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ABSTRACT

Job advertisements listed in "American Libraries" and "Library Hotline" from January 1993 to January 1997 and archived through the Hypertext Archives for LIBJOBS from August 1995 to January 1997 were examined to determine the job opportunities and qualifications for systems librarians. The job opportunities were analyzed in terms of the type of employing institution, the geographic location, the minimum salary, and the position level. The job qualifications were analyzed in terms of the degrees required, the minimum amount of experience required, and the specialized knowledge or experience required or preferred. Among the major findings of this study were the following: (1) there are more systems librarian positions in academic libraries than in public or special libraries; (2) the minimum salaries offered tend to fall in the $20,001 to $45,000 range; (3) the majority of the positions require an MLS degree although sometimes a computer degree may be substituted for an MLS degree; (4) experience is always required; and (5) knowledge or experience with library housekeeping systems, networks or networking, and operating systems or environments is desirable. (Contains 18 references.) (Author)

CONTENT ANALYSIS OF JOB ADVERTISEMENTS FOR SYSTEMS LIBRARIANS

A Master's Research Paper submitted to the
Kent State University School of Library Science
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for the degree Master of Library Science

by

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Abstract

Job advertisements listed in American Libraries and Library Hotline from January 1993 to January 1997 and archived through the Hypertext Archives for LIBJOBS from August 1995 to January 1997 were examined to determine the job opportunities and qualifications for systems librarians. The job opportunities were analyzed in terms of the type of employing institution, the geographic location, the minimum salary, and the position level. The job qualifications were analyzed in terms of the degrees required, the minimum amount of experience required, and the specialized knowledge or experience required or preferred. Among the major findings of this study were the following: (1) there are more systems librarian positions in academic libraries than in public or special libraries, (2) the minimum salaries offered tend to fall in the $20,001 to $45,000 range, (3) the majority of the positions require an M.L.S. degree although sometimes a computer degree may be substituted for an M.L.S. degree, (4) experience is always required, and (5) knowledge or experience with library housekeeping systems, networks or networking, and operating systems or environments is desirable.

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CHAPTER 1

INTRODUCTION

The introduction of computer-based systems into libraries created a need for individuals with specialized knowledge and experience in this area. Consequently, a new kind of librarian, commonly known as the systems librarian, has emerged to meet this need. The demand for systems librarians will grow in the future as libraries continue to install and enhance systems and the complexity of information technology increases.

The systems librarian is an important member of the library staff. The systems librarian is responsible for the effective functioning of the library's computer-based systems. Most library functions and services are dependent on these systems so this is an enormous responsibility. Although the systems librarian is crucial to the successful operation of the library, little attention has been focused on this position.

The lack of attention that the systems librarian position has received is well documented in the literature. Susan K. Martin notes that of all "the specialist positions that exist in libraries, none is as under-examined as those of the systems librarians."[1] Furthermore, Barbara G. Leonard states that "although the person responsible for library and computer systems is crucial to the effective functioning of the library, the responsibilities and organizational place of this key individual are not well documented."[2]

Finally, Graeme A. Muirhead remarks that the systems librarian position has "received only scant attention in the professional press."[3]

It is obvious that more research needs to be conducted on the systems librarian position. One area in need of examination is the job market for systems librarians. An examination of the job market would be valuable to individuals interested in pursuing careers as systems librarians since it would identify the education, knowledge, and experience required by employers. Furthermore, it would be useful to library schools for modifying their curricula to provide prospective systems librarians with the knowledge specified by employers. Finally, an examination of the job market would contribute to the existing literature related to the systems librarian position and may provide a better understanding of this important position.

Purpose of the Study

The purpose of this study is to determine the current job opportunities and qualifications for systems librarians. It examines the current job opportunities in terms of the type of employing institution, the geographic location, the minimum salary, and the level of the position. It also examines the current job qualifications in terms of the degrees required, the minimum amount of experience required, and the specialized knowledge or experience required or preferred.

Definitions of Terms

A *bibliographic utility* is "a network comprising a central computer system with a

large database of cataloging records linked by telecommunications facilities to libraries."[4] Representative bibliographic utilities in North America include OCLC (Online Computer Library Center), RLIN (Research Libraries Information Network), WLN (Western Library Network), and UTLAS (University of Toronto Library Automation System).

CD-ROM technology is any technology related to CD-ROMs.

For the purpose of this study, a *computer-based library system* is defined as a library housekeeping system.

Computer hardware is defined as the physical equipment and peripheral devices comprising a computer.

Computer software is defined as the computer programs used to direct the operations of a computer.

For the purpose of this study, *information technology* is defined as technology related to computers such as CD-ROMs, networks, and telecommunications.

The *Internet* is a collection of networks running the TCP/IP protocol.[5]

A *library housekeeping system* improves or increases the efficiency of basic library functions such as acquisitions, cataloguing, circulation, OPAC (Online Public Access Catalog), serials control, and interlibrary lending.[6] The most common type of library housekeeping system is an integrated library system which combines all of the basic library functions.

MARC (machine-readable cataloging) format is "a communication format

originally developed by the Library of Congress and now used worldwide for producing and distributing bibliographic records by computer."[7]

For the purpose of this study, an *M.L.I.S. (Master of Library and Information Studies)* degree is equivalent to an *M.L.S. (Master of Library Science)* degree.

A *network* is a system of interconnected computers that can communicate with each other and share resources. Networks include local area networks (LANs) and wide area networks (WANs). *Networking* refers to the techniques and principles used to develop and maintain networks.

Operating systems and environments act as an intermediary between the computer hardware and application programs. Operating systems and environments include DOS, Mac OS, OS/2, Unix, VMS, and Windows.

Programming languages are sets of instructions that instruct the computer to perform specific tasks. Programming languages include machine language, assembly language, BASIC, C, C++, COBOL, FORTRAN, LISP, Pascal, Perl, and PL/1.

A *systems librarian* is a person with primary responsibility for one or more computer-based library systems. A systems librarian may also be responsible for aspects of information technology.

Telecommunications involve the transmission and reception of data in the form of electromagnetic signals using transmission lines. Telecommunications include electronic mail, teleconferencing, and telefacsimile (FAX).

The *World Wide Web (WWW)* is "a network of over 10,000 information servers linked by the hyperlink protocol developed by CERN."[8]

Limitations of the Study

This study is limited to the job advertisements for systems librarians listed in the January 1993 through January 1997 issues of American Libraries and Library Hotline. It is also limited to the advertisements archived through the Hypertext Archives for LIBJOBS (http://www.nlc-bnc.ca/cgi-bin/ifla-lwgate/LIBJOBS/archives/) for systems librarians from August 1995 to January 1997. Consequently, the findings are not necessarily generalizable to all systems librarian positions. However, the findings are an indication of the current trends that exist related to the job opportunities and qualifications for systems librarians.

CHAPTER 2

LITERATURE REVIEW

The emergence of the systems librarian position is a relatively recent phenomenon. Consequently, much of the existing literature related to this position has been concerned with examining the role and responsibilities of the systems librarian. The role and responsibilities of the systems librarian have been examined through the use of job advertisements and surveys.

Some researchers have employed job advertisements to examine the systems librarian position. For example, John M. Budd[9] examined job advertisements for systems librarians to determine the minimum salary offered by potential employers. He analyzed the advertisements listed in American Libraries, Library Hotline, and College & Research Libraries News for the calendar year of 1988. He discovered that the mean salary advertised for systems librarians in 1988 was $27,568 and that the salaries were dependent on the type of library and the place of the position within the library. He also discovered that some potential employers did not require a Master's of Library Science (M.L.S.) degree which meant that libraries were sometimes in competition with other fields for qualified individuals. He found that although the mean salary advertised for systems librarians was higher than the salaries for beginning librarians and new graduates

of accredited library science programs, it was much lower than the salaries offered by other fields. Budd concluded that higher salaries may be needed to compete with these other fields for qualified individuals.

In 1988, Susan K. Martin[10] analyzed job advertisements for systems librarians to determine the responsibilities associated with this position. She discovered that the typical job responsibilities mentioned in the advertisements were the implementation of an already identified integrated system or the identification of such a system for purchase and implementation.

Felix T. Chu[11] examined numerous job advertisements for systems librarians in 1990 and found a very fuzzy definition of the duties of the position. However, he discovered that many of the positions involved three stages related to library systems: planning, installation and/or implementation, and maintenance. He concluded that the duties of the systems librarian needed clearer definition.

In addition, one researcher employed job advertisements to examine the job market for all types of positions including the systems librarian position. Camille Cote[12] used job advertisements to study the library job market in Quebec. She analyzed job advertisements posted at the McGill Graduate School of Library and Information Studies from May 1987 to June 1988. One of the main objectives of this study was to establish what jobs existed in the information sector. She discovered that more than half of the advertisements were for jobs in the following areas: administration or management

(38.4%), reference or online reference (13.9%), and systems or automation (11.8%). The fact that systems or automation jobs ranked third is significant because it illustrates the growing dependence of libraries on systems librarians.

Some researchers have employed surveys to examine the systems librarian position. For example, Darrell L. Jenkins[13] surveyed systems librarians in academic libraries during 1981 to identify their responsibilities and duties. He found that the range of responsibilities and duties varied among systems librarians. However, some of the more representative duties included the design, implementation, and evaluation of an integrated system; recommendations for system design and development; and the coordination of long range planning.

Graeme A. Muirhead[14] sent questionnaires out to all kinds of libraries in the United Kingdom from October 1991 to December 1991. The goal of the survey was to gather data about the job duties of practicing systems librarians. The results of the survey indicated that the duties of systems librarians varied greatly. However, Muirhead grouped the duties of systems librarians into two categories: library housekeeping and information technology. He discovered that the duties related to library housekeeping frequently involved the planning, implementation, and maintenance of library housekeeping systems while the duties related to information technology frequently included CD-ROMs, microcomputers, and networks. He concluded that despite the apparent lack of homogeneity associated with the systems librarian position, there are

nonetheless broad similarities between the tasks and functions performed by many systems librarians.

Another survey was conducted in 1991 by the Publications Committee of the Systems and Services Section (SASS) of the Library Administration and Management Association (LAMA). Barbara G. Leonard[15] states that the purpose of the survey was to determine the responsibilities of systems librarians in academic libraries. The committee designated five areas in which it thought systems librarians would be involved to determine the degree of responsibility associated with each area. The areas were mainframes, minicomputers, microcomputers, CD-ROM systems, and local area networks (LANs). The respondents reported that most of their responsibilities fell under microcomputer use, with CD-ROMs and LANs tied for second, and mainframes and minicomputers ranking third.

The survey also examined the specialized knowledge associated with the systems librarian position. Karen A. Hatcher[16] states that the survey asked practicing systems librarians what knowledge would be required of a new systems librarian. The respondents indicated the following areas of knowledge: project management, hardware, software, telecommunications, local area networks, CD-ROM technology, computer systems, and programming. The respondents also felt that library knowledge was essential.

The Office of Management Services[17] of the Association of Research Libraries

(ARL) conducted a survey in November 1994. The survey was distributed to all 119 ARL member libraries and was designed to document some of the changes that have occurred in the organization of systems offices. One of the questions on the survey asked respondents to indicate the major responsibilities of their systems office. The most frequently reported responsibility was the maintenance of computer-based library systems. Other frequently reported responsibilities included the purchase of hardware and software; LANs; Gopher, Mosaic, etc.; CD-ROMs; and bibliographic utilities.

The preceding literature review confirms this investigator's premise that the current job opportunities and qualifications for systems librarians need to be examined. The review of the literature indicates that none of the studies analyzing job advertisements focused directly on the job opportunities and qualifications for systems librarians. In addition, the findings of the surveys are based on the answers provided by practicing systems librarians and may not necessarily reflect the job market for these librarians.

CHAPTER 3

METHODOLOGY

Content analysis is used to analyze job advertisements for systems librarians. Content analysis is a methodology "used to identify and record the meaning of documents and other forms of communication in a systematic and quantitative way."[18] (See Appendix A for coding form.) The current job opportunities are analyzed in terms of the type of employing institution, the geographic location, the minimum salary, and the level of the position. The current job qualifications are also analyzed in terms of the degrees required, the minimum amount of experience required, and the specialized knowledge or experience required or preferred. The specialized knowledge or experience is examined for the following areas: bibliographic utilities or MARC format, CD-ROM technology, computer hardware, computer software, Internet or World Wide Web, library housekeeping systems, networks or networking, operating systems or environments, programming languages, and telecommunications.

Job advertisements for systems librarians in the January 1993 through January 1997 issues of American Libraries and Library Hotline are analyzed. Job advertisements for systems librarians archived through the Hypertext Archives for LIBJOBS (http://www.nlc-bnc.ca/cgi-bin/ifla-lwgate/LIBJOBS/archives) from August 1995 through

January 1997 are also analyzed. These sources were selected because they list advertisements for all types of libraries. As a result, it is assumed that a representative sample exists in these sources.

A survey conducted by the authors of the annual ALA Survey of Librarian Salaries in 1994 found that more than one hundred and thirty different job titles may be used to designate the systems librarian position.[19] Consequently, it was not possible to code advertisements for systems librarians on the basis of job title. Instead, job advertisements are coded when the description of the position entails primary responsibility for one or more computer-based library systems. The only exception is advertisements for systems librarians and automation librarians which are automatically coded.

The employing institution type is coded for academic library, public library, special library, academic library consortium, and public library consortium. An academic library is that of an university, polytechnic, college, school, or other institution forming part of, or associated with, an educational institution.[20] A public library is "a library provided wholly or partly from public funds, and the use of which is not restricted to any class of persons in the community but is freely available to all."[21] A special library is "a library or information center maintained by an individual, corporation, association, government agency, or any other group, or a specialized or departmental collection within a library."[22] For the purpose of this study, a special library within an academic library is considered to be an academic library. An academic library consortium is two or more

academic libraries involved in resource sharing while a public library consortium is two or more public libraries involved in resource sharing. The type of employing institution is determined from the name or the description of the institution provided in the advertisement. If the employing institution type does not fall into one of the categories, "other type of employing institution" is used. If the advertisement does not provide information about the type of institution or the type of institution can not be determined from the advertisement, "type of employing institution not specified" is used.

The geographic location is based on the four regions of the United States developed by the Bureau of the Census.[23] These four regions are the northeast, the midwest, the south, and the west. The northeast includes Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The midwest includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The south includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. The west includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. The geographic location is determined from the name, address, or description of the employing institution. If the geographic location is not provided or can not be determined from the advertisement, "geographic location not specified" is used.

Many employing institutions advertise a minimum salary that is negotiable based on qualifications and/or experience so the minimum salary is recorded. The minimum salary categories range from "$15,000 and less" to "$60,001 and more" and are divided by increments of $4,999. If a range is provided, the minimum salary of the range is recorded. If the advertisement does not provide a salary, "numerical amount not specified" is used.

The level of the position is coded for administrative and non-administrative. A position is considered to be administrative if the advertisement explicitly states it as being administrative or if it entails providing leadership related to computer-based systems and supervision of systems staff. If the position does not meet the above criteria then it is coded as being non-administrative.

John M. Budd[24] discovered that employing institutions are somewhat flexible in the hiring of systems librarians since the successful applicant may not have an M.L.S. degree. Consequently, the degrees required is coded for the following categories: M.L.S., B.S. in a computer related field, M.L.S. or B.S. in a computer related field, B.S. in Computer Science, M.L.S. or B.S. in Computer Science, M.S. in a computer related field, M.L.S. or M.S. in a computer related field, M.S. in Computer Science, and M.L.S. or M.S. in Computer Science. In addition, these categories are further subdivided to indicate whether or not an ALA-accredited M.L.S. degree is required. If the advertisement specifies both a degree in a computer related field or Computer Science as

acceptable then a degree in a computer related field is coded. If the advertisement specifies a category not present on the coding form, "other degree(s) specified" is used. If the advertisement does not include information about the degrees required, "no degree(s) specified" is used.

A study conducted by Blaise Cronin, Michael Stiffler, and Dorothy Day[25] found that openings in the information sector are not targeted at entry level professionals lacking experience. Consequently, some relatively longer time periods are included in the minimum amount of experience required. The categories for the minimum amount of experience required range from "less than one year" to "eleven or more years" with the intermediary categories divided by two year periods. If the position does not require any experience, "experience not required" is used. If the advertisement does not provide a numerical time period, "amount not specified" is used.

The last ten questions are related to the specialized knowledge or experience required or preferred by employers. These questions are coded as specifying or not specifying knowledge or experience related to bibliographic utilities or MARC format, CD-ROM technology, computer hardware, computer software, Internet or World Wide Web, library housekeeping systems, networks or networking, operating systems or environments, programming languages, and telecommunications. The specialized knowledge or experience must be explicitly specified as being required or preferred and should not be implied from the responsibilities of the position.

CHAPTER 4

ANALYSIS OF THE DATA

A total of 305 job advertisements for systems librarians were analyzed in terms of the type of employing institution, the geographic location, the minimum salary, the level of the position, the degrees required, the minimum amount of experience required, and the specialized knowledge or experience required or preferred by employers.

The majority (177 or 58.0%) of the advertisements analyzed are for positions in academic libraries while 59 (19.3%) are for positions in public libraries and 41 (13.4%) are for positions in special libraries. Only 15 (4.9%) of the advertisements are for positions in public library consortiums, and only 3 (1.0%) of the advertisements are for positions in academic library consortiums. (See Table 1.)

The number of job advertisements for systems librarians varies among the four geographic areas. The south has the highest number of advertised positions (93 or 30.5%) followed by the northeast (89 or 29.2%), the midwest (77 or 25.2%), and the west (46 or 15.1%). (See Table 2.)

Table 1
Distribution of Systems Librarian Positions by Type of Institution

Type of Institution	f	%
Academic library	177	58.0
Public library	59	19.3
Special library	41	13.4
Academic library consortium	3	1.0
Public library consortium	15	4.9
Other type of employing institution	4	1.3
Type of employing institution not specified	6	2.0
Total	305	100.0

Table 2
Distribution of Systems Librarian Positions by Geographic Location

Geographic Location	f	%
Northeast	89	29.2
Midwest	77	25.2
South	93	30.5
West	46	15.1
Geographic location not specified	0	0.0
Total	305	100.0

More than half (205 or 67.3%) of the advertisements analyzed offer a minimum salary between $20,001 and $45,000 with 19 (6.2%) in the $20,001 to $25,000 range, 70 (23.0%) in the $25,001 to $30,000 range, 56 (18.4%) in the $30,001 to $35,000 range, 43

(14.1%) in the $35,001 to $40,000 range, and 17 (5.6%) in the $40,001 to $45,000 range. Only 2 (0.7%) of the advertisements offer a minimum salary below $20,001, and only 17 (5.6%) of the advertisements offer a minimum salary above $45,000. The minimum salary is not specified in 81 (26.6%) of the advertisements. (See Table 3.)

The majority (215 or 70.5%) of the advertisements are for non-administrative positions while 90 (29.5%) are for administrative positions. (See Table 4.)

More than half (189 or 62.0%) of the positions require an M.L.S. degree with 157 (51.5%) specifying an ALA-accredited M.L.S. degree. However, 84 (27.5%) of the positions require a computer degree or allow a computer degree to be substituted for an M.L.S. degree. In 26 (8.6%) of the advertisements, a B.S. degree in a computer related field or Computer Science is specified while 1 (0.3%) of the advertisements specifies an M.S. degree in Computer Science. In 15 (4.9%) of the advertisements, either an M.L.S. degree or a B.S. degree in a computer related field or Computer Science is specified while either an M.L.S. degree or an M.S. degree in a computer related field or Computer Science is specified in 42 (13.7%) of the advertisements. (See Table 5.)

Table 3
Distribution of Systems Librarian Positions by Minimum Salary

Minimum Salary	f	%
$15,000 and less	0	0.0
$15,001 - 20,000	2	0.7
$20,001 - 25,000	19	6.2
$25,001 - 30,000	70	23.0
$30,001 - 35,000	56	18.4
$35,001 - 40,000	43	14.1
$40,001 - 45,000	17	5.6
$45,001 - 50,000	10	3.3
$50,001 - 55,000	4	1.3
$55,001 - 60,000	2	0.7
$60,001 and more	1	0.3
Numerical amount not specified	81	26.6
Total	305	100.0

Table 4
Distribution of Systems Librarian Positions by Level

Level of the Position	f	%
Administrative	90	29.5
Non-administrative	215	70.5
Total	305	100.0

Table 5
Distribution of Systems Librarian Positions by Degree Requirements

Degree Requirements	f	%
M.L.S.	32	10.5
M.L.S. from an ALA-accredited program	157	51.5
B.S. in a computer related field	20	6.6
M.L.S. or B.S. in a computer related field	3	1.0
M.L.S. from an ALA-accredited program or B.S. in a computer related field	6	2.0
B.S. in Computer Science	6	2.0
M.L.S. or B.S. in Computer Science	1	0.3
M.L.S. from an ALA-accredited program or B.S. in Computer Science	5	1.6
M.S. in a computer related field	0	0.0
M.L.S. or M.S. in a computer related field	8	2.6
M.L.S. from an ALA-accredited program or M.S. in a computer related field	19	6.2
M.S. in Computer Science	1	0.3
M.L.S. or M.S. in Computer Science	8	2.6
M.L.S. from an ALA-accredited program or M.S. in Computer Science	7	2.3
Other degree(s) specified	15	4.9
No degree(s) specified	17	5.6
Total	305	100.0

None of the advertisements analyzed are for entry level positions. A majority (192 or 63.0%) of the advertisements require at least 1 to 6 years of experience with 89 (29.2%) requiring at least 1 to 2 years, 67 (22.0%) requiring at least 3 to 4 years, and 36 (11.8%) requiring at least 5 to 6 years. Only 4 (1.3%) of the advertisements require more than 6 years of experience. The minimum amount of experience is not specified for 109 (35.7%) of the advertisements. (See Table 6.)

The following ten areas of specialized knowledge or experience required or preferred by employers are analyzed: bibliographic utilities or MARC format, CD-ROM technology, computer hardware, computer software, Internet or World Wide Web, library housekeeping systems, networks or networking, operating systems or environments, programming languages, and telecommunications. The most specified area is library housekeeping systems (235 or 77.0%) followed by networks or networking (182 or 59.7%), operating systems or environments (139 or 45.6%), Internet or World Wide Web (125 or 41.0%), and computer software (105 or 34.4%). The least specified areas are bibliographic utilities or MARC format (86 or 28.2%), CD-ROM technology (80 or 26.2%), computer hardware (61 or 20.0%), telecommunications (53 or 17.4%), and programming languages (45 or 14.8%). (See Table 7.)

The specialized knowledge or experience required or preferred by employers in 1993 and 1996 was compared. In general, there seems to be less demand for bibliographic utilities or MARC format (43.75% vs 29.93%), computer hardware

(34.38% vs 22.45%), and computer software (46.88% vs 34.69%) in 1996 compared to 1993. On the other hand, there seems to be more demand for the Internet or World Wide Web (15.63% vs 45.58%), operating systems or environments (25.00% vs 46.94%), and networks or networking (40.63% vs 59.86%) in 1996 compared to 1993. The demand for knowledge or experience related to programming languages (6.25% vs 14.29%) and telecommunications (12.50% vs 17.69%) is slightly higher in 1996 than in 1993 while the demand for library housekeeping systems (84.38% vs 78.23%) is slightly lower in 1996 than in 1993. The demand for CD-ROM technology (25.00% vs 27.89%) is relatively the same in 1993 and 1996. (See Table 8.)

Table 6
Distribution of Systems Librarian Positions
by Minimum Amount of Experience Required

Minimum Amount of Experience Required	f	%
Less than one year	0	0.0
One to two years	89	29.2
Three to four years	67	22.0
Five to six years	36	11.8
Seven to eight years	0	0.0
Nine to ten years	4	1.3
Eleven or more years	0	0.0
Experience not required	0	0.0
Amount not specified	109	35.7
Total	305	100.0

Table 7
Distribution of the Specialized Knowledge or Experience Required or Preferred

Specialized Knowledge or Experience Required or Preferred	f	%
Bibliographic Utilities or MARC Format	86	28.2
CD-ROM Technology	80	26.2
Computer Hardware	61	20.0
Computer Software	105	34.4
Internet or World Wide Web	125	41.0
Library Housekeeping Systems	235	77.0
Networks or Networking	182	59.7
Operating Systems or Environments	139	45.6
Programming Languages	45	14.8
Telecommunications	53	17.4

Table 8
Comparison of the Specialized Knowledge or Experience
Required or Preferred in 1993 and 1996

Specialized Knowledge or Experience Required or Preferred	1993 (N=32) f	%	1996 (N=147) f	%
Bibliographic Utilities or MARC Format	14	43.75	44	29.93
CD-ROM Technology	8	25.00	41	27.89
Computer Hardware	11	34.38	33	22.45
Computer Software	15	46.88	51	34.69
Internet or World Wide Web	5	15.63	67	45.58
Library Housekeeping Systems	27	84.38	115	78.23
Networks or Networking	13	40.63	88	59.86
Operating Systems or Environments	8	25.00	69	46.94
Programming Languages	2	6.25	21	14.29
Telecommunications	4	12.50	26	17.69

CHAPTER 5

SUMMARY AND CONCLUSIONS

Summary

This study used content analysis to analyze job advertisements for systems librarians. Job advertisements for systems librarians listed in American Libraries and Library Hotline from January 1993 through January 1997 and archived through the Hypertext Archives for LIBJOBS from August 1995 through January 1997 were examined. A total of 305 advertisements for systems librarians were analyzed in this study.

The job advertisements were examined to determine the current job opportunities and qualifications for systems librarians. The current job opportunities were examined in terms of the type of employing institution, the geographic location, the minimum salary, and the level of the position. The current job qualifications were analyzed in terms of the degrees required, the minimum amount of experience required, and the specialized knowledge or experience required or preferred. The specialized knowledge or experience was examined for the following areas: bibliographic utilities or MARC format, CD-ROM technology, computer hardware, computer software, Internet or World Wide Web, library housekeeping systems, networks or networking, operating systems or

environments, programming languages, and telecommunications.

Conclusions

The findings of this study revealed many interesting trends that currently exist related to the job opportunities and qualifications for systems librarians. First, there are more system librarian positions available in academic libraries than in public or special libraries. Second, there are openings for systems librarians throughout the entire United States with the most openings in the south and the least openings in the west. Third, the minimum salary for systems librarians frequently falls within in the $20,001 to $45,000 range. Fourth, a majority of the positions require an M.L.S. degree. However, a relatively large number of positions only require a computer degree or allow a computer degree to be substituted for an M.L.S. degree. This indicates that an M.L.S. degree is not always required for employment as a systems librarian. Fifth, entry level systems librarian positions are relatively rare. Most of the advertisements require at least 1 to 6 years of experience. Finally, the most specified areas of knowledge or experience specified in the advertisements are library housekeeping systems, networks or networking, and operating systems or environments. The least specified areas are CD-ROM technology, telecommunications, and programming languages.

APPENDIX A

CODING FORM

1. Assigned Number

2. Type of Employing Institution

   AL Academic library
   PL Public library
   SL Special library
   AC Academic library consortium
   PC Public library consortium
   OT Other type of employing institution
   NS Type of employing institution not specified

3. Geographic Location

   NE Northeast
      Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
   MW Midwest
      Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
   SO South
      Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia
   WE West
      Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming
   NS Geographic location not specified

4. Minimum Salary

A	$15,000 and less
B	$15,001 - 20,000
C	$20,001 - 25,000
D	$25,001 - 30,000
E	$30,001 - 35,000
F	$35,001 - 40,000
G	$40,001 - 45,000
H	$45,001 - 50,000
I	$50,001 - 55,000
J	$55,001 - 60,000
K	$60,001 and more
N	Numerical amount not specified

5. Level of the Position

A	Administrative
N	Non-administrative

6. Degree(s) Required

A	M.L.S.
B	M.L.S. from an ALA-accredited program
C	B.S. in a computer related field
F	M.L.S. or B.S. in a computer related field
G	M.L.S. from an ALA-accredited program or B.S. in a computer related field
H	B.S. in Computer Science
K	M.L.S. or B.S. in Computer Science
L	M.L.S. from an ALA-accredited program or B.S. in Computer Science
M	M.S. in a computer related field
P	M.L.S. or M.S. in a computer related field
Q	M.L.S. from an ALA-accredited program or M.S. in a computer related field
R	M.S. in Computer Science
U	M.L.S. or M.S. in Computer Science
V	M.L.S. from an ALA-accredited program or M.S. in Computer Science
Y	Other degree(s) specified
Z	No degree(s) specified

7. Minimum Amount of Experience Required

LO	Less than one year
OT	One to two years
TF	Three to four years
FS	Five to six years
SE	Seven to eight years
NT	Nine to ten years
EM	Eleven or more years
NR	Experience not required
NS	Amount not specified

8. Knowledge or Experience Related to Bibliographic Utilities/MARC Format

Y	Yes
N	No

9. Knowledge or Experience Related to CD-ROM Technology

Y	Yes
N	No

10. Knowledge or Experience Related to Computer Hardware

Y	Yes
N	No

11. Knowledge or Experience Related to Computer Software

Y	Yes
N	No

12. Knowledge or Experience Related to the Internet/World Wide Web

Y	Yes
N	No

13. Knowledge or Experience Related to Library Housekeeping Systems

Y Yes
N No

14. Knowledge or Experience Related to Networks/Networking

Y Yes
N No

15. Knowledge or Experience Related to Operating Systems and Environments

Y Yes
N No

16. Knowledge or Experience Related to Programming Languages

Y Yes
N No

17. Knowledge or Experience Related to Telecommunications

Y Yes
N No

NOTES

1. Susan K. Martin, "The Role of the Systems Librarian," Journal of Library Administration 9 no. 4 (1988): 57.

2. Barbara G. Leonard, "The Role of the Systems Librarian/Administrator: A Preliminary Report," Library Administration & Management 7 (Spring 1993): 113.

3. Graeme A. Muirhead, "The Role of the Systems Librarian in Libraries in the United Kingdom," Journal of Librarianship and Information Science 25 (September 1993): 123.

4. Nancy D. Lane and Margaret E. Chisholm, Information Technology: Design and Applications (Boston: G.K. Hall, 1991), 298.

5. William A. Shay, Understanding Data Communications and Networks (Boston: PWS Publishing Company, 1995), 567.

6. Lucy A. Tedd, An Introduction to Computer-based Library Systems, 3d ed. (New York: John Wiley & Sons, 1993), 121.

7. Lane and Chisholm, 321.

8. Stella Keenan, Concise Dictionary of Library and Information Science (New Jersey: Bowker-Saur, 1996), 138.

9. John M. Budd, "Salaries of Automation Librarians: Positions and Requirements," Journal of Library Administration 13 no. 1/2 (1990): 21-29.

10. Martin, 57-68.

11. Felix T. Chu, "Evaluating the Skills of the Systems Librarian," Journal of Library Administration 12 no. 1 (1990): 91-102.

12. Camille Cote, "Wanted: Information Specialists," Canadian Library Journal 46 (June 1988): 165-168.

13. Darrell L. Jenkins, "Do You Want to be a Systems or Planning Librarian? Or Management Analyst in an Academic Library?" in The Information Community: Proceedings of the 44th ASIS Annual Meeting Held in Washington, DC 25-30 October 1981, ed. Lois F. Lunin, Madeline Henderson, and Harold Wooster (White Plains, New York: Knowledge Industry Publications, Inc., 1981), 150-153.

14. Muirhead, 123-135.

15. Leonard, 113-116.

16. Karen A. Hatcher, "The Role of the Systems Librarian/Administrator: A Report of the Survey," Library Administration & Management 9 (Spring 1995): 106-109.

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18. Bryce Allen and David Reser, "Content Analysis in Library and Information Science Research," Library and Information Science Research 12 (July-September 1990): 251.

19. Mary Jo Lynch, "The Systems/Automation Librarian," Library Personnel News 9 (January-February 1995): 4-5.

20. Ray Prytherch, Harrod's Librarians' Glossary, 8th ed. (Brookfield, Vermont: Ashgate Publishing Company, 1995), 3.

21. Prytherch, 523.

22. Prytherch, 602.

23. U.S. Department of Commerce, Bureau of the Census, Statistical Abstracts of the United States (Washington, D.C.: Government Printing Office, 1989), 17.

24. Budd, 25.

25. Blaise Cronin, Michael Stiffler, and Dorothy Day, "The Emergent Market for Information Professionals: Educational Opportunities and Implications," Library Trends 42 (Fall 1993): 257-276.

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