The annual report covers the sixth year of full scale operation of the Institute of Library Research. It covers the activities of the Institute including the completion of several projects, the initiation of other projects, and the first full year of the Library Systems Development Program. The major thrust of the Institute during this period has been three-fold: first, to continue to explore and search for a better understanding of how the needs for information can be met through better library service; secondly, to help the libraries of the University of California apply such knowledge to their operational environment; and third, to continue to meet the obligations and operational goals of the Institute during a period of growing financial uncertainty and unfilled management positions. (Author)
ANNUAL REPORT

INSTITUTE OF LIBRARY RESEARCH
UNIVERSITY OF CALIFORNIA
JULY 1970 - JUNE 1971

Editors:

R. L. Carmichael
R. M. Shoffner

Contributors:

F. L. Bellomy
R. L. Carmichael
W. S. Cooper
R. M. Shoffner

30 June 1971


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This "Annual Report, July 1970 to June 1971" is the fifth progress report of the Institute of Library Research. It covers the activities of the Institute including the completion of several projects, the initiation of other projects, and the first full year of the Library Systems Development Program.
ANNUAL REPORT
JULY 1970 - JUNE 1971

INTRODUCTION

This report covers the sixth year of full-scale operation of the Institute of Library Research.

The major thrust of the Institute during this period has been three-fold: first, to continue to explore and search for a better understanding of how the needs for information can be met through better library service; secondly, to help the libraries of the University of California apply such knowledge to their operational environment; and third, to continue to meet the obligations and operational goals of the Institute during a period of growing financial uncertainty and unfilled management positions.

The Institute has continued to make contributions, even though it was without the services of Associate Directors or a permanent Director for most of this period, in the areas of research, development, education, and public service. Most of this progress can be attributed to three factors:

a. Impetus of programs established in prior years.
b. Solid contributions of Institute administrative and technical staffs during the past year.
c. Institute guidance provided by campus advisory groups, the Library Council, and University personnel at various levels.
It is also appropriate that this issue of the Annual Report recognize the culmination of several years of ILR leadership in promoting a unified approach for the utilization of computers to solve library problems. Through the mechanism of the Library Systems Development Program (LSDP), the coordination achieved by the University of California Library Systems Task Force (UNCLSTAF) has been channeled into a large scale feasibility study of a multi-year library automation development program to serve all UC campuses.

Areas of Interest

Institute projects help resolve needs and issues in the following broad areas: values in library and information service, library and information systems, methodology research, development of information services, and social and professional issues. In addition, significant actions have been taken to influence library processes by automation and mechanization.

Values. Many tasks or services can be measured in terms of need satisfaction. Other types of activity, including library and information services are often difficult to assess. While the Institute program has been concerned with the social and scholarly environment of the library and other information activities, and with many aspects of value determination, many questions remain. What goals are to be served? How can the quality of library collections be assessed? How are books and information used? What are the criteria for the design of library systems? What is the value of library services in education, research, and management, and how can it be measured? What is the relationship between the value of services and the response time of them? What are the problems in gaining acceptance of new services, both by the library and
its users, and how can they be solved? What are the values to be gained by in-service education of librarians, and what are the problems, motivational and otherwise, to be solved?

**Systems.** This program has been concerned with the nature of library and information systems, the definition of their components and of the interrelationships of those components at various levels from local to national. Projects in this area have included the analysis of present library organizations, experimentation with new or alternative forms and types of services, and the planning of new systems.

**Methodology Research.** This program has been concerned with the development of basic methods by which libraries and information systems can be designed and evaluated. Projects to date have studied the tools for development of vocabulary, for file indexing and organization, for cost accounting in information activities, for the measurement of file effectiveness, for definition of user needs, for evaluation of equipment and physical facilities, for the organization of catalogs, for the mechanization of union catalog preparation, and for the evaluation of library mechanization programs.

**Development.** The development of a general purpose capability for providing computer-based information services within the library, which can be utilized by any university activity desiring to establish an information center, has been a basic concern of the Institute. Establishment of a Center for Information Services will mobilize the intellectual facilities (knowledge of computer programs for language data processing, of man-machine communication problems, of analysis and simulation based on data files) of the campus for experimentation with advanced services that are being encompassed by university libraries.
Social and Professional Aspects. This program has been concerned with the professional and social aspects of librarianship. It is intended to support and extend the programs of the library schools through joint faculty appointments and the employment of students as research assistants. The Institute has experimented with the development of new curricula; it has sponsored conferences, symposia, seminars, and special courses in cooperation with University Extension. In addition, funds have been separately sought to offer advanced post-graduate training programs for practicing librarians and fellowships to bring experienced persons to the Institute for work on specific research projects. It has undertaken a research project concerning problems in education for librarianship, and it has established projects requiring the talents of personnel from several basic disciplines.

Library Systems Development Program

The Institute has been concerned with the development of a long term plan and creation of an organization for the automation of university-wide library functions for the University of California campuses. This plan and associated proposal originated with a request from President Hitch that the Institute of Library Research develop a program of mechanization for the University's libraries. In response, a Library System Development Program document was prepared and submitted to the University through the Program Review Committee of the University of California Library Council. This submission resulted in the establishment of the Library Systems Development Program housed at Santa Barbara and funded by the University to conduct library automation feasibility studies during fiscal year 1970-71.
ADMINISTRATION

The Institute of Library Research has two main branches, one at UC Los Angeles and one at UC Berkeley. A major project, the Library Systems Development Program, is located at UC Santa Barbara. The administrative structure of the Institute since October 1970 is as shown on Figure 1.

As an organized research unit of the University of California, the Institute of Library Research has been administered by a Director who also holds an appointment as a regular member of the faculty. In October of 1965, Professor Robert M. Hayes of the School of Library Service at UC Los Angeles was appointed the first permanent Director of the Institute, following the initial organizing period during which Professor Raymond C. Swank (then Dean, School of Librarianship, UC Berkeley) served as Acting Director. Because of other demands, Professor Hayes resigned as Director effective July 1, 1970. In July of 1966, Professor M. E. Maron was appointed Associate Director of the Institute with primary responsibility for the Berkeley branch, and administered activities there during the next four years. At the end of September 1970, Professor Maron also resigned from this position because of other responsibilities. During these years Professors Hayes and Maron led the Institute from a fledgling activity into the substantial statewide organization whose most recent activities are reported in this document. Both men have remained in contact with the Institute through their respective roles as Principal Investigators on individual projects.
FIGURE 1

UNIVERSITY OF CALIFORNIA
INSTITUTE OF LIBRARY RESEARCH
Administrative Structure

Acting Director
W. S. Cooper

Santa Barbara
LSDP Project
Manager:
F. L. Bellomy
Admin. Asst.:
T. Geller

Los Angeles
ILR Branch
Manager:
R. L. Carmichael
Admin. Asst.:
P. Honley

Berkeley
ILR Branch
Manager:
R. M. Shoffner
Admin. Asst.:
B. Parrish

Related University Groups

1. University Faculty Committee: Review general ILR activities and provide guidance to Director.

2. LA Faculty Advisory Committee: Review ILR-LA activities and provide guidance to Manager.


4. Program review Committee (of the Library Council): Guidance, policy review, and reporting of LSDP activities.

For some time prior to these resignations, a search committee had been conducting a search for a permanent director. When the position remained unfilled, Professor William S. Cooper of the Berkeley faculty was appointed Acting Director of the Institute in October of 1970 to serve for the nine-month period until June of 1971. During this period, the search has continued but as of the time of writing of this report, no permanent director has yet been named.

Late in 1970, the Library Council passed a resolution to the effect that the Institute of Library Research should retain the main features of its present statewide structure, in which research, development, and other activities are included within the same organization. Following this lead, the Institute has during this transitional period made no substantial organizational changes, but has instead continued to pursue already established policies and directions. Within this framework, substantial progress has been realized in several directions.

Activities have continued as planned at the Los Angeles branch, where R. L. Carmichael has served as manager. R. M. Shoffner has continued to act as manager of Berkeley operations, and the Library Systems Development Program at Santa Barbara has continued under the managership of F. L. Bellomy. Activities, under investigators, directors, and managers, are organized along project lines with heavy use of student research assistants. The staff list for this reporting period, by project, is shown on Figure 2.
FIGURE 2

ORGANIZATION AND SEARCH OF BIBLIOGRAPHIC HOLDINGS RECORDS IN ON-LINE COMPUTER SYSTEMS (Office of Education)

Arjun Aiyer
Jay Cunningham
William Harrelson
Allan Humphrey
M. E. Maron
Joseph Meredith
Ralph Shoffner
Steven Silver
Stephen Smith

Programmer
Associate Specialist
Assistant Programmer
Specialist
Principal Investigator
Associate Specialist
Project Director
Senior Programmer
Associate Specialist

SEMANTIC FOUNDATIONS FOR QUESTION-ANSWERING SYSTEMS (SEMQUAS) (National Library of Medicine)

Harold Borko
Georgia Green
Jeffrey Gruber
Ken Kress
Magnus Liping
Chris Munson
John Olney
Jim Paris
Donald Ramsey
Bruce Stein
Sylvia Tidwell
Paul Ziff

Principal Investigator
Consultant
Consultant
Senior Coder
Consultant
Clerk
Principal Programmer
Research Assistant
Research Assistant
Research Assistant
Keypunch Operator
Consultant

UNIVERSITY OF CALIFORNIA UNION CATALOG SUPPLEMENT (University of California)

Arjun Aiyer
Deborah Barrett
John Courtright
Jay Cunningham
Ruth Dunham
Martin Fried
Thomas Hargrove
William Harrelson
Allan Humphrey
Steven Jacobs
Stephen Johnson
Katsuhiko Kurano

Programmer
Assistant Specialist
Assistant Programmer
Associate Specialist
Assistant Specialist
Programmer
Assistant Specialist
Assistant Programmer
Specialist
Senior Coder
Assistant Programmer
Coder
<table>
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<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Joseph Meredith</td>
<td>Associate Specialist</td>
</tr>
<tr>
<td>Linda Nakamura</td>
<td>Junior Specialist</td>
</tr>
<tr>
<td>Rodney Randall</td>
<td>Programmer</td>
</tr>
<tr>
<td>Victor Rosenberg</td>
<td>Assistant Research Librarian</td>
</tr>
<tr>
<td>Janet Rowell</td>
<td>Laboratory Assistant</td>
</tr>
<tr>
<td>Maxine Sansing</td>
<td>Assistant Programmer</td>
</tr>
<tr>
<td>Donald Sherman</td>
<td>Specialist</td>
</tr>
<tr>
<td>Ralph Shoffner</td>
<td>Project Director</td>
</tr>
<tr>
<td>Nancy Slanger</td>
<td>Junior Specialist</td>
</tr>
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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Stuart Beal</td>
<td>Senior Statistician</td>
</tr>
<tr>
<td>Betsy Beamish</td>
<td>Librarian</td>
</tr>
<tr>
<td>George Bell</td>
<td>Librarian</td>
</tr>
<tr>
<td>Barbara Blankenship</td>
<td>Senior Programmer</td>
</tr>
<tr>
<td>Harold Borko</td>
<td>Co-Investigator (Phase IIB)</td>
</tr>
<tr>
<td>Elizabeth Bosted</td>
<td>Research Assistant</td>
</tr>
<tr>
<td>Bruce Briggs</td>
<td>Principal Programmer</td>
</tr>
<tr>
<td>Robert Carmichael</td>
<td>Co-Investigator (Phase IIB)</td>
</tr>
<tr>
<td>Aeil de Boer</td>
<td>RA and Programmer</td>
</tr>
<tr>
<td>Peter Donahoe</td>
<td>Senior Programmer</td>
</tr>
<tr>
<td>Norman Dudley</td>
<td>Librarian</td>
</tr>
<tr>
<td>Kathryn Forrest</td>
<td>Librarian</td>
</tr>
<tr>
<td>Robert Hall</td>
<td>Research Assistant</td>
</tr>
<tr>
<td>Robert Hayes</td>
<td>Principal Investigator (Phase IIA)</td>
</tr>
<tr>
<td>William Jordan</td>
<td>Senior Programmer</td>
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<tr>
<td>William Kehl</td>
<td>Principal Investigator (Phase IIB)</td>
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<tr>
<td>John Knapp</td>
<td>Librarian</td>
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<tr>
<td>Esther Koch</td>
<td>Librarian</td>
</tr>
<tr>
<td>Neil Ludlam</td>
<td>Senior Programmer</td>
</tr>
<tr>
<td>Dwaine Marvick</td>
<td>Faculty Consultant</td>
</tr>
<tr>
<td>Lorraine Mathies</td>
<td>Librarian</td>
</tr>
<tr>
<td>Linda Miroff</td>
<td>Programmer</td>
</tr>
<tr>
<td>Erika Neumann</td>
<td>Coder</td>
</tr>
<tr>
<td>Jerry Pine</td>
<td>Assistant Programmer</td>
</tr>
<tr>
<td>Kevin Reilly</td>
<td>Associate Researcher</td>
</tr>
<tr>
<td>Ida Riordan</td>
<td>Senior Programmer</td>
</tr>
<tr>
<td>Mary Ryan</td>
<td>Librarian</td>
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<tr>
<td>Suzanne Schippleck</td>
<td>Research Assistant</td>
</tr>
<tr>
<td>Steven Silver</td>
<td>Senior Programmer</td>
</tr>
<tr>
<td>Robert Vosper</td>
<td>Co-Investigator (Phase II)</td>
</tr>
<tr>
<td>Peter Watson</td>
<td>Librarian</td>
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<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Robert Carmichael</td>
<td>Supervising EDP System Analyst</td>
</tr>
<tr>
<td>Ralph Shoffner</td>
<td>Specialist</td>
</tr>
</tbody>
</table>
LIBRARY SYSTEMS DEVELOPMENT PROGRAM (LSDP) (University of California)

Herbert Ahn
Fred Bellomy
Donald Bosseau
Robert Carmichael
Jim Corey
Jay Cunningham
Dave Gaughen
Pat Gebhard
Susan Gensel
Anthony Hall
Luke Howe
Loren Ingraham
Lies Jaccarino
Ed Jestes
John Knapp
Gerald Newton
Larry Nicklin
Justine Eberts
Allan Schwartz
Ralph Shoffner
Nancy Smith
John Snyder
Roy Torkington
John Verity
Everett Wallace

Librarian
Supervising EDP System Analyst
Assistant University Librarian (UCSD)
Supervising EDP System Analyst
Senior EDP System Analyst
Associate Specialist
Senior EDP System Analyst
Librarian
Library Assistant
Librarian
Librarian
Senior EDP System Analyst
EDP System Analyst
Librarian
Librarian
Librarian
Administrative Service Officer
Librarian
Coder
Specialist
Senior Programmer
Senior EDP System Analyst
Librarian
Technical Information Specialist
Librarian

INFORMATION PROCESSING LABORATORY FOR EDUCATION AND RESEARCH IN LIBRARY SCIENCE (Office of Education)

William Harrelson
M. E. Maron
Joseph Meredith
Edmond Mignon
Rodney Randall
Donald Sherman
Steven Silver
Stephen Smith
Irene Travis

Assistant Programmer
Principal Investigator
Associate Specialist
Assistant Specialist
Programmer
Specialist
Senior Programmer
Associate Specialist
Assistant Specialist

NEEDS FOR RESEARCH IN LIBRARY AND INFORMATION SCIENCE EDUCATION (Office of Education)

Harold Borko

Principal Investigator
LIBRARY ENVIRONMENTAL DESIGN: PHYSICAL FACILITIES AND EQUIPMENT
(Department of the Army)

LeMoyne Anderson  Consultant
Robert Carmichael  Supervising EDP System Analyst
Edward G. Evans  Principal Investigator
Patricia Ferguson  Public Administrative Analyst
William Gill  Research Assistant
David Hibbert  Research Assistant
Ralph Iredale  Co-Principal Investigator
Linda Jaye  Research Assistant
Peter Kamnitzer  Co-Principal Investigator
Mary Moore  Research Assistant
Christy Robbins  Public Administrative Analyst
Janis Ripa  Co-Principal Investigator
Thomas Vreeland

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ERIC
RESEARCH PROJECTS

Research projects were conducted at both branches of the Institute during this reporting period. They included activities directed towards identifying and documenting the basic problems in on-line information storage and retrieval, creating programs and defining formulas in text processing to derive the semantic foundations for question-answering systems, and continued experimenting with data bases stored on magnetic tape.

ORGANIZATION AND SEARCH OF BIBLIOGRAPHIC HOLDINGS RECORDS IN ON-LINE COMPUTER SYSTEMS

Administrative

Principal Investigator: Professor M. E. Maron
Project Director: Ralph Shoffner
Sponsoring Agency: Office of Education
Period: 7/1/67 to 6/30/68 (Phase I)
         7/1/68 to 6/30/70 (Phase II); extended.
Amount: $179,000 Phase I (completed)
        $309,873 Phase II (completed; documentation continues)

Purpose

The purpose of this project was to develop and implement a research facility that may be used to investigate problems of file organization and interactive search for on-line retrieval systems accommodating large files of bibliographic records in the MARC II structure format. Various data bases, ranging in size from 500 to 94,000 records, have been created and stored on a direct access storage facility (disk). Major areas of research, development, and experimentation...
include: code compression for most effective storage representation of
the master files, multi-level inverted index structures for file access,
input conversion, analysis of file characteristics, facilities for
evaluation of complex Boolean search arguments and dynamic processing
of queries, and methods for handling certain classes of predictable
user input errors in search keys. During the current year the focus
of the work has been to organize the materials for the Final Report.

Reports

Aiyer, Arjun K. The CIMARON SYSTEM: Modular Programs for the
Organization and Search of Large Files. Institute of
Library Research, University of California, Berkeley.
1971 (In preparation).

Shoffner, Ralph M. and Jay L. Cunningham, editors. The Organization
and Search of Bibliographic Records: Components Studies
Institute of Library Research, University of California,

Shoffner, Ralph M., Cunningham, Jay L., and Allan J. Humphrey. The Organization and Search of Bibliographic Records in
On-Line Computer Systems: Phase II, Project Summary
Institute of Library Research, University of California,

Silver, Stephen S. and Joseph C. Meredith. The DISCUS Interactive
System User's Manual. Institute of Library Research,
University of California, Berkeley. 1971. 1

Smith, Stephen F. and William Harrelson. TMS: Terminal Monitor
System User's Guide. Institute of Library Research,
University of California, Berkeley. 1971. 1

SEMANTIC FOUNDATIONS FOR QUESTION-ANSWERING SYSTEMS (SEMQAS)

Administrative

Principal Investigator: Professor Harold Borko

Project Manager: John Olney (Co-Investigator for Phase II)

1 These reports are also listed under the Information Processing
Laboratory Project, since the work was jointly supported.
Purpose

The purpose of this project is to computationally derive linguistic data to be used for foundational work on the semantics of languages suitable for question-answering systems and for fact retrieval. The major effort in Phase I was to obtain and analyze data sets pertaining to run-on words and defining formulas. Current efforts in Phase II are to complete the semantic disambiguation of all occurrences of defining formulas in W7 and MPD (two dictionaries previously transcribed onto magnetic tape); complete the study of coordination patterns among the formulas; provide rules for predicting accurately the meaning effects of affixes; and experiment with semi-automatic techniques for constructing semantic fields for medical terms.

Reports


Working Papers

The Institute continued to exercise an important role in the development and introduction of new aspects of mechanization to the University of California libraries. University-wide activities initiated or planned through earlier Task Force efforts were expanded in scope and depth by the University of California Library System Development Program established at UC Santa Barbara by the Institute. The Los Angeles branch of the Institute vigorously continued the design phase of a Center for Information Services (CIS) and established experimental data base services. The University of California Union Catalog Supplement (UCUCS), a major project of the UC Berkeley branch of the Institute, progressed through the data base generation and publication planning phases.

**UNIVERSITY OF CALIFORNIA UNION CATALOG SUPPLEMENT**

**Administrative**

Project Director: R. M. Shoffner  
Project Manager: Allan Humphrey  
Sponsoring Agency: University of California  
Period: 11/1/68 to 6/30/72 in three phases (First Supplement)  
Amount: $100,000 Phase I (Completed)  
$553,896 Phase II  
$568,000 Phase III

**Purpose**

During the period 1963-1967, the libraries of the University acquired and cataloged over 1,020,000 titles which were new to the individual
nine campuses. The purpose of this project is to produce a book form Union Catalog by converting the bibliographic records of these new holdings to machine form and using computer techniques for its production. It is estimated that the Catalog will contain over 800,000 unique entries.

To achieve maximum value and re-use of the machine record, the project is committed to producing a MARC-compatible record, both as to structure and content. The machine record is created by an approach termed Automatic Field Recognition. In this system, no pre- or post-editing or tagging schemes are required; instead, computer algorithms work with the natural format of the catalog card to identify MARC-defined bibliographic data elements.

The first phase of the project, to develop and test a prototype production and programming system to verify the design concept, was done during 1969-1970. The second phase of the project is to perform the conversion and system processing on the entire file at a production rate in excess of 20,000 MARC II records per week. This phase began in October 1970 and will be completed in Autumn 1971. A third phase is also currently in progress whose goal is to upgrade the structure and error-free quality of the data, and to provide a graphic arts quality printed catalog. Production of this catalog is scheduled for completion in June 1972. Initial study of the problems of production of the second supplement (1968-72) is scheduled to begin January 1972.

Reports


DEVELOPMENT OF A CENTER FOR INFORMATION SERVICES PHASE II: DETAILED SYSTEM DESIGN. (Phase IIA Completed; Phase IIB Initiated During Year)

Administrative

Principal Investigator: Professor R. M. Hayes (Phase IIA)
                   Mr. William B. Kehl (Phase IIB)

Co-Principal Investigators: Mr. Robert Vosper (Phase IIA, IIB)
                           Mr. William B. Kehl (Phase IIA)
                           Professor Harold Borko (Phase IIB)
                           Mr. Robert L. Carmichael (Phase IIB)

Project Managers: Robert L. Carmichael - Institute of Library Research
                  Bruce Briggs - Campus Computing Network
                  Peter G. Watson - University Library

Sponsoring Agency: National Science Foundation

Period: 7/1/69 - 12/31/70 Phase IIA (Continued to 6/30/71)
        1/1/71 - 6/30/72 Phase IIB

Amount: $208,400 Phase IIA (ILR)
        $300,056 Phase IIB (CCN): ($38,041 budgeted to ILR)
Purpose

The National Science Foundation, Office of Science Information Services, awarded Phase IIA of this grant to the Institute of Library Research of the University of California to initiate development of a "Center for Information Services" on the UCLA campus. The purpose of the Center is to provide a capability, in the University Library, to acquire magnetic tape data bases of a variety of kinds and, in cooperation with the Campus Computing Network, to provide various kinds of mechanized information services from them to the University community.

Phase IIA goals were to develop specifications for the Center, programs for the use of multiple data bases, and experimental experience with mechanized information services. Results are documented in the seven-part Phase IIA Final Report. Phase IIA was performed under the auspices of the Institute of Library Research with the joint participation of the Institute, the Campus Computing Network, and the University Library.

Phase IIB responsibility was awarded to the Campus Computing Network, as planned, when task emphasis changed to detailed program specifications and design, prototype development, and the offering of experimental data base services using interim software. Joint participation continues with the Institute principally concerned with coordination, documentation, reporting, test and evaluation, and the user interface. Basic Library concerns include service aspects, development of procedures, and acquisition of data bases. After Phase III installation and shakedown, project responsibility will then be transferred to the University Library for system operation, evaluation, and maintenance, with CCN and Institute support.
Reports


Watson, Peter G. "Planning a Center for Information Services for the University Library", Law Library Journal. 64(2), May 1971.

Final Report for CIS Phase IIA (Parts 1 - 7).


OPERATIONS TASK FORCE PROJECT

Administrative

Project Director: R. M. Shoffner

Sponsoring Agency: University of California

Period: 3/1/65 - Continuing

Amount: Budgeted from year-to-year

Purpose

The libraries of the University of California have been faced with many urgent problems for which generally applicable solutions must be found as soon as possible. The Operations Task Force Project was established to provide a state-wide agent for development of methods compatible with the needs of each campus, but applicable university-wide. Examples of the problems with which the Operations Task Force Project has been concerned include: (1) coordination of campus-based programs
for mechanization, (2) inter-campus circulation studies, (3) methods for producing supplements to the university-wide book catalog.

During 1969-70 a major planning effort was carried out in cooperation with the librarians and library systems staff of the nine campuses. The purpose of this effort was to define a concerted program for library mechanization and it led to the establishment of the Library Systems Development Program (LSDP) in July 1970. The Task Force functions concerned with coordination and management in the University of California were transferred to the LSDP project at that time. During 1970-71 the Task Force Project provided support to the ILR management, particularly in the coordination of on-going projects* with important future benefits to library automation.

LIBRARY SYSTEMS DEVELOPMENT PROGRAM

Administrative

Program Manager: Fred L. Bellomy
Sponsoring Agency: University of California
Period: 7/1/70 - 6/30/71 (First Year)
Amount: $124,000 (President's Office)
        $169,000 (University Libraries)
        $293,000

Purpose

The Library Systems Development Program (LSDP) was established in June 1970 as a project of the Institute with the Project Manager and the central development staff located on the UC Santa Barbara campus. The goal of this intramurally funded activity is to plan, specify, design, develop, and test computer based modules and subsystems for implementation on all campuses of the University of California. During fiscal year 1971

*These projects are reported elsewhere and include the Information Processing Laboratory, Center for Information Services, File Organization, and Catalog Supplement Projects.
this project, which also assumed the functions of the earlier Task Force project, conducted a Feasibility Phase study at the request of the President's office. The primary objective of this activity was to determine and to relate library costs, program benefits and alternate approaches as a basis for funding planned development activities. Eight major tasks were undertaken and the Program Review Committee of the UC Library Council provided project guidance and a reporting channel for LSDP during this period.

The first task was a study of potential cost benefits. It included, (1) an analysis of library functions to determine how great the replaceable costs might be and, (2) what may be the most comprehensive measurement (using cost accounting techniques) of existing manual library costs ever attempted by any organization the size of the University of California.

The second task was a study of potential service benefits. This included a questionnaire sent to a sample of 5000 UC Library users to assess their satisfaction with existing library services and their expectations for further growth. Along with this user's study an in depth analysis was performed of the service benefits which should be expected from the mechanization of the book ordering and circulation functions.

The third task was a study of alternate means for using computers for ordering and circulating books. The computing needs of all of the libraries were determined for these two functions and the capabilities of several computer configurations were simulated. The LSDP staff worked closely with the Coordinator of Computer Activities in the office of the UC President to insure that forthcoming recommendations would be in accord with the University's Master Plan for Computers.
The fourth task was a test of the proposed development methods. This test which envolves the development of a University-wide Subject Authority Control system is still in progress.

The fifth task was the installation of a mechanized project management system (now in operation), and the sixth task was to study the feasibility of integrating the UC funded Catalog Supplement Project into the LSDP Project. This Institute of Library Research (ILR) project has produced results of potential use to the LSDP Project, and efforts to make use of these are continuing. In a similar vein, the seventh task was to study the feasibility of integrating the extramurally funded Center for Information Services Project into the LSDP Project. This UCLA/ILR project is still in the early development stages and the long range implications for other UC Libraries are still being studied.

The final task (eighth) was the development of a UC Union List of Serials. This effort is progressing toward successful completion by December 1971.

The list of documents shown below does not include all of the reports published by the LSDP central staff and the individual task teams.

Reports (Central Office)

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Author, Title, Date</th>
</tr>
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<tbody>
<tr>
<td>LSD 70- 1</td>
<td>Bellomy, Fred. Structure of the LSD Program Task Team. June 1, 1970.</td>
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<td>Document Number</td>
<td>Author, Title, Date</td>
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<td>LSD 70-41</td>
<td>Bellomy, Fred. Cost Benefits of the LSD Program.</td>
</tr>
<tr>
<td>LSD 71-14</td>
<td>Bellomy, Fred. Analysis of Interface Requirements for Heterogeneous Terminal Configurations.</td>
</tr>
</tbody>
</table>

Reports (Task Team Areas)

Gaughen, Dave.  
A Cost Accounting Scheme, Format, and Procedures for 1 April 1971 Budget Justification.  
November 18, 1970.

Carmichael, Robert.  
Proposed CIS Phase IIB Tasks and Documentation Topics.  
November 2, 1970.

Carmichael, Robert.  
First Progress Report: CIS/LSD Integration Planning (7/70 - 12/70).  
January 6, 1971.

Cunningham, Jay.  
Task 6--UCUCS-LSD Integration.  
November 1970.

Roberts, Justine.  
Literature Search-Study Effectiveness Benefits.  
August 8, 1970.

Roberts, Justine.  
LSD Benefits for Public Institutions of Higher Education in California.  
September 8, 1970.

Roberts, Justine.  
DDT Test Report Narrative.  
October 7, 1970.

Roberts, Justine.  
Preliminary Report--Pilot DDT Test.  
October 21, 1970.

Roberts, Justine.  
Effectiveness Parameters Related to LSD.  
November 2, 1970.

Roberts, Justine.  
Users Survey Summary and Explanation.  

Roberts, Justine.  
Document Delivery Test Final Tabulation.  
March 16, 1971.

Jaccarino, Lies.  
Hardware Tradeoff Study.  
August 18, 1970.

Sherman, Don.  
Proposed UC Format for Authority Control Record.  

Knapp, John.  
SAC File Structure.  

Torkington, Roy.  
SAC Format Supplement.  
December 1970.


Legend:

LSD - Library Systems Development Program (Central Office).
CBA - Cost Benefit Analysis (Task 1).
CIS - Center for Information Services (Task 7).
CSP - Catalog Supplement Project (Task 6).
EBA - Effectiveness Benefit Analysis (Task 2).
HAS - Hardware Alternatives Study (Task 3).
SAC - Subject Authority Control (Task 4).
ULS - Union List of Serials (Task 8).
EDUCATION PROJECTS

A major component of the program of the Institute of Library Research is the advancement of education in librarianship, information science, and documentation. In part, the extent of the commitment of the Institute to education is represented by the heavy use of students in projects as research assistants. They have come from business administration, from mathematics, from engineering, from English, and from other departments, as well as from the two library schools. Although most Institute activities directly or indirectly provide knowledge or tools that advance education, the Institute has been responsible for a number of projects designed to meet an educational requirement. One project sponsored by NLM, "Education of Medical Library Systems Analysts," has been especially successful and the administration of this long-term continuing grant was transferred from ILR to the UCLA Graduate School of Library Service at the beginning of this reporting period.

AN INFORMATION PROCESSING LABORATORY FOR EDUCATION AND RESEARCH IN LIBRARY SCIENCE

Administrative

Principal Investigator: Professor M. E. Maron
Project Manager: D. Sherman
Sponsoring Agency: Office of Education
Period: 6/15/67 - 12/14/68 Phase I
        12/15/68 - 7/5/70 Phase II
Amount: $141,763 Phase I
        $200,000 Phase II
Purpose

It is the objective of this project to design, implement, operate, and evaluate a computer-based laboratory that is to assist in meeting the educational and research needs of students in librarianship. The laboratory functions in an on-line, interactive setting provided by a network of remote terminals (both mechanical and cathode ray tube) linked to a central digital computer. Software developed to date emphasizes the demonstration and teaching of formal methods of intellectual access to stored information in addition to use of the computer in instructing students in topics of traditional librarianship.

Phase I of the project emphasized planning and initial program development. The major Phase I activities included implementation of a Time Sharing Monitor, Associative Search System, and Computer Assisted Instruction courses in Subject Cataloging. Phase II of the project emphasized operational aspects of the Laboratory and integration with Library School curricula. During the 1969-1970 academic year over 200 students in the Berkeley School of Librarianship utilized the Laboratory's three video terminals. The Laboratory's inventory of programs includes: Reference Search, Associative Search, MARC II Retrieval, and a high level computer language for writing Computer Assisted Instruction modules.

The work of the past year has been devoted to the organization of the Final Report material.

Reports

Marom, M. E. et al. An Information Processing Laboratory for Education and Research in Library Science: Phase II. (In Preparation.)
A STUDY OF THE NEEDS FOR RESEARCH IN LIBRARY AND INFORMATION SCIENCE EDUCATION

Administrative

Project Director: Professor H. Borko

Sponsoring Agency: U. S. Office of Education

Period: 4/24/69 to 4/30/70 (extended to 10/31/70)

Amount: $54,109

Purpose

The purpose of this study is to determine the needs for research in education for librarianship, including consideration of library and information science. It was submitted to the Office of Education with the sponsorship of the American Association of Library Schools, as a means for establishing guidelines and recommended priorities for such research.

These reports are also listed under the File Organization Project, since the work was jointly supported.
Reports

PUBLIC SERVICE

The Institute of Library Research has continued to service the public sector through projects designed to serve libraries of the State of California and of the nation; through discussions with people from throughout the world; and through participation of its staff in professional activities, Institute staff members have visited many institutions and given talks and conducted seminars with diverse audiences. Many visitors, foreign and domestic, visited the Institute during the past year for discussions or study, and many requests were received, and serviced, for copies of Institute papers and reports. A continuing effort exists to establish projects whose results have demonstrable utility in the areas of librarianship and information science and to organize them so that this utility may be achieved.

LIBRARY ENVIRONMENTAL DESIGN: PHYSICAL FACILITIES AND EQUIPMENT. (TISA WORK UNIT 02/014)

Administrative

Principal Investigator: Professor G. Edward Evans

Co-Principal Investigators: Professor Peter Kamnitzer
Professor Thomas Vreeland
Professor Ralph Iredale

Sponsoring Agency: Department of the Army

Period: 10/1/70 to 10/31/71 (extended to 12/31/71)

Amount: $98,597 (Phase I)

Review and Status

Phase I of this TISA Work Unit extends to 31 December 1971. The result of this first year's effort will be a Final Report that contains
an evaluative state-of-the-art review of current library building practices. Areas in need of further research will be identified and alternatives to present practices suggested. Phase II of this effort as initially proposed to the contracting agency, if approved, would require three additional years and would culminate in a prototype of a guided inquiry system designed to take the user through all the steps necessary for the successful planning and completion of a required library facility.

The TISA Work Unit (Library Environmental Design: Physical Facilities and Equipment) is the result of contractual agreement between the Regents of the University of California and Department of the Army. Conceived as a joint effort of librarians and architects, the work is being carried out by the Institute of Library Research and the Urban Innovations Group at UCLA. This project is part of a series of TISA [Technical Information Support Activities] contracts with various groups. Preliminary discussions concerning the need for this full scale study on designing and equipping library physical facilities covered a two year period. A number of other groups were consulted and have some interest in the project. The Federal Library Committee and the American Library Association have the most active interest of any of the non-contractual parties.

Funds are controlled by the Institute of Library Research as are administrative matters. Project staff includes one investigator, three co-investigators, one consultant, one full-time project assistant, and three research assistants. Three quarterly reports on progress have been submitted to the contracting agency, the last an Interim Report containing partial drafts of the evaluative state-of-the-art
Final Report. As part of the administrative organization of the project, an advisory panel of six members has been set up. Panelists serve several functions: a) review and comment on the methodology proposed for the study, b) suggest areas for further research, c) read the draft of material prepared for the final report and present comments. Two in-person meetings of the panelists, contracting agency and Work Unit staff have been held; on 21 January 1971 at UCLA, and 9 June 1971 at Corps of Engineers Headquarters in San Francisco. A third is planned for 13 August 1971 at UCLA.

Reports


First: 1 October 1970 to 31 December 1970
Second: 1 January 1971 to 31 March 1971
Third: 1 April 1971 to 30 June 1971