *Ancients against Moderns: Culture Wars and the Making of a Fin de Siècle* (Chicago, 1997).

The national and international reputation of ARTFL is made manifest by the number and range of its collaborative projects. With the CNRS and scholars at the University of Toronto and Universitè de Lyon, the ARTFL Project developed electronic versions of the first (1694) and fifth (1798) editions of the *Dictionnaire de l'Académie Française*. The ARTFL system has also been used to treat materials outside of French studies such as the *Opera del vocabolario italiano*, a database of over 1,000 documents in medieval Italian developed in cooperation with the *Consiglio nazionale delle ricerche* (CNR) in Florence, Italy, the University of Notre Dame, and the University of Reading, England as well as the Swahili-English Dictionary of the Kamusi Project at Yale University and Tamil-English and Hindi-English dictionaries for the CIC at the University of Chicago Library. Also in conjunction with the University of Notre Dame, ARTFL has designed systems to manage large-scale collections of digital images, such as the 12,000 drawings in the Biblioteca Ambrosiana, and interactive video/audio systems for teaching in the *Progetto Italica Corso di Lingua*. Other ARTFL collaborations include work with the Newberry Library, the Center for Research Libraries (CRL), the Smart Museum of Art, and professors at George Washington University, Northwestern University, Princeton University, the University of Minnesota, and the University of Ottawa to mount a variety of full-text and multimedia projects.

The address for ARTFL on the World Wide Web is <http://humanities.uchicago.edu/ARTFL/ARTFL.html>.

Appendix 2.   Curricula Vitae for Key Staff

<u>**CURRICULUM VITAE EXCERPTA**</u>

DONALD B. SIMPSON

President
The Center for Research Libraries
Chicago, Illinois 60637-2804
(773) 955-4545 ext. 335
Fax (773) 955-4339
Internet: simpson@crlmail.uchicago.edu

<u>**CURRENT EXPERIENCE**</u>

1980 - pres   <u>President, The Center for Research Libraries (CRL)</u>: Serves as chief executive officer and voting member of the Board of Directors and Executive Committee; responsible, as the senior management executive, for the leadership, operations and financial affairs, including a 5.6 million volume collection with a $5 million annual budget, a 130,000 sqft. environmentally-sound physical plant and the 85 person professional and support staff, of a 176-member consortium of major research institutions and libraries in North America; served as the Principal Investigator on more than 30 major grant funded projects; manages real estate operations, including all phases of two major building construction projects; acts as principal fund raiser and oversees extensive resource development program, including a Friends group and related social events; designed and oversees a successful marketing and public relations effort, including advocacy for related issues; developed and leads corporate strategic planning, budgeting and business planning processes; principal architect of programs and services; represents the Center worldwide; coordinates and leads an extensive elected officer and voluntary committee and advisory structure doing the work of the organization; provides the technical guidance and oversight for the planning and implementation of computer technology and automation of all Center functions and procedures.

<u>**EDUCATION**</u>

1971 - 1974   Part-time graduate study in Public Administration leading to Doctor of Philosophy, Major in Information Systems, The Ohio State University.
1969 - 1970   Full-time graduate study leading to Master of Science, Major in Library Science, Syracuse University.
1962 - 1964   Full-time undergraduate study leading to Bachelor of Arts, Major in English/Minor in Science, Alfred University.
1961 - 1962   Full-time undergraduate study leading to Associate in Arts, Corning Community College.
1970 - pres   Management, fund raising, library automation, telecommunications, personnel administration, preservation seminars and tutorials at University of California, American Management Associations, A.T.&T., Association of Research Libraries, <u>et al</u>.

<u>**TECHNICAL AND LANGUAGE SKILLS**</u>

Extensive personal computer (both Apple Macintosh and WINDOWS95) knowledge and skills, both hardware and software; working knowledge and teaching experience with major application software for both platforms, Novell and Apple servers; Ethernet, and Token-Ring networking; familiarity with all aspects of Internet interfaces, including email, World Wide Web, telnet, FTP, UNIX servers, fiber optic cable systems, hubs, routers, synchronous and asynchronous communications, etc.
Reading knowledge of Romance languages.
Extensive knowledge and skills in all aspects of library and information provision systems.

Appendix 2.   Curricula Vitae for Key Staff (cont.)

Donald B. Simpson, page 2

RECENT PROFESSIONAL OFFICES AND COMMITTEES

Association of Research Libraries: Joint Committee on Extended Access to the Journal Literature, 1981-83; Committee on Preservation of Research Library Materials, 1989-91; Committee on Research Library Collections, 1992-; oversight for North American Foreign Acquisitions Project, 1990-; member, Developers/Implementers Group, North American Interlibrary Loan/Document Delivery Project, 1993-; member, Foreign Acquisitions Program Strategic Plan Drafting Sub-Committee, 1994-95; chair, Japanese Journals Access Project, 1994-; member, Subcommittee on Electronic Journals Archiving, 1996-.

Dominican University School of Library Science: Advisory Committee, 1983-1991; 1995-.

American Council of Learned Societies: Representative, 1992-; member, Electronic Journals Archiving Committee, 1996-; chair, New Technology Committee, 1997-

Editorial Board, *Journal of Collection Management*, 1995-.

Representative, National Humanities Alliance, 1996-.

Co-contributing Editor, American Historical Association *Perspectives*, 1996-.

RECENT SELECTED SPEECHES AND PUBLICATIONS

"Acquisitions and Distribution of Foreign Language and Area Studies Materials," at MIT Communications Forum, Cambridge, MA, March 16, 1995.

"The Center for Research Libraries, An Historian's Resource," at Pacific Coast Council of British Historians Conference, Sacramento, CA, March 25, 1995.

"The Center for Research Libraries: Cooperative Programs for the 21st Century," A Contributed Paper by Donald B. Simpson and Marlys Rudeen at Third International Conference, Crimea 96, Libraries and Associations in the Transient World: New Technologies and New Forms of Cooperation; Foros Health Resort, Republic of Crimea, Ukraine, June 1-9, 1996.

"Grey Literature: The Challenges for an Increasingly Important Body of Literature" The Inaugural Address to the Second International Conference on Grey Literature, Washington, DC, November 1995

"Advancing Technology: The Secondary Impact on Libraries and Users", in *IFLA Journal*, 10, no.1.

"Electronic Resources" A New Set of Questions," in *Collection Management* (Vol 21 No 1 1996), p. 57-64.

"Exploring Expanded Cooperation between the Research Libraries of Japan and North America," in *Study on Demand and Supply of Japanese Scholarly Information Abroad* (March 1996), p. 69-76.

"Cooperative Collection Development: Significant Trends and Issues" (New York, Haworth Press, 1998) 93 p.

Appendix 2.   Curricula Vitae for Key Staff (cont.)

CURRICULUM VITAE

James H. Nye
Bibliographer for Southern Asia and Director, South Asia Language and Area Center
Joseph Regenstein Library
University of Chicago
1100 East 57th Street
Chicago, Illinois 60637   (773) 702-8430

Degrees:
      BA   Augsburg College, 1968 (philosophy)
      MAR   Yale University, 1970 (history of religions)
      MS   Drexel University, 1974 (library science)
      [PhD]   University of Wisconsin, Madison, comprehensive examinations passed 1982 (South Asian
                  language and literature)

Doctoral Dissertation:
      Granthamala: A Cultural Study of Indological Publishing in Nineteenth- and Twentieth-Century
                  India
            V. Narayana Rao, Thesis Director

Experience:
      1998-to date, Director, South Asia Language and Area Center, University of Chicago, Chicago,
                  Illinois
      1984-to date, Bibliographer for Southern Asia, University of Chicago, Chicago, Illinois
      1974-1984, Librarian II (equivalent to Assistant Professor), Gustavus Adolphus College, St. Peter,
                  Minnesota. Tenured 1979.
            1978-84, Acquisitions and Reference Librarian
            1974-78, Reader's Services Librarian
      1973-to date, Vice President and Editor / Publisher, Musicdata, Inc., Philadelphia, Pennsylvania
      1971-73, Librarian, Community Legal Services, Philadelphia, Pennsylvania

Major Grants, Fellowships, and Honors:
      1997-99, Andrew W. Mellon Foundation via Association of Research Libraries, grant for "The
                  Digital South Asia Library: A Pilot Project," $62,700
      1996-99, Ford Foundation, grant for "Access to Tamil Performance and Folklore Literature,"
                  $250,000
      1995-97, National Endowment for the Humanities, grant for "Access to Early Twentieth-Century
                  Indian Books: Marathi, Gujarati, Sindhi, Konkani, and English," $261,835
      1994-96, U.S. Department of Education, Title II-C, grant for "Tamil Publications for Historical
                  Studies," $287,690
      1994-96, National Endowment for the Humanities, grant for "Preservation and Dissemination of
                  Classical and Medieval Tamil Literature," $198,780
      1992-94, National Endowment for the Humanities, grant for "Microfilming Nineteenth-Century
                  Hindustani Books," $140,000
      1991-94, National Endowment for the Humanities, grant for "Microfilming Nineteenth-Century
                  Hindi Books," $68,860
      1991-94, Kern Foundation, grant for "The Adyar Library / University of Chicago Program," $68,150
      1989-91, National Endowment for the Humanities, grant for "Preservation of Major Indological
                  Series from the South Asian Subcontinent," $262,650
      1989-91, U.S. Department of Education, Title II-C, grant for "Acquisition and Preservation of
                  Indological Series Published in South Asia," $241,310
      1985-88, National Endowment for the Humanities, grant for preparation of *South Asian Books in
                  Series: Sanskrit, Pali, and Prakrit*, $232,000
      1982-83, Junior Fellowship (dissertation research), American Institute of Indian Studies
      1981-82, HEA Title VI National Resource Fellowship for Foreign Language Studies, Hindi
      1974, Beta Phi Mu (national library science honors society)
      1970 (summer), NDEA Title VI Critical Language Fellowship, Hindi / Urdu

Appendix 2.   Curricula Vitae for Key Staff (cont.)

Selected Publications:
>*A Primer in Oriya Characters* (editor), by Purna Chandra Mishra. New Delhi: Manohar Books, forthcoming 1999.
>
>*South Asian Books in Series: Sanskrit, Prakrit, and Pali* edited by James Nye, associate editor Larry DeVries. Preliminary edition, forthcoming 1999.
>
>"Recent South Asia Projects at the University of Chicago and the South Asia Microform Project," *South Asia Library Group Newsletter*, no. 40 (January 1993): 7-13.
>
>"Toward a Sociology of South Asian Book Preservation," in *Planning Modernization and Preservation Programmes for South Asian Libraries*, edited by Kalpana Dasgupta. (National Library conferences, no. 5.) Calcutta: National Library, 1992.
>
>"Textual Information Retrieval and Analysis for Indology," in *Indological Studies and South Asia Bibliography*, edited by Ashin Das Gupta. (National Library Conferences, no. 3.) Calcutta: National Library, 1988.
>
>*A Primer in Telugu Characters* (editor), by Edward C. Hill. New Delhi: Manohar Books, 1988.
>
>*A Primer in Grantha Characters* (editor and publisher), by K. Venugopalan. 1983.
>
>*Sacred Choral Music in Print* and *Secular Choral Music in Print* (editor, with T. Nardone and M. Resnick). Philadelphia: Musicdata, 1974.

Selected Recent Conference Panels, Seminars, and Papers:
>1999, "The Unprofitable World of Preservation Micrographics" invited paper, annual meeting of the Association for Asian Studies
>
>1997, "Preservation Programs for South Asia" invited paper, annual meeting of the American Library Association
>
>1996, "South Asia and the Strategic Plan for Improving Access to Global Information Resources" invited paper for a Presidential session, annual meeting of the Association for Asian Studies
>
>1992, Organizer and Chair, panel on "Nineteenth-Century Publishing and the Creation of Indianness" also included my paper on "Sanskrit Series Publishing: A Nineteenth-Century Move into the Hinterlands," 20th Annual Conference on South Asia, University of Wisconsin, Madison.
>
>1990, "University of Chicago Program for Preservation of Indological Texts" invited paper, National Library of India, Calcutta, Seminar on Library Modernization and Preservation
>
>1989, "Constructing Indianness: Publishing and Culture in South Asia" invited paper, Committee on Southern Asian Studies, University of Chicago
>
>1988, "A Machine-Readable Sanskrit Lexicon" invited paper, Sanskrit Database Conference, University of Texas at Austin, Center for Asian Studies
>
>1985, "Upapuranas and Mahapuranas: Appendix or Appendee?" invited paper, Conference on the Puranas at the University of Wisconsin, Madison, a part of the Festival of India
>
>1984, Organizer and Chair, panel on "Computing and Sanskrit Texts" also included my paper on "Computer Photocomposition of Devanagari Texts in the United States and India" at VIth World Sanskrit Conference, Philadelphia

Memberships and Professional Offices:
>**American Library Association** (Conference panel planning committee, Asia and Africa Section, ACRL, 1989; Area Chairman for South Asia, International Relations Round Table, 1989-1993); **American Oriental Society** (American Committee on South Asian Manuscripts, 1994-to date); **American Pakistan Research Organization**; **Association for Asian Studies** (Committee on South Asian Libraries and Documentation, Executive Committee, 1988-1990; Editor of *South Asia Library Notes and Queries*, 1984-1988); **Microfilming Indian Publications Project**, Steering Committee, 1989-to date; **Nineteenth Century South Asia Short Title Catalog Project**, Steering Committee, 1992-to date; **South Asia Microform Project** (Chair, 1989-1992, 1996-1999; Executive Committee, 1987-1992, 1996-1999; Academic Coordinator for special projects, 1991-to date); **Supervisor for Fulbright Library Interns from India**, six-month internships, 1988, 1989.

Languages:
>Natural: Sanskrit, Hindi, Urdu, French, German
>Programming: SNOBOL, PL/1, Revelation database programming

CURRICULUM VITAE

David S. Magier
South Asia Librarian
304 International Affairs
Columbia University Libraries
New York, NY 10027

212-854-8046
212-854-3834 fax
magier@columbia.edu

EDUCATION:
>   Ph.D. (with Distinction) Linguistics, University of California, Berkeley, CA, 1983
>   dissertation title: *Topics in the Grammar of Marwari*
>   M.A. Linguistics, University of California, Berkeley, CA, 1979
>   B.A. (with Distinction) Linguistics, Cornell University, Ithaca, NY, 1977

PROFESSIONAL EMPLOYMENT:
>   *Director of Area Studies*, Columbia University Libraries, NY, 1989 - present. Line responsibility for the 5 departments of the Area Studies Division (staff of 13). Allocating, coordinating and supervising all activities for research-level area studies collections in Judaica and Middle Eastern, Slavic and East European, Latin American and Iberian, South and Southeast Asian, and African studies. Design and delivery of new online information services and networked resources. Liaison with Columbia's extensive international and area studies programs. Serve on Management Council to plan and coordinate the operation of the entire Columbia Libraries system. Work with regional and national library consortia to devise effective library cooperation and coordination programs.
>   *South and Southeast Asian Studies Librarian*, Columbia University, NY, 1987 - present. Direct responsibility for operation of the South/Southeast Asian Studies Department, and for the assessment, development, maintenance and preservation of the research-level interdisciplinary collections of materials, in all languages and from all regions of the world, on South Asian and Southeast Asian studies, and direct provision of reference, consultation, bibliographic instruction, and electronic information services to these area studies faculty and students. Initiated, designed and maintain at Columbia the World Wide Web Virtual Library for South Asia (SARAI: South Asia Resource Access on the Internet).
>   *Library Internet Training Consultant*, NY Metropolitan Reference and Research Library Agency (METRO), March, 1994 - present. Design and conduct customized intensive hands-on Internet training workshops to fill the Internet needs and information service development plans of librarians at several hundred public, community college and University libraries and agencies.
>   *Adjunct Professor*, Department of Middle East and Asian Languages and Cultures, Columbia University, 1990-1991.
>   *Assistant Professor*, Department of Linguistics & Lang., Michigan State University, 1986-1987.
>   *Field Director*, UC Berkeley Urdu Language Program in Pakistan, 1985-1986. Total responsibility for major program of Urdu instruction for American students residing in Lahore, Pakistan.
>   *Field Director and English Language Consultant*, University Grants Commission, Government of Pakistan, 1984-1985. Developed, implemented and administered English Language Centers and teaching libraries at three universities in Pakistan.
>   *Lecturer*, Department of Linguistics, UC Berkeley, 1984.

MAJOR PRESENTATIONS:
>   "Library collections and access: Supporting global expertise," with Deborah Jakubs. HEA-Title VI-Fulbright/Hayes National Policy Conference, 1997. (Published on the web by ARL).
>   "Clio and the Net: Historians in an Electronic Age," History Section, ALA, 1996.
>   "Digital Libraries: A View from the Third World." 41st Annual International Conference of SALALM (Seminar on Acquisition of Latin American Library Materials), 1996.
>   "Library Collections and the Internet," full-day workshop at Charleston Conference, 1995.
>   "Electronic Resources for the Study of Buddhism," Seminar in Buddhist Studies, 1995.
>   "Cooperative Collection Development: a model for Internet virtual collections," keynote speech, RLG-METRO Selectors Consortium (200 librarians and administrators from Columbia, New York University, New York Public Library, and Rutgers), 1995.
>   "Towards a National Agenda for South Asia Teaching and Research Resources," keynote speech, AAS South Asia Council Conference, Madison, 1994.

Appendix 2.   Curricula Vitae for Key Staff (cont.)

David Magier, page 2

MAJOR PRESENTATIONS (cont.):

"Developing Virtual Collections: a case study of The South Asia Gopher," Symposium on Electronic Projects for Research & Teaching, 23rd Annual Conf. on South Asia, Madison, 1994.

"The process and value of library networking and coordination," Annual Meeting of Library Directors of DELNET (New Delhi consortium of academic and research libraries), 1994.

"Cooperative collection development in the context of competition," AAS Conference on the Future of South Asian Studies, Madison, 1993.

"Library Issues: Budgets and Coordination of Acquisitions," a report to the Working Group on Library Issues (David Magier, Chair), US Dept. of Education, Meeting of Title VI Area Studies National Resource Center Directors, Washington, D.C. April, 1993.

"Electronic Resources for Humanities Research," lecture/workshop, JvNCNet Internet Resources and Applications Symposium at Princeton University, 1993.

NATIONAL COMMITTEES, PROJECTS, MEMBERSHIPS:

Chair, Asian Studies Online Library (an international collaborative project under AAS)

Chair, SAC-East (East Coast S. Asia Library Consortium: Columbia, NY Public Library, U. Pennsylvania, Cornell, Harvard, Syracuse, U. North Carolina, U. Virginia, Library of Congress)

Chair (former), Committee on South Asian Libraries and Documentation (CONSALD)

Chair (former), South Asian Microfilm Project (SAMP)

South East Asian Microform Project (SEAM)

Committee on Research Materials on South East Asia (CORMOSEA)

Chair, CORMOSEA Task Force on Southeast Asian Network Resources

Committee on Publications, Board of Directors, Association for Asian Studies

Bibliography of Asian Studies Advisory Committee

Executive Committee, Rajasthan Studies Group

Association for Asian Studies

Board of Trustees, American Institute of Pakistan Studies (AIPS)

Committee on Publications, American Institute of Indian Studies (AIIS)

FELLOWSHIPS AND AWARDS:

American Institute of Pakistan Studies grant for field research in Lahore, 1985-1986

Fulbright-Hays Doctoral Dissertation Research Abroad grant for field research in India, 1981-1982

Berkeley Urdu Language Program in Pakistan fellowship, Lahore, Pakistan, 1979-1980

Foreign Language Area Studies Fellowships (Hindi and Urdu) 1978-1983

SELECTED PUBLICATIONS:

"The language of the bard," in Ann G. Gold, [1992] A carnival of parting : the tales of King Bharthari and King Gopi Chand as sung and told by Madhu Natisar Nath of Ghatiyali, Rajasthan. Berkeley: University of California Press, 1992. Pp. 335-350.

"Dative/accusative subjects in Marwari," in Manindra Verma, K. P. Mohanan (eds.) [1990] Experiencer Subjects in South Asian Languages. Stanford: Center for the Study of Language & Information, Stanford Univ.

"The Transitivity Prototype: Evidence from Hindi," in Word 38.3:187-199 (1987).

The Semantics of Participant Roles: South Asia and Adjacent Areas. Edited by Arlene Zide, David Magier and Eric Schiller. Bloomington: Indiana University Linguistics Club. 1985.

"Components of Ergativity in Marwari," in Papers from the Nineteenth Regional Meeting of the Chicago Linguistic Society, April 1983.

"Marwari Honorifics," in P.J. Mistry (ed.) Studies in South Asian Languages and Linguistics, South Asian Review 6.3:160-173 (July 1982). South Asian Literary Assoc. (MLA).

Hindi Films for Instructional Purposes [3-volume textbook and materials for teaching Hindi], with Bruce Pray, Satti Khanna. UC Berkeley: Center for South & Southeast Asia Studies, 1980.

LANGUAGES:

Hindi, Urdu, Rajasthani, Spanish

Appendix 3.   Letters of Intention to Collaborate

association for asian studies, inc.

1021 EAST HURON STREET
ANN ARBOR, MI 48104-1628 USA
PHONE: (734) 665-2490
Fax: (734) 665-3801

March 16, 1999

Donald Simpson
President
Center for Research Libraries
6050 South Kenwood Avenue
Chicago, Illinois 60637-2804

Dear Donald,

The Bibliography of Asian Studies Advisory Committee of the Association for Asian
Studies looks forward to collaboration with the Digital South Asia Library and the Center
for Research Libraries as described in your proposal to the U.S. Department of Education.
We hope that it receives support.

Utilization of our publication, the Bibliography of Asian Studies - Online, as the medium
for broad dissemination of records in English and in South Asian languages created under
your proposed project fits well with and enhances the BAS's ability to fulfill its own
mission. This engagement builds on earlier collaboration under the DSAL pilot project
and project Co-Director David Magier's long-term participation in the Advisory
Committee and the Association for Asian Studies Publications Committee.

I might mention as well that as various new bibliographic resources are made available, the
question of standardization of format becomes more and more urgent. We are hopeful
that the good offices of the AAS can be helpful in getting various projects in the Asia field
to collaborate in standardization.

Best wishes for success in your application for funding.

Sincerely,

John Campbell
Secretary-Treasurer

THE BRITISH LIBRARY

Mr James Nye
South Asia Bibliographer
The University of Chicago
The Joseph Regenstein Library
1100 East 57th Street
Chicago
ILLINOIS 60637
USA

ORIENTAL AND INDIA OFFICE
COLLECTIONS

96 EUSTON ROAD
LONDON NW1 2DB
Telephone 0171-412
Fax 0171-412 7641/7858
E-mail oioc-enquiries@bl.uk
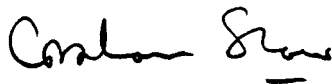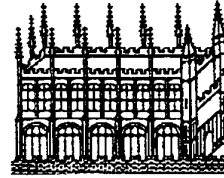
our ref   OIOC/GWS/TJ

your ref

date   8 March 1999

Dear Mr Nye

The British Library's Oriental and India Office Collections will be delighted to collaborate with the Digital South Asia Library and the Center for Research Libraries in its Phase 2 development if your proposal to the US Department of Education is funded.

The proposed joint programme of enhanced access to photographs, maps, and South Asian official publications fits very well with the British Library's new proactive role in seeking to collaborate at both the national and international level. The DSAL programme also builds on earlier and mutually beneficial preservation activities between the British Library and the South Asia Microform Project at the Center for Research Libraries.

The British Library fully supports this exciting initiative and we wish you every success with this application for funding.

Yours sincerely

G W Shaw
Deputy Director

Indian Institute Library
UNIVERSITY OF OXFORD

12ᵗʰ March 1999

Dear Sir/Madam,

I am writing in support of the Center for Research Libraries' proposal for a three-year collaborative project to improve electronic access to resources for understanding South Asia.

The University of Oxford Library is currently applying to the UK Research Support Libraries Programme for a grant of £120,000 to improve electronic access to the UK's holdings of South Asian official publications, in collaboration with other UK libraries with significant holdings in this area. The project will contribute to the DSAL's international union catalog of South Asian official publications and also aims to provide international scholars with information about current acquisitions of South Asian official publications in the UK.

The Oxford University Library bid has the support of the University's Inter-faculty Committee for South Asian Studies and the British Association of South Asian Studies. Both bodies are supportive of any initiatives to improve electronic access and would welcome the expansion of the Digital South Asian Library in the ways indicated in the Center for Research Libraries proposal,

Yours truly,

Dr. Gillian Evison
(Indian Institute Librarian)

Appendix 4.   Description of Proposed Overseas Center for South Asian Libraries

A Center for South Asian Libraries

Overview

    The Center for Research Libraries plans to incorporate a tax-exempt overseas center for South Asian libraries. This center will facilitate scholarly research on South Asia in all academic disciplines through improved preservation of and access to the print, manuscript, and electronic heritage of India, Pakistan, Bangladesh, Nepal, and Sri Lanka and support the exchange of scholarly information. These aims will be accomplished through activities of the center operating in conjunction with organizations and institutions holding similar objectives, AIIS being one of them. The range of activities will overlap with and extend those under the Digital South Asia Library Pilot Project <http://www.lib.uchicago.edu/LibInfo/Subjects/SouthAsia/dsal.html>. As a new American overseas research center, the corporation will apply for membership in CAORC to help achieve these purposes.

What is CAORC?

    The Council of American Overseas Research Centers describes its purposes and activities on its web site <http://www.caorc.org>. Following are extracts from text posted at that location.

        American Overseas Research Centers foster international scholarly exchange, primarily through sponsorship of fellowship programs which allow pre-doctoral and senior scholars to pursue independent research important to the increase of knowledge and to our understanding of foreign cultures.

        These non-governmental institutions are seen by their host countries as the official arm of American higher learning. The private structure of the centers and the unbiased research they promote make them respected foci of American academia in the countries in which they operate.

        The members of the Council of American Overseas Research Centers have centers in Bangladesh, Cyprus, Egypt, Greece, India, Israel, Italy, Jordan, Morocco, Pakistan, Tunisia, Turkey, West Africa, and Yemen, and together represent over three hundred years of experience in facilitating research in foreign countries. The older centers have served as an operations base for virtually every American specialist undertaking research in the host countries.

Benefits for South Asian Studies

    Scholars will benefit enormously from the activities of the center. Current library collections in the United States are, for several reasons, ill-equipped to provide scholars with early printed texts in the languages of South Asia. Because most library collections on South Asia in this country have been developed since World War II, the greatest strengths are in holdings of recent publications. Aside from recent work by the South Asia Microform Project and the Microfilming of Indian Publications Project, there has been little systematic effort to acquire early imprints in most languages of the South Asian subcontinent. Additionally, in the past faculty and students exerted only slight demand for access to earlier printed texts. The need for access has changed dramatically, however, as a result of forty years of federal funding for the study of "critical languages".

Appendix 4.   Description of Proposed Overseas Center for South Asian Libraries (cont.)

Benefits for CRL

The Center for Research Libraries (CRL) is an institution with global interests and reach. As a consequence, it makes sense to locate the new center under the CRL umbrella. The center, a self-sustaining and independent corporation, will deposit copies of the resources resulting from its activities in South Asia with CRL. Additionally, CRL will be able to rely on the overseas center as a means of collecting research materials such as doctoral theses that are difficult to gather without a presence in the country of origin. The South Asia Microform Project (SAMP), based at CRL, will also find the bases of operation maintained by the center of value as it continues to expand access to microforms from and about South Asia.
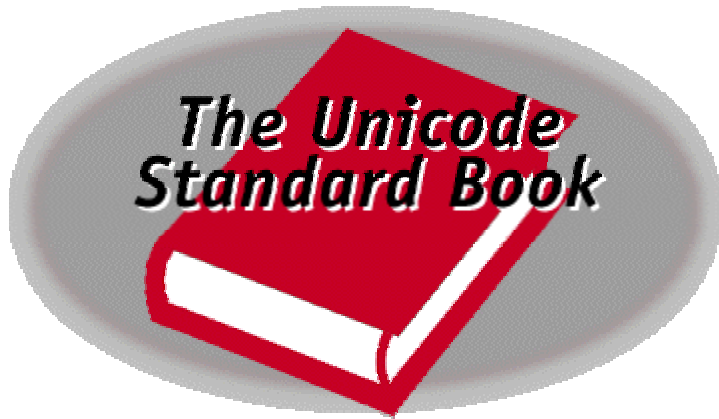
Relationship to Existing CAORC Centers in South Asia

Current and proposed members of CAORC include the American Institute of Indian Studies, American Institute of Pakistan Studies, American Institute of Bangladesh Studies, and American Institute of Sri Lanka Studies. Some of these institutes maintain libraries. The new center will offer to assist those libraries to improve access to their collections and generally to enhance their infrastructure through collaborative engagements with the center. Starting with a base of operations in India, the center will likely expand its activities to Pakistan, Bangladesh, Nepal, and Sri Lanka. These new activities will be taken up after consultation with relevant CAORC centers in those countries.

James Nye
David Magier

July 22, 1998

Appendix 5.   Statements on Digital Standards

The Unicode Standard, Version 2.0[18]

The Unicode Standard, Version 2.0, is the authoritative source of information on the Unicode character-encoding standard, a 16-bit international character code for information processing. The rapid growth of the Internet is pushing the demand for software to be simultaneously internationalized and localized*.* Encompassing the principal scripts of the world, the Unicode Standard provides THE foundation for the internationalization and localization of software. Java, Windows NT, AIX, NetWare 4.0, QuickDraw GX, are but a few of the applications, which are Unicode Standard compliant. *Version 2.0* of the Unicode Standard introduces additional scripts, and contains ten years' worth of cumulated experience from unrivaled experts in multilingual applications.

In this authorized description and guide to the Unicode Standard, you'll find documentation of all the essential aspects, including basic principles, and code charts. There is also a discussion of implementation issues and rules for Unicode Standard conformance. Scripts covered include the alphabets used in countries across Europe, Africa, Asia, and the Indian subcontinent, and the "unified Han" set of logographic characters for Chinese, Japanese, Korean and historical Vietnamese. The unified Han section includes a radical-stroke index, a multi-glyph table, and a character cross-reference chart providing mapping information to major national, bibliographic, and industrial standards. As a subset of International Standard ISO/IEC 10646-1;1993, the Unicode Standard is code value for code value equivalent with ISO/IEC 10646.
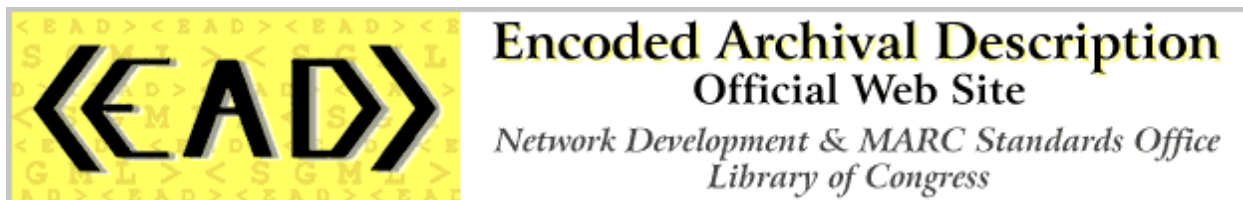
The Unicode Standard, Version 2.0 presents standard algorithms:

- for formatting Arabic, Devanagari, and Tamil scripts;
- for display of bi-directional text (e.g., mixed English and Arabic); and,
- for the creation of Korean Hangul syllables.

Packaged with *The Unicode Standard, Version 2.0* is a CD-ROM with tables of character properties, and mappings to international, national, and vendor character sets.

The Unicode Standard, Version 2.0 is an essential reference for computer programmers and software developers working on global software and multilingual applications. In addition, Unicode Technical Report #8: The Unicode Standard, Version 2.1 is available on this web site and provides updates and additions.

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[18]Text of the description of *The Unicode Standard, Version 2.0* is reproduced from <http://www.unicode.org/unicode/uni2book/u2.html>.

Appendix 5.   Statements on Digital Standards (cont.)

Development of the Encoded Archival Description Document Type Definition[19]

Introduction

This paper presents general background information and a status report on the development of the Encoded Archival Description Document Type Definition (EAD DTD).

Choosing an Encoding Standard

Development of the EAD DTD began with a project initiated by the University of California, Berkeley, Library in 1993. The goal of the Berkeley project was to investigate the desirability and feasibility of developing a nonproprietary encoding standard for machine-readable finding aids such as inventories, registers, indexes, and other documents created by archives, libraries, museums, and manuscript repositories to support the use of their holdings. The project directors recognized the growing role of networks in accessing information about holdings, and they were keen to include information beyond that which was provided by traditional machine-readable cataloging (MARC) records. The development of the EAD DTD was a cooperative venture from early on, with specialists at Berkeley working in consultation with experts at other institutions. Daniel Pitti, the principal investigator for the Berkeley Project, developed requirements for the encoding standard which included the following criteria: 1) ability to present extensive and interrelated descriptive information found in archival finding aids, 2) ability to preserve the hierarchical relationships existing between levels of description, 3) ability to represent descriptive information that is inherited by one hierarchical level from another, 4) ability to move within a hierarchical informational structure, and 5) support for element-specific indexing and retrieval.

At the start of the project, candidates for meeting the requirements for a standard encoding technique included Gopher presentation of flat (i.e., unmarked) ASCII text, ASCII text marked up using HTML (HyperText Markup Language) tags, MARC tagging using either existing or new implementations of the MARC (Z39.2/ISO 2709) records structure, and markup conformant to SGML (Standard Generalized Markup Language, ISO 8879). SGML emerged from the analysis as being a technique able to meet all of the functional requirements as well as one supported by a large and growing number of software products available for a variety of operating systems. Pitti and his colleagues at Berkeley chose to experiment with the use of SGML in encoding a variety of archival finding aids from Berkeley and other institutions.

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[19]This extract from a background statement about EAD at <http://www.loc.gov/ead/eadback.html> includes only the first paragraphs.

Appendix 5.   Statements on Digital Standards (cont.)

Open GIS Consortium[20]

The Open GIS Consortium, Inc. (OGC) is a not-for-profit industry consortium dedicated to "geoprocessing interoperability." OGC runs a consensus process in which most of the world's geoprocessing software vendors as well as integrators, universities, and government agencies agree on open, standard software interfaces that enable interoperation between geoprocessing systems from different vendors and of different kinds (GIS, remote sensing, automated mapping and facilities management, etc.). Communicating through agreed upon interfaces, dissimilar systems will access each other's data and processing functions over the Internet and other networks.

The data sharing paradigm thus will move away from mailing or ftp'ing entire data files, and geodata and geoprocessing will become part of everyone's information environment. For example: It will be possible to put data online and have that data be immediately available to anyone as a thematic layer in their GIS; a query you make across the network will return a query result, not a data layer to be queried using your computer's software; you might not have a GIS on your computer, but your browser might download GIS "applets" and geodata to enable you to perform a spatial analysis; and our mobile "Internet appliances" will express for us our needs and our coordinates, and online services will tell us how to get where we are going and to find what we are looking for.

The OpenGIS Simple Features Specification is the first part of the specification to have been completed. Vendors have written conformant products which they are now submitting to OGC for conformance testing. "Simple Features" addresses basic points, lines, and polygons, along with attributes and spatial referencing. The next specifications will deal with catalogs, coverages (which includes imagery, raster processing, TINs, etc.), and more complete handling of the issues addressed in the OpenGIS Simple Features Specification.

The relationship between OGC and FGDC has grown closer and both groups work closely with ISO TC 211, the international standards group concerned with geoprocessing and geodata. John Moeller of the FGDC sits on OGC's Management Committee, and the FGDC has become active in OGC's Technical Committee. In particular, Doug Nebert of FGDC has played an important role recently in writing, with industry partners, one of the two responses to OGC's OpenGIS Catalog Request for Proposals (RFP). The OpenGIS Catalog Specification will be an enabling technology for the NSDI Clearinghouse, a "catalog of catalogs."

The NSDI develops through a co-evolution of products and practices. In the new world of interoperable geoprocessing, metadata standards and data content standards will continue to be necessary, and will in fact become more important as commerce in geodata grows and as data becomes more abundant. It's true that metadata tasks will be aided by tools that will make it easier to develop conformant data. And other tools will automatically filter through metadata on hundreds of sites to help users find the best possible data for a particular purpose, even when the metadata are not entirely conformant or consistent. But these tools will augment, not replace data coordination.

In OGC's "Domain Special Interest Groups (SIGs)" experts in geoprocessing application areas reach consensus on the domain-specific geoprocessing functions that need standard interfaces. That is, these SIGs extend the OpenGIS Specification so that it meets the special needs of domains such as transportation, telco operations, defense and intelligence, and disaster management. To the extent that users in these NSDI domains can benefit from interoperability, they have a stake in the SIGs' success, and thus they have a reason to participate.

OGC is a prime example of the "network effect" that industry philosophers talk about, in which the system's value to everyone increases with the number of people who are connected. OGC seeks broad participation in its consensus process, and invites NSDI stakeholders to participate in whatever way possible.

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[20]Text of the statement on the Open GIS Consortium is reproduced from
<http://www.fgdc.gov/98_nsdi_reports/ogc98.html>.

Appendix 5.   Statements on Digital Standards (cont.)

<h2 style="text-align:center">The Dublin Core: A Simple Content Description Model for Electronic Resources[21]</h2>

Metadata for Electronic Resources

The Dublin Core is a metadata element set intended to facilitate discovery of electronic resources. Originally conceived for author-generated description of Web resources, it has attracted the attention of formal resource description communities such as museums, libraries, government agencies, and commercial organizations.

The Dublin Core Workshop Series has gathered experts from the library world, the networking and digital library research communities, and a variety of content specialties in a series of invitational workshops. The building of an interdisciplinary, international consensus around a core element set is the central feature of the Dublin Core. The progress represents the emergent wisdom and collective experience of many stakeholders in the resource description arena. An open mailing list supports ongoing work.

The characteristics of the Dublin Core that distinguish it as a prominent candidate for description of electronic resources fall into several categories:

Simplicity
The Dublin Core is intended to be usable by non-catalogers as well as resource description specialists. Most of the elements have a commonly understood semantics of roughly the complexity of a library catalog card.

Semantic Interoperability
In the Internet Commons, disparate description models interfere with the ability to search across discipline boundaries. Promoting a commonly understood set of descriptors that helps to unify other data content standards increases the possibility of semantic interoperability across disciplines.

International Consensus
Recognition of the international scope of resource discovery on the Web is critical to the development of effective discovery infrastructure. The Dublin Core benefits from active participation and promotion in some 20 countries in North America, Europe, Australia, and Asia.

Extensibility
The Dublin Core provides an economical alternative to more elaborate description models such as the full MARC cataloging of the library world. Additionally, it includes sufficient flexibility and extensibility to encode the structure and more elaborate semantics inherent in richer description standards.

Metadata Modularity on the Web
The diversity of metadata needs on the Web requires an infrastructure that supports the coexistence of complementary, independently maintained metadata packages. The World Wide Web Consortium (W3C) has begun implementing an architecture for metadata for the Web. The Resource Description Framework, or RDF, is designed to support the many different metadata needs of vendors and information providers. Representatives of the Dublin Core effort are actively involved in the development of this architecture, bringing the digital library perspective to bear on this important component of the Web infrastructure.

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[21]Text of the statement on Dublin Core is reproduced from <http://purl.org/DC/>.

Appendix 6.   Global Resources Project Brochures

AAU/ARL GLOBAL RESOURCES PROGRAM

THE AAU/ARL Global Resources Program (GRP) is a joint initiative of the Association of American Universities (AAU) and the Association of Research Libraries (ARL). Its principal goals are to improve access to international research resources and help libraries contain costs through the creation of cooperative structures, the use of new technologies, and the expansion of international document delivery.

Funded by a grant from The Andrew W. Mellon Foundation, the GRP promotes a distributed, interdependent approach to collecting scholarly materials from abroad so that more focused collection development at individual institutions will ensure access to a broader array of these often difficult-to-acquire resources.

The GRP partners its efforts with those of other libraries and organizations that share common interests with AAU and ARL.

REGIONAL PROJECTS

The Cooperative African Newspapers Project

The German Resources Project

The Japan Journal Access Project

The Latin Americanist Research Resources Project

The Digital South Asia Library

The GRP website is available at <http://www.arl.org/collect/grp/>.

FOR MORE INFORMATION:

Deborah Jakubs
Director, AAU/ARL Global Resources Program
Director, Collections Services
Duke University

phone: (919) 660-5846
  fax: (919) 660-5923
email: deborah.jakubs@duke.edu

AAU/ARL GLOBAL RESOURCES PROGRAM

The Association of American Universities (AAU) was founded in 1900 by a group of fourteen universities offering the Ph.D. degree. The AAU currently consists of 60 North American universities. The Association serves its members by assisting them in developing national policy positions on issues that relate to academic research and graduate and professional education. It also provides members with a forum for discussing a broad range of other institutional issues, such as undergraduate education.

The Association of Research Libraries (ARL) is a not-for-profit membership organization comprising the libraries of 121 North American research institutions and operates as a forum for the exchange of ideas and as an agent for collective action. Membership in ARL is institutional. ARL programs and services promote equitable access to and effective use of recorded knowledge in support of teaching, research, scholarship, and community service.

SELECTED OTHER ACTIVITIES
OF THE GLOBAL RESOURCES PROGRAM

Web-based clearinghouse of Internet resources to support teaching and research on international topics.
<http://www.duke.edu/~frykholm/global3.htm>

Co-sponsorship of the May 1997 Symposium on Access to and Preservation of Global Newspapers with the Library of Congress, the Center for Research Libraries, and the Council on Library and Information Resources.
<http://wwwcrl.uchicago.edu/info/icon/intro.htm>

Development with OCLC of a direct user link to document delivery in the Latin Americanist Research Resources Project.

Support for efforts to develop models for training future area librarians.

Survey of Title VI National Resources Center directors, April 1998, to determine trends in research and areas for increased access to international resources.

Faculty symposia are planned, in cooperation with the American Council of Learned Societies (ACLS), to engage scholars on key issues for libraries regarding access to global resources, regardless of format or location, in order to develop a set of strategic initiatives for each world area.

Development of web-based protocols of library strengths, collecting policies, and responsibilities of lead institutions to facilitate scholarly access to resources.

Co-sponsorship with the Library of Congress of the June 1998 conference, the AAU/ARL Global Resources Program: Catalyst for Cooperation. A summary of the conference is available at <http://www.arl.org/collect/grp/conf_sum.html>.

THE DIGITAL SOUTH ASIA LIBRARY

AAU/ARL GLOBAL RESOURCES PROGRAM

LEAD INSTITUTIONS
University of Chicago Library
Columbia University Libraries

PARTICIPATING LIBRARIES
Roja Muthiah Research Library
(Madras)
Sundarayya Vignana Kendram
(Hyderabad)
Center for Research Libraries

BENEFICIARIES
Urdu Research Library Consortium
(URLC)
South Asia Microform Project (SAMP)

THE Digital South Asia Library is a pilot project intended to develop an Internet-based infrastructure for intercontinental electronic document delivery to and from selected South Asia libraries. The project will index journals and create other reference resources and finding aids to improve access to scholarly sources in English, Tamil, and Urdu. Direct delivery of scanned pages of articles will allow scholars to consult these rare publications without travel to India.

The pilot project includes:

- electronic indexing records for approximately 38,000 articles in Tamil journals, 38,000 articles in Urdu journals, and 4,750 English journal articles, all published during the nineteenth and twentieth centuries;
- electronic full-text versions of three classic nineteenth-century South Asia reference books printed in roman characters;
- full-text electronic versions of five titles selected from the *Official Publications of India*, one of which will be a statistical source structured as an electronic database; and
- a website providing global access to the project's new electronic resources.

The first year includes the creation of index articles and development of the infrastructure for delivery of page images from India. The second year will feature additional indexing and direct delivery of articles to readers. Evaluation and planning for subsequent phases will be ongoing through the initial phases of the project. Broader participation of North American and overseas libraries and coverage of other languages are key elements in the

THE DIGITAL SOUTH ASIA LIBRARY

AAU/ARL GLOBAL RESOURCES PROGRAM

The AAU/ARL Global Resources Program (GRP) is a joint initiative of the Association of American Universities (AAU) and the Association of Research Libraries (ARL). Its principal goals are to improve access to international research resources and help libraries contain costs through the creation of cooperative structures, the use of new technologies, and the expansion of international document delivery.

Funded by a grant from The Andrew W. Mellon Foundation, the GRP promotes a distributed, interdependent approach to collecting scholarly materials from abroad so that more focused collection development at individual institutions will ensure access to a broader array of these often difficult-to-acquire resources.

The GRP partners its efforts with those of other libraries and organizations that share common interests with AAU and ARL.

The Association of American Universities (AAU) was founded in 1900 by a group of fourteen universities offering the Ph.D. degree. The AAU currently consists of 60 North American universities. The Association serves its members by assisting them in developing national policy positions on issues that relate to academic research and graduate and professional education. It also provides members with a forum for discussing a broad range of other institutional issues, such as undergraduate education.

The Association of Research Libraries (ARL) is a not-for-profit membership organization comprising the libraries of 121 North American research institutions and operates as a forum for the exchange of ideas and as an agent for collective action. Membership in ARL is institutional. ARL programs and services promote equitable access to and effective use of recorded knowledge in support of teaching, research, scholarship, and community service.

future of the project as is the migration to a self-sustaining operation through recovery of costs for services delivered.

Collaborative and mutually beneficial engagement with developing areas of the world is an integral element of this project. The benefits of the linkages between libraries, staff development, services to readers, and electronic infrastructure that result from the project will offer a model for other world areas.

Project resources are available at <http://www.lib.uchicago.edu/LibInfo/Subjects/SouthAsia/dsal.html>.

FOR MORE INFORMATION:

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Project Director
Director, Area Studies
South Asia Librarian
Columbia University Libraries

phone: (212) 854-8046
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James Nye
Project Director
Bibliographer for Southern Asia
The University of Chicago Library

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fax: (773) 753-0569
email: jnye@midway.uchicago.edu

Appendix 7.   ICOLC "Guidelines for Statistical Measures of Usage"

Guidelines for Statistical Measures of Usage of Web-Based Indexed, Abstracted, and Full Text Resources[22]
by the International Coalition of Library Consortia (ICOLC)
(November 1998)

INTRODUCTION

The use of licensed electronic information resources will continue to expand and in some cases become the sole or dominant means of access to content. The electronic environment, as manifested by the World Wide Web, pro vides an opportunity to improve the measurement of the use of these resources. In the electronic arena we can more accurately determine which information is being accessed and used. Without violating any issues of privacy or confidentiality we can dramatically enhance our understanding of information use.

The participating consortia of the ICOLC have a responsibility to their library members to ensure the provision of usage information of licensed electronic resources. Information providers should want the same information to better understand the market f or their services as well as to create an informed customer base. These mutual interests can be best met by defining and creating a common set of basic use information requirements that are an integral and necessary part of any electronic product offering . These requirements apply to vendor operated web sites and to software provided to libraries or consortia for local operation. Information providers are encouraged to go beyond these minimal requirements as appropriate for their specific electronic resources.

These ICOLC guidelines draw heavily upon the guidelines developed by the JSTOR Web Statistics Task Force: David Farrell, Berkeley, Chair; Jim Mullins, Villanova; Kimberly Parker, Yale; Dave Perkins, CSU-Northridge; Sue Phillips, Texas; Camille Wanat, Berkeley; Kristen Garlock, JSTOR, ex-officio. The ICOLC guidelines reflect modifications to maximize their broad applicability to the diversity of resources licensed by many ICOLC members.

1. REQUIREMENTS

Each use element defined below should be able to be delineated by the following subdivisions;

1. By each specific database of the provider
2. By each institutionally-defined set of IP addresses / locators to subnet level
3. By total consortium
4. By special data element passed by subscriber(e.g., account or ID number)
5. By time period. Vendor's system should minimally report by month. For each month, each type of use should be reported by hour of the day, and vendor should maintain 24 months of historical data

Use Elements that must be provided are:

Number of queries (Searches) categorized as appropriate for the vendor's information. A search is intended to represent a unique intellectual inquiry. Typically a search is recorded each time a search form is sent/submitted to t he server. Subsequent activities to review or browse among the records retrieved or the process of isolating the correct single item desired do not represent additional searches, unless the parameter(s) defining the retrieval set is modified through resubmission of the search form, a combination of previous search sets, or some other similar technique.

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[22]Text of the Guidelines is reproduced from <http://www.library.yale.edu/consortia>.

Appendix 7.   ICOLC "Guidelines for Statistical Measures of Usage" (cont.)

Number of Menu Selections categorized as appropriate to the vendor's system. If display of data is accomplished by browsing (use of menus), this measure must be provided (e.g. an electronic journal site provides alphabetic and subject-based menu options in addition to a search form. The number of searches and the number of alphabetic and subject menu selections should be tracked).

Number of sessions (Logins), if relevant, must be provided as a measure of simultaneous use. It is not a substitute for either query or menu selection counts.

Number of turn-aways, if relevant, as a contract limit (e.g., requests exceed simultaneous user limit).

Number of items examined (i.e., viewed, marked or selected, downloaded, emailed, printed) to the extent these can be recorded and controlled by the server rather than the browser:

1. Citations displayed (for A&I databases)
2. Full text displayed broken down by title, ISSN with title listed, or other title identifier as appropriate
   1. Tables of Contents displayed
   2. Abstracts displayed
   3. Articles or essays, poems, chapters, etc., as appropriate, viewed (e.g., ASCII or HTML) or downloaded (e.g. PDF, email)
   4. Other (e.g., image / AV files, ads, reviews, etc., as appropriate)

The ICOLC is preparing a separate guideline on Technical Performance of Web-based Services for reporting of system related parameters (e.g., downtime, response time).

2. PRIVACY AND USER CONFIDENTIALITY: Statistical reports or data that reveal confidential information about individual users must not be released or sold by information providers without permission of the consortium and its member libraries.

3. INSTITUTIONAL OR CONSORTIAL CONFIDENTIALITY: Providers do not have the right to release or sell statistical usage information about specific institutions or the consortium without permission, except to the consortium administrators and member libraries. Use of institutional or consortium data as part of an aggregate grouping of similar institutions for purposes of comparison does not require prior permission as long as specific institutions or consortia are not identifiable. When required by contractual agreements, information providers may furnish institutional use data to the content publishers.

4. COMPARATIVE STATISTICS: Information providers should provide comparative statistics that give consortia a context in which to analyze statistics at the aggregate institutional (consortium member) level. For example, a grouping for purposes of comparison should be compiled by the information provider (e.g., statistics from an anonymous selection of similar institutions), or it might be a grouping composed on demand (e.g., statistics from all campuses in a consortium, presented either anonymously or not, as desired by the participating institutions).

5. ACCESS / DELIVERY MECHANISMS / REPORT FORMATS: Access to statistical reports should be provided via web-based reporting systems and be restricted by IP address or another form of security such as passwords. Institutions should be able to authorize access to their use data by other institutions in the consortium if they desire.

Information providers should maintain access to tabular statistical data through their web site (updated monthly) which a participant can access, aggregate and manipulate on demand. When appropriate, these data also should be available in flat files containing specified data elements that can be downloaded and manipulated locally. Information providers are also encouraged to present data as graphs and charts.

Appendix 8.   Impact of Technology on South Asian Studies

An extract on the impact of technology on South Asian studies from:

Scholarship, Research Libraries, and Global Publishing[23]

Technology

The impact of technology on South Asian studies has not been as great as on area studies for some other regions. Yet, the changes are pronounced and the prospects for increased availability of scholarly resources in electronic form are significant.

The traditional sources of information related to South Asian materials are not yet converted to electronic form. Few libraries in South Asia have their catalogs converted to machine-readable form. Retrospective conversion of U.S. and South Asian library catalogs remains an important desideratum for scholarly access and a prerequisite for cooperative collection development. The Committee on South Asian Libraries and Documentation (CONSALD) has a plan for retrospective conversion, but progress remains difficult.

The picture is the same for bibliographies and reference tools. The world's major online indexes and abstracts cover relatively few publications from South Asia. Further, most of the standard South Asia bibliographies and reference tools are only available as printed tools. With the exception of journal indexing projects noted above, not even the most basic reference sources on South Asia are accessible electronically.

Several ARL libraries are taking advantage of advances in client/server technology. Integrated sites, the South Asia Gopher at Columbia University, the Asian Studies Network Information Center at the University of Texas, and the Web pages at several institutions are serving important functions in providing a structured home for existing electronic resources and in encouraging the production of new resources. But humanities and social sciences libraries in South Asia have lagged far behind science libraries in use of electronic technology, largely for lack of financial support.

There is, to date, no systematic planning to expand the availability of full-text databases or scanned images of photographs and rare texts for South Asian studies. Faster and more reliable communications – use of electronic mail, list servers, and the World Wide Web – may draw more scholarly and library colleagues from South Asia into the mainstream of inquiry that originates outside the region. Yet lack of funding for creating electronic resources remains a formidable obstacle.

In conclusion, one notes the challenges presented to research libraries by the expanding range of scholarly inquiry about the South Asian subcontinent and an increasing move toward inter-disciplinary studies. These changes in research have resulted in calls for more facile access to a wider array of resources, both in print and in electronic form. Considering all these elements, the need for new sources of funding and closer collaboration among North American libraries and also with counterparts elsewhere in the world are major requirements if libraries on South Asia are to justly meet the needs of researchers.

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[23]Jutta Reed-Scott, *Scholarship, research libraries, and global publishing: the result of a study funded by the Andrew W. Mellon Foundation* (Washington, DC: Association of Research Libraries, 1996), p. 82-83.

Appendix 9.   JSTOR[24]

JSTOR MISSION *and* GOALS

In the broadest sense, JSTOR's mission is to help the scholarly community take advantage of advances in information technologies. In pursuing this mission, JSTOR has adopted a system-wide perspective, taking into account the sometimes conflicting needs of libraries, publishers, and scholars.

JSTOR's goals include the following:
- To build a reliable and comprehensive archive of important scholarly journal literature
- To improve dramatically access to these journals
- To help fill gaps in existing library collections of journal backfiles
- To address preservation issues such as mutilated pages and long-term deterioration of paper copy
- To reduce long-term capital and operating costs of libraries associated with the storage and care of journal collections
- To assist scholarly associations and publishers in making the transition to electronic modes of publication
- To study the impact of providing electronic access on the use of these scholarly materials

BACKGROUND

Originally conceived by William G. Bowen, President of The Andrew W. Mellon Foundation, JSTOR began as an effort to ease the increasing problems faced by libraries seeking to provide adequate stack space for the long runs of backfiles of scholarly journals. The basic idea was to convert the back issues of paper journals into electronic formats that would allow savings in space (and in capital costs associated with that space) while simultaneously improving access to the journal content. It was also hoped that the project might offer a solution to preservation problems associated with storing paper volumes.

To demonstrate the concept, the Mellon Foundation sponsored a pilot project to provide electronic access to the backfiles of ten journals in two core fields, economics and history. Five library test sites were selected initially. Every issue of the ten participating journals published prior to 1990 – approximately 750,000 total pages – has now been converted from paper into an electronic database that resides at the University of Michigan and is mirrored at Princeton University. Using technology developed at Michigan, high-resolution (600 dpi) bit-mapped images of each page are linked to a text file generated with optical character recognition (OCR) software which, along with newly constructed Table-of-Contents indexes, permits complete search and retrieval of the journal material.

Initial users of JSTOR were enthusiastic, and it was evident that the concept had great promise. Linking a searchable text file to the page images of the entire published record of a journal offers a level of access previously unimaginable. Authorized users are able to view and print articles using standard PC equipment at any time and from any networked location. Issues of journals are never "out"; they are always available, and in pristine condition. In sum, the addition of powerful search and printing capabilities makes the JSTOR system more than just a way for libraries to save capital costs; it has become a scholarly tool of enormous potential value.

JSTOR was established as an independent not-for-profit organization in August 1995. The Mellon Foundation has provided JSTOR with its initial working capital, and JSTOR is now expected to become self-sustaining.

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[24]Text of statements on JSTOR are reproduced from <http://www.jstor.org>.