CYBERECRUITING FOR INFORMATION PROFESSIONALS

by
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This study examines job advertisements for information professionals as represented by online advertisements in general job boards (www.monster.com, www.joboptions.com, and www.careermosaic.com) and those in newspaper classified advertisements. A general overview of the technical and professional skills desired by employers is obtained through a content analysis of job opportunities. The results of the study indicate that for-profit businesses utilize online forums more often for posting open positions than public institutions or colleges and universities, and that the job market for those with a M.L.S. is both healthy and diverse. Positions targeted towards M.I.S. graduates are more diffuse, and can more easily be located by using specific skill sets as keywords rather than using the degree itself as a search strategy. Results also indicate that online advertisements are very similar to those in print newspapers in terms of types of positions advertised, salary ranges, years of experience required, and skills desired.

Headings:

Content analysis

Information science

Job advertisements

Job analysis

Job search

World wide web

Table of Contents

I. Introduction……..……4

II. Review of the Literature……...6

The Job Market……..6

Recruiting Methods……..…8

III. Methodology……..10

IV. Definitions of Variables Collected……...13

V. Findings and Discussion……16

VI. Significance and Summary……23

VII. End Notes……25

VIII. Appendixes……...26

IX. Bibliography……34

Introduction

How has recruiting for information professionals changed as a result of the growing popularity of internet based job searching sites and portals? Has the nature of the jobs targeted towards library and information science professionals changed from a more traditionally defined notion of a librarian to one which allows for more diversity in function and location within the company or institution? The present study investigates through content analysis the differences in employment opportunities for information professions represented in print advertisements versus those offered in an online forum, such as online job boards. A secondary concern of the study is to determine the overall nature of these employment opportunities in order to assess the kind of change the information professions have undergone as a result of the technological revolution. Information and library science professionals have long welcomed the use of technology into their professional lives, and this study seeks to determine if this translates into job seeking behavior as well. The analysis is limited to job opportunities specifically targeted towards those persons with at least a Master's level education in either Library Science, Information Science, or the equivalence, and includes both entry-level and positions requiring some experience.

While online recruiting has not entirely replaced the more traditional methods of finding potential employees, such as newspaper advertising and job fairs, its rapid success is changing the way many people find jobs. The growth of the internet as a medium through which to advertise job openings to candidates makes sense for several reasons: it is fast and efficient, cheap, and effective. The "early adopters" of online job recruiting were, naturally enough, those in the information technology sector, but the rise of internet job postings in non-technical fields, such as accounting, medicine, and advertising, has grown to be a dominant force in the recruiting world. It should not be a stretch, then, for this industry-wide trend to influence the methods information professionals use to seek and find jobs. Opportunities are rapidly increasing for traditionally trained

librarians and information scientists[1] outside of traditional library settings. The internet and the advent of new information technology are not only creating new jobs for information professionals, but also changing the existing ones. The information profession as a whole has a strong culture in embracing technological developments, and responding to change positively. Should job hunting be any different? In order to establish that the librarian of yesterday has successfully made the transformation into the librarian of tomorrow, every aspect of the profession will need retooling, from their education all the way to their job hunting habits. But has this happened yet?

Review of the Literature

The Job Market

Rapid changes in technology are altering the way in which information professionals work; indeed the entire culture of information use has undergone a transformation of its own. Some forecasters lament that such changes will render the information professions as traditionally defined obsolete, others more optimistically suggest that the time is right for a strategic overhaul of the very definition of what the profession is, and how information professionals can contribute to the new information economy. Newton and Dixon make a crucial point:

> As information and knowledge become increasingly central commodities in the globalized, service-oriented, and technologically driven late-capitalist economies, more and more groups of professionals from computer scientists to marketers are claiming expertise in handling information.[2]

Increased competition from other fields to become true information experts has played its part in redefining what it means to be an information professional in today's information economy. The trend toward supplementing traditional library competencies such as classification, indexing, and cataloging with an increasing proficiency in computer related skills should be a given for information professions who want to keep up with the pace of technological evolution. What is not as obvious, at least to those who are attempting to characterize this change in the profession, is that technical competence does and should have its limits for information workers. Just as many librarians and information professionals think it inappropriate that computer scientists and marketers are competing for their jobs, it follows that librarians should not be a threat to those seeking such positions. Though possessing computer skills should be requisite for employment within the information professions, this should not be the distinguishing factor. Now, as always, there is tremendous opportunity to demonstrate that the unique area of expertise of information professionals lie not in technology per se, but rather in the *organization* of the information mediated *by* the technology.

Utilizing technological resources within the job may become second nature for today's information professionals, but what about using them to help *find* the job? A study conducted in the spring of 1997 monitored "an essential Web site for regional and national job searching (www.careerpath.com)" for five weeks[3]. This particular site lists over 350,000 classified ads per month from 29 regional newspapers. Six of these newspapers' classified ads (those from the *Boston Globe, Chicago Tribune, Los Angeles Times, Philadelphia Enquirer,* and *Washington Post*) were analyzed for relevant library and information sciences jobs[4]. The focus of this study was primarily to determine the nature of newly created jobs for information professionals, and as such, did not search with more traditional terms (such as "cataloger," "indexer," or "reference," or even "information specialist"). In this study, Dolan and Schumacher found that no explicit category even exists for library jobs exclusively, and that these ads often appear under other headings such as Publishing, Research, Education, or Teaching. In addition to examining print classified ads, the team also looked at postings in library oriented mailing lists and industry journals. Because the target audience of these publications is librarians and other information professionals, the number of advertisements for these types of positions was much higher, which is to be expected. Finally, the same researchers conducted an analysis of job openings available at internet search engines and related organizations. Want ads from AltaVista, AOL, Excite, HotBot, Infoseek, Lycos, and Yahoo! were investigated, with little success. While the authors were examining the occurrence of job openings *within* these internet companies, given the wide applicability of skills the new information professional possesses, such types of companies would seem to be natural places for employment.

Few other studies in the literature describe a focus on the medium of library and information science related job advertisements, though several do discuss general career opportunities in the library and information sciences. Harris and Reid's examination looked at Canadian job advertisements within the field in the 1980's and indicated some growth in the number of positions advertised in the non-library settings, in particular social service and non-profit agencies and, to a lesser degree, in business.[5] One interesting trend did reveal itself in the Harris study, and that was the significant increase in the number of contractually-limited jobs advertised. Outsourcing continues to be a threat to the job security of the information professional, but along with the threat

also come opportunities for increased specialization and finding one's own niche within the job market. Displaced reference librarians can, with good marketing skills, easily become independent information brokers; similarly, indexers have long sold their services on a contractual basis. The trend toward outsourcing services traditionally performed by librarians may continue, but this is not necessarily an indication that the field is withering—David Dubin, an Assistant Professor in the Graduate School of Library and Information Science at the University of Illinois explains that:

> One of the three classic pitfalls of LIS education…[is] a narrow view of what constitutes "library work"…I mean the perception that library work only includes jobs in settings that anyone would recognize as a library. A less narrow definition would be "jobs that require the services of a trained librarian."[6]

The most recent review of the nature of jobs within the information and library science sector was conducted in 1997. Donqi Song performed a content analysis of job advertisements posted on jobs-l, the jobs mailing list of the School of Information and Library Science at the University of North Carolina at Chapel Hill. Over a period of five months, 1000 postings were monitored, and coded for such factors as type of job, job setting, salary, years of experience required, computing skills required, and communication skills.[7] Results indicated that there is a demand for information professionals with significant computing experience, and that management/supervisory skills, subject expertise, and communication and language skills are also considerable factors in hiring decisions.

Recruiting Methods

Employers, in the information and other professions, have traditionally relied on "help wanted" advertisements placed in the Sunday employment section of the classified ad section of print newspapers to advertise open positions. While certainly effective for the local candidate, it was often more difficult to reach a national or international audience using newspaper ads alone. While newspaper classifieds still represent one method of searching for potential employment, the internet has introduced another method that is becoming more popular.

The use of online job advertisements began in the IT industry as a way to find the most qualified candidates in the quickest amount of time. The information technology industry in general can be thought of as pioneering the use of electronic means to accomplish most things, and their

recruiting and hiring practices follow the same innovative path. As the use of the internet grew in the general population, corporate human resources departments learned that advertising their open positions online using a job board (such as www.monster.com or www.espan.com) could be a cheap yet effective way to search for new hires. Newspaper publishers were quick to respond to this growing trend, and many digitized their classified ads and placed them on their own websites. While these "print" ads were searchable and available to a much wider audience than the traditional print ads, many online job sites offered both the job seeker and the recruiter services that the newspapers could not match. Services such as offering resume and interviewing tips, the ability to submit one's resume directly to company who posted the opening, and screening incoming resumes were not offered by traditional newspaper classified ad departments. Industries are also able to post job ads in industry-specific forums, such as www.ProjectManagement.com or www.engineer.com, thereby reliably focusing on their target audience. Cost, also, is a significant factor: a quarter-page ad in a weekend daily San Francisco newspaper costs about $10,000, while a company can post an unlimited number of jobs in an online career center for about $4,000 a year[8]. The trend toward online job posting is expected to eliminate an estimated $4.7 billion in classified ad revue from newspapers by the year 2003[9].

Methodology

The research method for this study is a content analysis comparing print classified advertisements and job advertisements posted on online “bulletin boar
professionals. This study significantly differs from existing research methodologies in several ways. First, the content analysis explicitly compares the nature of jobs posted in a traditional manner (newspaper classified ads) with those posted in an online forum. If a job is posted in both places, it was excluded from the analysis. Secondly, although the Dolan and Schumacher study did examine online job postings, the present methodology for searching for and locating candidate job advertisements is different. Dolan and Schumacher searched the advertisements using specific job title and/or descriptive keywords such as “web,” “Internet,” etc. while the search strategy in the present study was to query the advertisements using levels of educational attainment instead (e.g. searching with the terms “information science” and “library science”). This approach will allow a better representation of those positions desiring applicants with a library and information science background or qualifications. This study is also an exploration into the *type* and *nature* of job opportunities that exist for information professionals, and will attempt to see if the use of the word “information science” in a job search returns different kinds of positions than the ones found using “library science.” Taking into consideration that many graduate schools of information and library science do not distinguish between the two fields (for example, some issue a M.L.I.S instead of a M.I.S or M.L.S), the author wanted to ascertain if the professional world sees a difference in these degree programs, and to summarize what kind of difference exists between job positions targeted towards library science graduate students and those targeted towards information science graduate students. The objectives of this study, then, are twofold: first, to determine what difference, if any, exists in the nature and kinds of positions that are advertised through newspaper classified ads versus those posted in a general business online job board, and secondly, to perform an exploration

into the types of jobs that seek employees with a library and information science educational background, and to see if there is any difference between the two disciplines.

Analyzing Newspaper Job Advertisements

Over the course of three months, a content analysis of newspaper job advertisements using the web site www.careerpath.com was performed. This site contains the full content of nearly 90 major newspapers across the country.[10] Due to the fact that job advertisements are most commonly posted in the Sunday edition of newspapers, searches were performed on a weekly basis using the most recent Sunday edition of each paper. CareerPath divides the newspapers into regional sections, and allows the searcher to select 1) an industry category, 2) optional keywords, 3) dates, and 4) a specific newspaper[11]. For this study, no category was selected (there is no category listing for either information or library science), rather a set of four searches was initiated using the following keywords: "library science," "MLS," "information science," and "MIS." The keywords were entered with quotations so as to have the system search the terms as a phrase, in accordance with CareerPath's searching instructions. The returned results were then saved electronically[12] for further coding.

Analyzing Online Job Board Postings

A similar method was used to evaluate the jobs available on general, non-industry specific, online job boards. Three "portal" sites were used: www.monster.com, www.joboptions.com (formerly Espan), and www.careermosaic.com. Since these databases are updated constantly, the searches took place once a week and covered the entire week's postings. In this way, no bias (e.g., depending on the day of week) was introduced into the methodology. Again, the results were saved electronically for further coding.

Data Collection, Coding, and Analysis

A pre-test of two weeks worth of job advertisements (n=56) were collected and analyzed to refine the coding sheet and test the feasibility of the variables collected. Four keywords were used in collecting the data for the pre-test, "library science," "MLS," "information science," and "MIS." The pre-test revealed that using the keyword "MIS" resulted in many job advertisements seeking applicants with a Master's in Information Systems or an undergraduate degree in Management

Information Systems. As these degrees are not within the scope of the present study, these advertisements were subsequently eliminated from the final analysis.

Data collection ran from January through March 2000, with a total of 224 advertisements collected. Duplicate advertisements, defined as those which appeared in both the print and online format were eliminated, resulting in 200 advertisements coded and analyzed for this survey.

Definitions of Variables Collected

Information for fourteen variables was collected for each job advertisement (see Appendix B for coding sheet). The variables are defined as follows:

Type of advertisement: This mutually exclusive variable captures whether the advertisement appeared online (either on www.monster.com, www.joboptions.com, or www.careermosaic.com)[13] or within the "employment section" of a printed newspaper, as represented by www.careerpath.com. No other information was recorded about the source of the advertisement other than whether it was online or appeared in print.

Job title*:* The title of the position posted was recorded.

Job setting/Industry*:* The company advertising the open position was classified roughly by industry, as represented by modified version of 1997 North American Industrial Classification System (NAICS) industry categories. This is a mutually exclusive categorical variable with the following categories:

> Public institution: This category included K-12 schools, government, and public library settings. Note that colleges and universities were not included in this category, but had their own unique category, labeled "higher education."
>
> Manufacturing: This category included all companies involved in manufacturing activities, including food, beverage and tobacco, textile, apparel, and other products.
>
> Information Services: This category represents companies and independent contractors that deal in the information services industry, such as vendors and publishing companies. Finance/Insurance: This category represents the financial services sector, including insurance companies and investment firms.
>
> Professional/Scientific/Technical: This category includes a wide variety of companies that provide professional services (consulting companies, law firms) in the business world, as well as scientific research and technical services (pharmaceutical companies).
>
> Arts/Recreation: This category represents those in the entertainment industry and include recording companies, movie studies and theme park operators.
>
> Internet: This category represents internet startups and online companies.
>
> Higher Education: All institutions of higher learning, either public or private, are included in this category. Included in this category are all academic university libraries, as well as other non-library departments with the university setting.
>
> Hospital/Health Services: This category represents all health service industries relating to patient health care and ancillary services.

Job setting*:* This categorical variable represents the setting of the position advertised as being either within a library setting or a non-library setting. If the specific setting of the position was

ambiguous or not easily inferred from the context of the advertisement, the category “not stated” was selected.

***Job status**:* This categorical variable captures the status of the position advertised and was coded full time, part time, contract, or not stated.

***Educational Requirement**:* This variable represents the educational requirement for the position advertised. Three categories were used: MLS for those jobs requiring a Master’s of Library Science, MIS for those jobs requiring a Master’s of Information Science (stated explicitly) and the hybrid degree MIS/MLS or MLIS. Job advertisements that stated “a Master’s of Library Science or Information Science” were coded as the last “hybrid” category. For inclusion in this study, all job advertisements, by methodological definition, required either a MLS or MIS or its equivalence. For the purposes of this study, the “equivalence” of either a MLS or MIS means whatever designation is given the graduate degree representing library and information sciences. While the MLS degree may be standard among most library and information science schools, the newer MIS degree name is not standard—this degree is varyingly known as a Master’s in Information Science, a Master’s in Information Studies, etc. All of these variations were considered under the MIS category, with the single exception of the “hybrid” category explained above.

Geographic Location: The state in which the job is located was recorded.

Salary: The salary, if given, was recorded as a ratio variable. If the stated salary was a range, the average of this range was recorded.

Personal Skills: A total of five personal competencies were examined, each as a binary variable indicating the presence or absence of the particular skill set in the job advertisement. The skills were drawn from both the job description, as well as within the ‘required skills’ portion of the job advertisement. The personal skills examined and coded were:

Communication skills, both written and oral.
Ability to work under pressure, to meet deadlines and to be comfortable in a flexible and fluid work environment.
Supervisory and management experience.
Teamwork and the ability to function as a team member.
Customer service orientation and the ability to interact with clients and patrons.

Technical Skills: A total of eight technical competencies were examined, each as a binary variable indicating the presence or absence of the particular skill set in the job advertisement. The skills were drawn from both the job description, as well as within the ‘required skills’ portion of the job advertisement. The technical skills examined and coded were:

Programming skills, including but not limited to, knowledge and experience with HTML, C++, Perl, and Javascript.
Web content development including content creation, organization, and delivery.
User interface design.
Network administration.
Database design and maintenance including but not limited to, knowledge of Access, Oracle, and SQL.
Platform experience including knowledge and/or experience in Windows, NT, Unix and Macintosh platforms.
Microsoft Office, including Word, Excel, PowerPoint, and/or Outlook.
Information retrieval techniques.

Searching Skills: A total of five searching competencies were examined, each as a binary variable indicating the presence or absence of the particular skill set in the job advertisement. The skills were

drawn from both the job description, as well as within the 'required skills' portion of the job advertisement. The searching skills examined and coded were:

Dialog
Dow Jones (Factiva)
Lexis-Nexis
CD-Rom products
Other online searching skills not listed above, including, but not limited to Medline and STN.

Professional Skills: A total of six searching competencies were examined, each as a binary variable indicating the presence or absence of the particular skill set in the job advertisement. The skills were drawn from both the job description, as well as within the 'required skills' portion of the job advertisement. The searching skills examined and coded were:

Cataloging, including abstracting and indexing.
Reference and research skills.
Collection development and acquisitions.
User instruction and training of all types.
Young Adult experience, including children's librarianship.
Archives.

Associated Degrees: Two binary variables were created to assess if the job advertised was also appropriate for those with an advanced degree in Computer Science or a Master's of Business Administration. This information was normally expressed in the "required" portion of the job advertisement.

Years of Experience: The required number of years of experience was recorded as a ratio variable. If the years of experience desired or preferred were expressed as a range, the average of this range was recorded.

Findings and Discussion

The Job Market for Information Professionals

An overview of the current job market for information professionals was one of the objectives of this study. Overall, far more job advertisements for information professionals are placed by the business sector (defined as all employers in the manufacturing, information services, finance/insurance, professional and scientific, arts and recreation, internet and hospital/health services industries), followed by public institutions (including non-profit groups), and institutions of higher education. Of all job advertisements coded, business and industry represented 46.5%, followed by public institutions (29.5%) and higher education (10.5%). Across all settings of employment, the MLS degree was more in demand than the MIS degree, representing 83% of all advertisements, while the MIS or its equivalence was required in only 17% of the total job advertisements collected. Regarding job status, employers are more likely to place advertisements for full time positions (87.5% of all advertisements) than for either part time (2.5%) or contract positions (4 %). In general, advertisements for part time or contract positions were relatively rare, and gives evidence to the fact that perhaps the "outsourcing" trend of the late 1980's has been reversed. Overall, the majority (43.3%) of the job advertisements indicating an experience requirement for information professionals were for entry level positions (those requiring zero to 3 years of experience). This was followed by positions for mid-level persons (4-6 years of experience required) in 17.5% of all advertisements, and only 3% of advertisements were targeted towards experienced (7 years or more) information professionals. It is interesting to note, however, that 36% of all jobs descriptions collected did not give an experience requirement. The abundance of entry-level positions is good news for recent information and library science graduates who are looking for their first professional position. In terms of the setting within the company, of all positions requiring a MLS, an overwhelming majority (70.6%) were within a library setting, while of all jobs requiring a

MIS, more (70%) were in a non-library position. This finding indicates that the MLS degree is clearly associated with a more traditional library setting, while the skills obtained by MIS degree holders are useful and desired outside of the library setting. One interpretation of this finding is that employers (other than libraries) have yet to realize the potential value of a person professionally trained in library science, but that the skills earned by information science graduates are more widely accepted outside of the library. An alternate interpretation could be that the MLS degree is more firmly entrenched and recognized as a "library" degree, while the relative newness of the Information Science degree lends itself to wider applicability in the professional (non-library) world. As for the frequency of associations with other degrees, of all positions requiring a MLS, only 7.3% were associated with the MBA, while 23.5% of the MIS positions were associated with an advanced degree in Computer Science. The mean salary for those job advertisements stating a salary or salary range (77% of all job advertisements did not give salary information) is $40,900, with a mode of $36,000. The lack of salary information is common among all job advertisements. One explanation could be that many companies choose not to reveal salary information publicly. While the job titles varied widely for information professionals, the title "librarian" was the most frequent, occurring in 11% of all advertisements (please see Appendix C for a complete listing of all job titles collected). In terms of geographic distribution, California had the most number of job advertisements, (n=31), which is 15.5% of the sample, while Massachusetts (n=26, 13.0%) and Virginia (n=22, 11.0%) followed.

In terms of the kinds of skills in demand for information professionals, the skill sets were broken down into four distinct categories, *personal skills, technical skills, searching skills,* and *professional skills.* In total, 42% of all job advertisements requested that potential employees possess good communication skills, including written and oral communication. Having a strong customer service orientation was mentioned in 21% of all advertisements, followed by the ability to work well within a team setting (18%). Table 1 illustrates the remaining personal skills represented in the job advertisements.

Table 1. Personal Skills in Job Advertisements

Personal Skills	Percentage of Advertisements (n=200)
Communication Skills	42%
Customer Service Orientation	21%
Teamwork	18%
Supervisory/Management	17%
Flexibility/Ability to work under pressure	14%

When considering technical skills, the ability to design and maintain a database was the most desired technical skill, followed by programming experience, and familiarity with Microsoft Office. The technical skills desired of applicants are represented in Table 2.

Table 2. Technical Skills in Job Advertisements

Technical Skills	Percentage of Advertisements (n=200)
Database Design/Maintenance	20%
Programming (HTML, Java, C++, Perl)	19%
Microsoft Office	16%
Platform: Windows/NT/Unix	13.5%
Web Content Development	8.5%
User Interface Design	6%
Information Retrieval	5.5%
Network Administration	5.5%

It is interesting to note that information retrieval ranks relatively low on the desired list of technical qualifications for information professionals, as this is one of the main concepts taught in an information science context. One explanation of it's lack of visibility within job advertisements may be due to the fact that employers assume that information professionals already have a firm grasp of information retrieval and do not explicitly state this skill.

Of all professional skills, research and reference skills were highly desired of information professionals (45.5%), followed by cataloging and indexing skills, and collection development experience. The professional skills desired of applicants are represented in Table 3.

Table 3. Professional Skills in Job Advertisements

Professional Skills	Percentage of Advertisements (n=200)
Research/Reference	45.5%
Cataloging/Indexing	18.5%
Collection Development/Acquisitions	15.5%
User Instruction/Training	12.5%
Archives/Preservation	5%
Young Adult/Children's	4.5%

The following table (Table 4), shows which specific research skills were most commonly mentioned by employers across all job advertisements:

Table 4. Research Skills in Job Advertisements

Research Skills	Percentage of Advertisements (n=200)
Dialog	11.5%
Lexis-Nexis	8%
Networked CD-Roms	5.5%
Dow Jones	4%
Web Content Development	8.5%
Other (STN, Medline, Westlaw)	24%

Not surprisingly, of all advertisements, knowledge of Dialog topped the list, followed by Lexis-Nexis and various CD-Roms. It is interesting to note, however that the most frequent category was the "other" category, and included tools such as STN, Westlaw, Medline, and general internet searching. Although research competencies were mentioned in 45% of all advertisements, the relatively low percentages seen in this study for specific databases, such as Dialog or Lexis-Nexis is an interesting trend. This finding most likely indicates not that the value of these skills is deteriorating, but rather that employers assume that research and reference skills are assumed core competencies of persons with an advanced degree in information and library science.

Online and Newspaper Advertisements

In general, newspapers were the preferred method of advertising open positions for public institutions (including public libraries) and institutions of higher learning (including academic positions). The business sector favored the use of online ads. Of all positions advertised within the category of public institutions, 88.1% were in newspapers, and for all positions in higher education, 85.7% were in newspaper format. Of all business sector positions, the online format was chosen 76.3% of the time when compared to newspaper advertising. This finding indicates that public institutions and colleges and universities favor the more traditional method of advertising jobs, while the business sector finds more value in presenting their job opportunities online. One explanation is that businesses are more likely to conduct national searches for applicants, which would explain their preference of the online format. Another possible explanation could be that public libraries and colleges and universities tend narrow their candidate search to more local venues, such as newspapers because they do not have the resources to pay for a potential employer's relocation to a far away job, although this is not always the case. The for-profit business sector arguably has larger budgets for locating, interviewing and hiring non-local candidates and is more likely to use the non-geographically limited forum of online advertisements for recruiting new hires.

Of all *online* advertisements for information professionals, the business sector dominated with a total of 87.7% of all advertisements, while 8.6% represented job opportunities with public institutions, and only 3.7% of newspaper advertisements were for jobs with institutions of higher learning. Of all *newspaper* advertisements, opportunities at public institutions comprise 56.5% of advertisements, while business makes up 23.9% of the total number of advertisements; higher education positions made up 19.6% of the total ads in the newspaper. In general, institutions of higher education do not advertise their positions for information professionals heavily in either forum, newspaper or online. One explanation could be that these kinds of positions are advertised using more industry specific resources, such as library oriented mailing lists and publications such as the *Chronicle of Higher Education*. Companies representing the business world make up the majority of advertisements for information professionals overall. This finding may highlight the cost differential

of advertising online versus advertising in print. Newspaper classified advertisements charge fees based on the size of the ad (amount of space used), so careful attention must be paid to the exact wording and length of the advertisement. Online advertisements are generally paid for not by the advertisement, but rather in one lump sum for a specific time frame (e.g., a certain amount of money per year for unlimited job postings). Due to this pricing disparity, online advertisements may tend to be lengthier and more descriptive.

In examining the specific differences between those advertisements placed online and those in newspaper, the jobs advertised in both formats seem to be similar in terms of level of job seeker targeted. Both newspaper and online job advertisements overwhelmingly (82% and 77%, respectively) sought entry-level information professionals (those requiring 0 to 3 years of experience), followed by mid-level applicants and experienced professionals. The target audience of both online and newspaper job forums is primarily entry- to mid-level employees. Due to the low number of advertisements geared toward experienced professionals, these findings suggest that more experienced information professionals use other methods to learn about jobs, such as contacts in the industry and industry-oriented information sources. In terms of differences between the format of the advertisement and the type of applicant desired, online job advertisers were more apt than newspaper advertisers to want persons with a MIS, but both formats overwhelmingly favored MLS holders. Of all newspaper job advertisements, 87% were targeted towards persons with a MLS, and of all online advertisements, 78% advertised positions for MLS professional. While the MLS was, by far, the more in demand degree, MIS positions were most likely (64.4%) found online as opposed to being in the newspaper. These findings suggest that positions and jobs requiring a MLS are more narrowly defined, while the positions utilizing information science skills are more dispersed throughout the working world. Persons with a MIS would conduct a more successful job search if they concentrated on the types of skills they possess rather than on their degree. Because as many as 23.5% of all MIS job positions were associated with a degree in Computer Science, it would behoove the MIS job seeker to focus on the skills s/he possesses. Another overall trend discovered by the examination of print versus online job advertisements for information professionals is that the

online advertisements tend to be longer, more detailed, and more descriptive of both the qualities desired in a candidate as well as the position offered.

Significance and Summary

The findings of this content analysis of print and online job advertisements for information professionals will be beneficial to several groups of people: students currently enrolled in information and library science programs searching for a job, educators who want to prepare their students effectively to meet the needs of the job market and follow trends within information and library science education, and job recruiters and human resources personnel who wish to employ information professionals. Motivated by the advent and subsequent popularity of online job boards, this study helps give a measured approach in deciding which medium of job advertising is most effective for information professionals. Companies utilize a great deal of financial and personnel resources in recruiting and hiring employees; the results of this study will help employers decide how to distribute these resources when locating quality job applicants. Conversely, students actively searching for a job will be able to ascertain what qualifications and experiences potential employers are looking for, which will help them to plan their educational career accordingly.

Since this study focuses on general business job resources, as opposed to library and information science specific resources, an overview of how well the skills of the information professional have been integrated into the general job market have been obtained. The results of this analysis can help information professionals expand their career horizon, and demonstrate that the skills of organizing, creating, and distributing information and information resources are valued ones in the business world.

The significance of using job advertisements is that this is the preferred method of recruitment for large organizations and that job ads are used primarily to hire professional, managerial, and technical workers,[14] certainly information professionals fit into this category. Job ads are used in two ways, as a screening device to encourage potential employees to apply, and simultaneously to discourage unqualified applicants from applying; because of this, the job ad must be written precisely and effectively. Given that no other study has looked at the content of

print versus online job advertisements in general, therefore this study has shed light on the value of each, especially as this relates to information professionals.

End Notes

[1] For the purposes of this paper, the term "information professional" will be used to indicate both the "librarian" and "information scientist" with no distinction; when a distinction is necessary, one will be made by using the more specific term.

[2]Newton, Robert and David Dixon. New Roles for Information Professionals. *Journal of Education for Library and Information Science*, 40(3), 153.

[3] Dolan, Donna R. and John Schumacher. New Jobs Emerging In and Around Libraries and Librarianship. *Online*, 21:6, (November/December 1997), p. 74.

[4] The ads were searched with the following terms: "Internet," "Web," "Webmaster," and "librar*"

[5] Harris, Roma M. and K. Joanne Reid. Career opportunities in library and information science: An analysis of Canadian job advertisements in the 1980's. *Canadian Journal of Information Science*, 13:1/2 (September 1988).

[6] Dolan, p. 74.

[7] Song, Donqi. *A Content Analysis of Job Opportunities for LIS Graduates*. Master's Thesis: University of North Carolina at Chapel Hill, School of Information Science (1997).

[8] Alexander, Steve. Companies fill IS jobs online. *InfoWorld*, 18(26), (June 30, 1997), p. 99.

[9] Kaydo, Chad. The hits—and misses—of online hiring. *Sales and Marketing Management*. (October 1999).

[10] See Appendix A for a listing of the specific newspapers covered.

[11] The present version of CareerPath does not allow searching of this type. At the time of the data collection for the present study (January-March, 2000), visitors could elect to search *exclusively* advertisements published in newspapers and not the ones posted on online job forums.

[12] Copies of the returned results were saved using SurfSaver™ (http://www.surfsaver.com)

[13] See Appendix D for screen shots of the search interface for the online job sites.

[14] Todd, Peter A., James D. McKeen, R. Brent Gallupe. The evolution of IS job skills: A content analysis of IS job advertisements. *MIS Quarterly*, (March 1995).

Appendix A:
Print Newspapers Analyzed (by region)

MIDWEST
Akron Beacon Journal (OH)
Chicago Tribune (IL)
Cincinnati Enquirer/Post (OH)
Des Moines Register (IA)
Detroit News and Free Press (MI)
Ft. Wayne Newspapers (IN)
Green Bay Press-Gazette (WI)
Journal and Courier (Lafayette, IN)
Kansas City Star (MO)
Lansing State Journal (MI)
Minneapolis – St. Paul Pioneer Press (MN)
Omaha World-Herald (NE)
Ozarks Job Search (MO)
Peoria Journal Star (IL)
Rockford Register Star (IL)
Sioux Falls Argus Leader (SD)
St. Cloud Times-Central Minnesota (MN)
Wichita Eagle (KS)

WEST
Contra Costa Newspapers (Bay Area, CA)
Denver Post (CO)
Denver Rocky Mountain News (CO)
Ft. Collins Coloradoan (CO)
Honolulu Advertiser/Star-Bulletin (HI)
Idaho Statesman (ID)
Los Angeles Times (CA)
Marin Independent Journal (CA)
Reno Gazette Journal (NV)
Sacramento Bee (CA)
San Bernardino County Sun (CA)
San Diego Union-Tribune (CA)
San Jose Mercury News (CA)
Santa Rosa Press Democrat (CA)
Seattle Times/Post Intelligencer (WA)
Statesman Journal (Salem, OR)
The Bellingham Herald (WA)
The Desert Sun-Palm Springs (CA)
The Olympian (WA)
Tucson Newspapers (AZ)

SOUTHWEST
Austin American-Statesman (TX)
Daily Oklahoman (OK)
El Paso Times (TX)
Ft. Worth Star Telegram (TX)
Houston Chronicle (TX)
San Antonio Express-News (TX)

Appendix A –
(continued)

NORTHEAST
Albany Times Union (NY)
Allentown Morning Call (PA)
Asbury Park Press/Home News Tribune (NJ)
Baltimore Sun (MD)
Binghamton Press & Sun-Bulletin (NY)
Boston Globe (MA)
Burlington Free Press (VT)
Elmira Star-Gazette (NY)
Hartford Courant (CT)
New York Times (NY)
Newsday (NY)
Philadelphia Inquirer (PA)
Pittsburgh Tribune Review (PA)
Poughkeepsie Journal (NY)
Rochester Democrat and Chronicle (NY)
South Jersey's Courier-Post (NY)
The Herald-Dispatch (WV)
The Journal News (NY)
Washington Post (DC)
Wilmington News Journal (DE)

SOUTHEAST
Asheville Citizen Times (NC)
Atlanta Journal-Constitution (GA)
Charlotte Observer (NC)
Florida Today (FL)
Greenville News (SC)
Hampton Roads Daily Press (VA)
Lexington Herald-Leader (KY)
Louisville Courier-Journal (KY)
Miami Herald (FL)
Montgomery Advertiser (AL)
News-Press (Fort Meyers, FL)
Orlando Sentinel (FL)
Pensacola News Journal (FL)
Richmond Times-Dispatch (VA)
South Florida Sun-Sentinel Career Path (FL)
Tampa Tribune (FL)
The Clarion-Ledger (Jackson, MS)
The Jackson Sun (TN)
The Post and Courier (Charleston, SC)
The Tennessean (Nashville, TN)
The Times (Shreveport, LA)
Winston-Salem Journal (NC)

Total of 86 newspapers included in analysis.

Appendix B –
Coding Sheet for Advertisements

Type of Advertisement
Online
Newspaper

Job Title:

Job Setting/Industry
Public Institution (school, government, library)
Manufacturing
Information Services
Finance/Insurance
Professional/Scientific/Technical
Arts/Recreation
Internet
Higher Education (public and private)
Non-Profit
Hospital/Health Services
Not Stated

Job Setting
Library
Non-library
Not Stated

Job Status
Full-time
Part-time
Contract
Not Stated

Educational Requirement
MLS
MIS
MLS/MIS or MLIS

Geographic Location:

Salary:

Personal Skills
Communication (written and/oral)
Flexibility/Work under pressure
Supervisory/Management
Teamwork
Customer Service Orientation

Technical Skills
Programming (HTML, Java, C++, Perl)
Web Content Development/Organization
User Interface Design
Network Administration
Database Design/Maintenance
Platform: Windows/NT/Unix
Microsoft Office
Information Retrieval

Searching Skills
Dialog
Dow Jones
Lexis-Nexis
CD-Rom Products
Other (STN, Medline, etc.)

Professional Skills
Cataloging/Indexing
Research/Reference
Collection Development/Acquisition
User Instruction/Training
Young Adult/Children's
Archives

Associated Degrees
Computer Science
MBA

Years of Experience:

Appendix C –
Job Titles for Information Professionals
(listed alphabetically)

analyst
archivist

bibliographer
branch manager
business information specialist

catalog librarian
cataloger
children's librarian
collection development librarian
collection manager
competitive intelligence analyst
computer specialist
content librarian
content manager
coordinator of collection management
corporate librarian
corporate research librarian
curator

data processing manager
database designer
database product manager
database specialist
development officer
director of technology
directory editor
document control specialist

electronic resources librarian
engineer
enterprise architect

financial researcher
functional applications analyst

indexing specialist
information analyst
information architect
information center manager
information consultant
information designer
information engineer
information research analyst
information resources manager
information software engineer
information specialist
information support
information systems engineer
internet librarian
internet specialist

knowledge administrator
knowledge architect
knowledge management librarian

law librarian
law library clerk
librarian
library assistant
library assistant manager
library director
library information specialist
library manager
library professional assistant
library supervisor
library system support

marketing research assistant
media cataloger
media library supervisor
medical librarian

network analyst
new media specialist

online searcher

platform management engineer
processing archivist
product manager
project archivist
project leader
project manager

quality manager

records analyst
records management officer
records manager
reference librarian
research analyst
research assistant
research associate
research information director

Appendix C –
(continued)

research librarian
research library administrator
research manager
research professional
research specialist
research support
researcher
resource specialist

science services coordinator
secondary researcher
serials cataloger
serials librarian
slavic librarian
software engineer
staff specialist
support specialist
systems analyst
systems manager

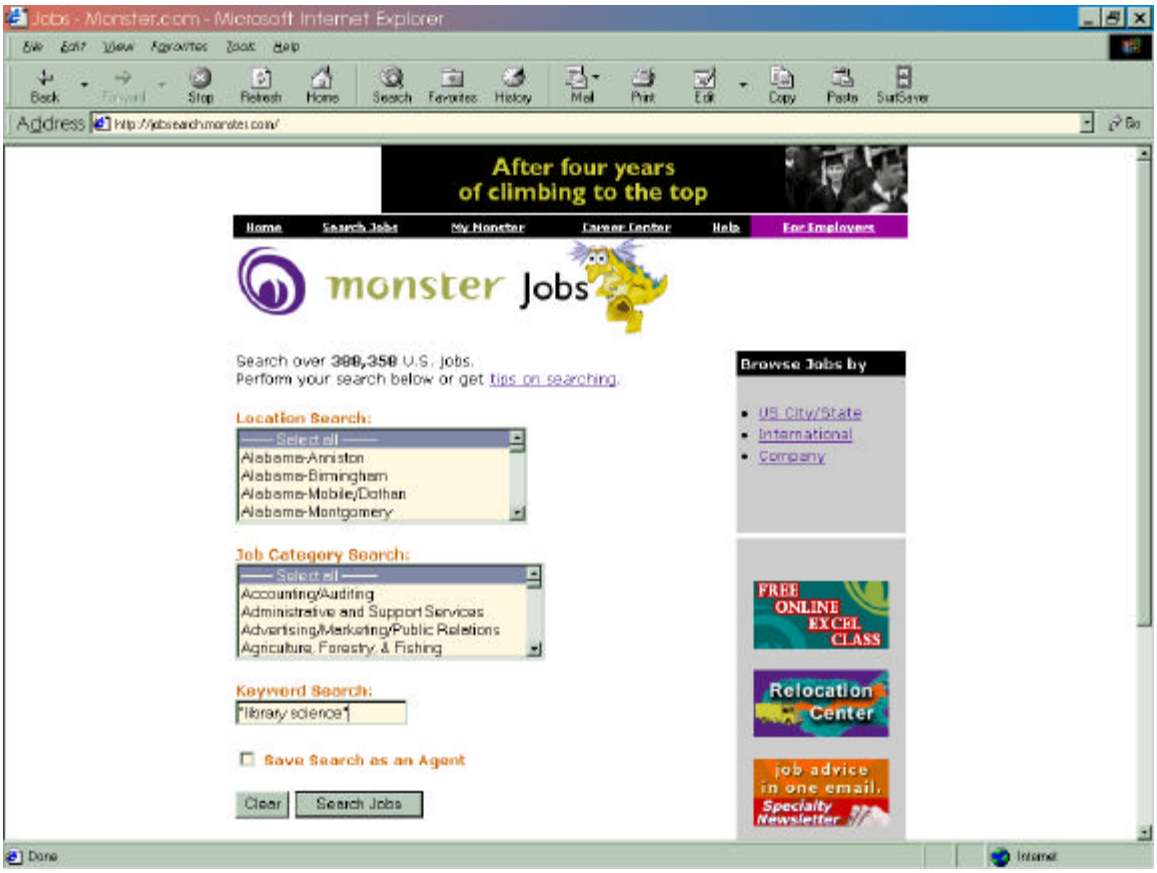
technical indexer
technical information specialist
technical librarian
technical trainer
technical writer
technology analyst

vocabulary research manager

web consultant
web developer
web editorial coordinator
web producer
web site auditor

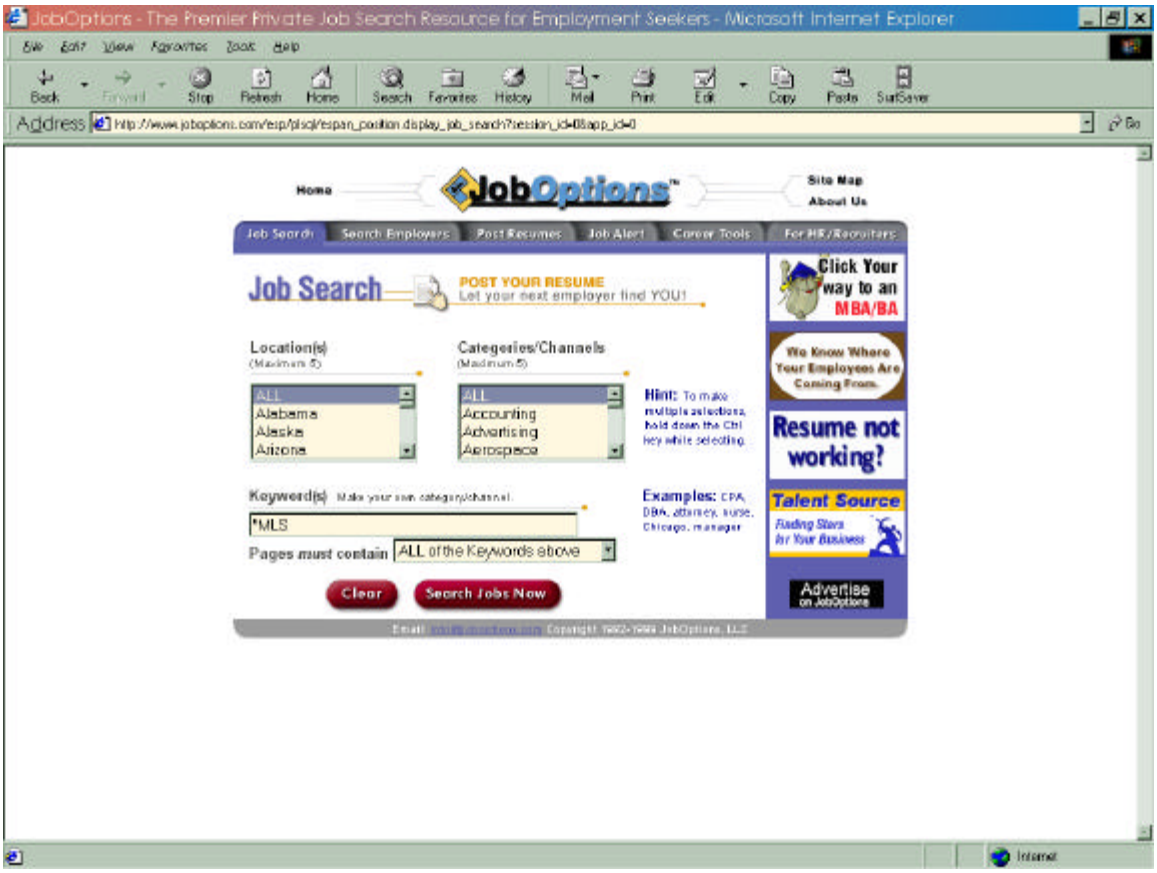
young adult librarian
youth librarian

Appendix D—
Search Interfaces of Online Job Sites



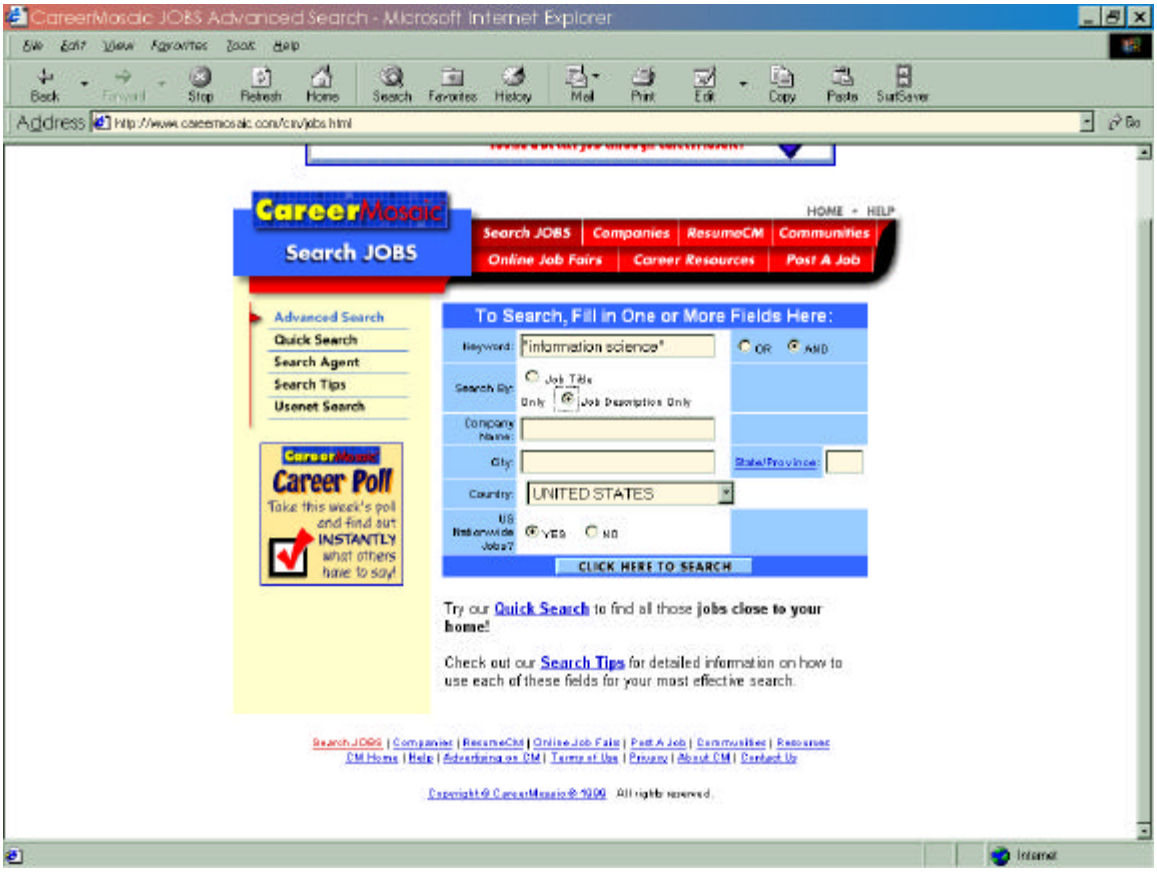
From http://www.monster.com/

Appendix D –
(continued)



From http://www.joboptions.com/

Appendix D –
(continued)



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