The Emergent Market for Information Professionals: Educational Opportunities and Implications

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ABSTRACT

THE SCALE AND SCOPE of the emergent market for information professionals are outlined. National and state-level data are used to define employment opportunities and educational requirements. The data were derived from: (1) content analysis of job advertisements, (2) survey responses from library school graduates, and (3) field interviews with information specialists. Market opportunities and constraints are identified. Repositioning strategies for schools of library and information science are proposed.

BACKGROUND

Machlup's (1962) and Porat's (1977) landmark analyses of the U.S. economy highlighted the growing importance of the information and knowledge industries. Today, the primary and secondary information sectors account for a significant proportion of the GDP (Gross Domestic Product) and the GNP (Gross National Product) in many developed economies. The labor market implications of such rapid economic transformations are likely to be profound, and they raise a host of questions relating to educational strategy and responsiveness, not least for the library and information science (LIS) community (e.g., Angell, 1987; Brinberg, 1986; Brittain, 1989; Turner & Bray, 1989). Despite persistent terminological and scholarly

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wrangling about the exact nature of an information society, certain common assumptions seem to hold true (Locksley, 1990):

> Each construct gives particular emphasis to one set of characteristics of the transforming economy and society. The status of information workers and information occupations are usually central within these paradigms. (p. 3)

In 1981, Debons et al. estimated the total information professional workforce—"those who were indisputably in the 'hard core' of professional information work" (p. 5)—in the United States at 1.64 million, a substantial refinement of the earlier global estimates. Yet only 19 percent of this group belonged to the category "library and information services." Other studies speak confidently of the "invisible job market" (Harmon, 1987), "hidden job market" (Spivack, 1982), "emerging employment market for librarians and information workers" (Moore, 1987), "new intermediaries" (Arnold, 1987), "employment market for information professionals" (Moore, 1988), and "hinterland" (Cronin, 1993). This kind of thinking is not restricted to the United States and United Kingdom. Seeger (1987) made similar observations in the late 1980s relating to the situation in Germany and stressed the importance of moving beyond qualification profiles which were "almost exclusively directed towards typical job descriptions in one type of institution" (p. 170).

HEARTLAND, HINTERLAND, HORIZON

At the risk of oversimplifying, the market for information professionals is three-layered: the heartland, the hinterland, and the horizon. The heartland can be defined in terms of traditional library or information units, largely staffed and managed by graduates of library and information science programs. The contexts and opportunities which characterize the hinterland are not defined in an institutional sense. This is the world of libraries-without-walls and distributed information systems, where disciplinary pedigree and professional affiliation matter less than perceived competence and adaptability. Here, diverse groups, ranging from information systems analysts through information scientists to communications specialists, happily co-exist and inhabit a wide array of occupational niches (e.g., marketing information specialist, database coordinator, information manager). The third layer, the horizon, is the natural habitat of software engineers, business computing specialists, and telecommunications managers, whose focus tends to be the hardware or systems component, rather than information content and packaging.

A WINDOW OF OPPORTUNITY

The emergent market constitutes a potential growth opportunity for library and information science schools (Slater, 1986; Cronin &

Davenport, 1988; Schipper & Cunningham, 1991). This fact is already reflected in the expansion and diversification of the programs offered by many LIS schools in the last decade, notably those at Rutgers, Pittsburgh, Syracuse, and Drexel in the United States; Toronto in Canada; and Sheffield, Loughborough, and Strathclyde universities in the United Kingdom. It is not, however, a captive or guaranteed market, as competition from other suppliers and skepticism about the ability of LIS schools to adapt, pedagogically and culturally, to the dynamics of a changing marketplace feature strongly. Nevertheless, *The Occupational Outlook Handbook 1990-1991* (1991) is guardedly bullish in at least some of its forecasts:

> Employment of librarians is expected to grow more slowly than the average for all occupations through the year 2000. Slow employment growth in school libraries reflects the slow growth of enrollments. Public library employment will also grow slowly, due to slow population growth and limited budgets. Little growth is likely in colleges and universities, since college enrollments will decline.... Employment in special libraries is expected to grow faster than average, as the number of managerial and professional specialty workers they serve grows rapidly.... Employment of library school graduates outside traditional library settings is expected to grow. Nontraditional library settings include bibliographic cooperatives, regional information networks, and information search services. These settings employ systems analysts, data base specialists, managers, and researchers. Some of these jobs require a knowledge of both libraries and computers; others, only a knowledge of libraries.... Information management outside the traditional library setting, a rapidly developing field, is also expected to offer many employment opportunities for library school graduates with backgrounds in information science and library automation. Employers include private corporations, consulting firms, and information brokers.

OBJECTIVES AND METHODS

The purpose of the study was to produce a sketch map of the emergent market in both the state of Indiana and nationally. What sort of environment exists for graduates of Indiana University (IU) School of Library and Information Science (SLIS), and for comparable institutions, in contexts outside the traditional library setting of public, school, and academic libraries and what sorts of personal, technical, and professional attributes does the market demand? What are the dimensions of the emergent market in Indiana and nationally, and in which industrial sectors are opportunities most likely to arise? The aim was to develop an impressionistic profile of the emergent market for information professionals locally and nationally. Three approaches were used: an examination of published job advertisements, interviews with employees and employers in the hinterland, and a mail survey of Indiana SLIS graduates.

Ad Tracking

We tracked and classified nontraditional (i.e., essentially noninstitutionally defined) position announcements from a sample

of the local, national, and professional press. For an eighteen month period (September 1990—March 1992) advertisements were culled from the *Indianapolis Star* (Sunday), *The New York Times* (Sunday—every third month), *ASIS JobLine* (American Society for Information Science), *Information Today, Library Journal,* and *SpecialList* (Special Libraries Association). The approach was both labor-intensive and, of necessity, partial: many eligible positions are not advertised publicly but filled through either an internal search process or intramural transfer.

More important than either enumerative precision or statistical reliability, however, is developing a broad sense of the market's primary characteristics. We categorized position announcements in terms of:

1. standard industrial classification (SIC) code,
2. job title,
3. experience required/preferred,
4. qualifications required/preferred, and
5. desirable attributes.

Our data are indicative of the opportunities which exist, but inevitably they under-represent the size and scope of the market—locally and nationally. They are like blurred photographs.

Field Interviews

In order to define career opportunities and trajectories, and to put some flesh on the published information, we interviewed thirty-three individuals in Indiana who either held positions lying just beyond the traditional (heartland) setting or who hired or placed individuals in such settings. Twenty-seven of the interviews were conducted with people who would be considered information intermediaries within the organization in which they worked, or who operated as independent information brokers. Generally, the expertise that these individuals bring to any client is the ability to query and/ or organize access to recorded information on the client's behalf rather than concentrating on collection development.

We wanted to establish whether SLIS graduates could credibly apply for, or develop, similar positions, and what sort of adjustments the school would have to make in order to best serve this market in addition to its established core constituencies. The *Burwell Directory of Information Brokers 1991* (1991) and the *American Library Directory 1990-1991* (1990) were used to identify possible interviewees, along with personal knowledge of individuals operating in the area.

A starting assumption was that specialized information units provide services which are very different from those provided by the traditional libraries of academia, schools, and the public library

system. What differentiates these nontraditional from traditional library/information operations is the way in which both the collection and the client are viewed. Traditional settings tend to emphasize their collections and offer services that enhance access to central stores of information located within the institution. It is certainly true that traditional libraries are quite advanced at networking their collections so that users can have remote access, but the emphasis is still on locating materials in the belief that library users will be able to derive relevant information from the materials while working on their own. The special librarian in the organizational setting, the information analyst, or independent information broker will generally utilize the access tools on behalf of the client and compile needed information in a form appropriate for the client to review for decision making. They might also create the access tools specifically for a particular client or employer. The keys are customization and value-added integration, coupled with a recognition that: "No one source is right. The integrated fabric is reality" (Sharer, 1991, p. 5).

We also allowed respondents to suggest the names of other information practitioners who might have something to add. Interviews were carried out at Bloomington, Columbus, East Chicago, Elkhart, Fort Wayne, Franklin, Indianapolis, Kokomo, Lafayette, South Bend, Terre Haute, Warsaw, and Westfield. An interview was also conducted with a New York employment agency with experience of placing individuals in the emergent market. Interviewees were drawn from a wide variety of environments, including the insurance, defense, transportation, chemical, banking, pharmaceutical, consulting, government, electronics, medical instrumentation, publishing, and independent brokerage sectors.

Cohort Tracking

The advertisement tracking survey and professional interviews were supplemented with a brief mail survey of 1985 and 1988 SLIS graduates in an effort to identify individuals who might be utilizing skills and knowledge gained at SLIS but operating outside traditional settings. Forty-six of the 256 questionnaires were returned. Given the school's historic emphasis on a humanistic model of public sector librarianship, a pattern which is clearly reflected in its placement record, it was not at all surprising that this approach generated few productive leads or insights. Most respondents continue to work in classical heartland positions, with little evidence of migration from one sector to the other.

FINDINGS

Overview

We identified 360 positions nationally from scanning selected professional and general media sources. It is impossible to estimate

what proportion of the emergent market that constitutes for the
timeframe covered. However, a number of generalizations can be
permitted:

1. There is a measurable market for information professionals who
   have the requisite mix of talents, know-how, and experience.
2. The market is diffuse.
3. This nascent market does not owe allegiance to any established
   professional body or disciplinary track.
4. The opportunities are scattered across a wide range of industrial
   sectors, though some evidence of concentration exists.
5. Job titles and functions are extremely variegated.
6. Subject expertise and business savvy matter most.
7. Traditional LIS education, as embodied in the MLS (Master of
   Library Science) degree, is perceived by many practitioners to
   be out of sync with the demands of the emergent market.
8. The market in Indiana is embryonic and likely to show only
   incremental growth in the near-term future.
9. LIS schools will need to revise not only their curricula but also
   their culture if they are to become successful players in this market.
10. Information consciousness raising will be an important
    component of any repositioning strategy favored by LIS schools
    with an eye on this market.

Analyzing the Ads

Market Indicators. Of the 360 posts included in our final analysis,
59 were Indiana-based, which suggests that we have probably
underestimated the national count. All advertised positions were
grouped by SIC code to identify areas of concentration. Likely areas
of opportunity seem to be associated with the following sectors (the
number of positions located in Indiana is mentioned first, followed
by the total for the rest of the country):

- Educational Services (SIC #82) = 10 + 46 = 56
- Business Services (SIC #73) = 6 + 47 = 53
- Engineering, Automotive, R&D Industries (SIC #87) = 4 + 31 = 35
- Human Resources Administration (SIC #94) = 9 + 18 = 27
- Chemical and Allied Products (SIC #28) = 4 + 14 = 18

The labels used to identify job opportunities in the information
sector reveal a high degree of diversity. Taken out of context, some
have no overt information orientation (e.g., sales representative and
project manager); others are, however, highly explicit (e.g., technical
online researcher). Some use traditional nomenclature but in the
context of nontraditional settings. One of the most striking features

of the laundry list was the degree of specificity in job titles (e.g., drug information specialist; senior small network systems analyst; cancer information specialist; nursing audit information officer; marketing executive for electronic publications). The portmanteau labels of "librarian" and "information specialist " have splintered dramatically to reflect the pluralistic character of the marketplace.

Credentials and Experience. More than half the posts required, preferred, or considered desirable an accredited MLS or MLS-equivalent. In some cases, an MBA, either with, or instead of, the MLS, was specified. In many others, the MLS (or equivalent) had to be combined with a particular kind of academic background, such as a BS in physics, pharmacy, chemistry, biomedical sciences, business, or journalism. In others, an LIS qualification was not deemed relevant (e.g., "Ph.D. in Information or Computer Science, or equivalent with an additional subject degree in the biological sciences"; "M.D. and/ or Ph.D.; ability to administer a major health care delivery institute involved in information science research, clinical epidemiology, clinical practice analysis and decision making, and health services research"). In yet others, particular skills, competencies, or work experience were preferred over paper qualifications (e.g., "Ability to manage complex technical planning procedures and implement large computer-based systems and telecommunications operations; Requires a working knowledge of Ethernet and X-25 communication, and of Decnet, TCP/IP, SNMP, IPSPX and OSI"; "BS degree, working knowledge of microcomputer technology, DOS, UNIX, and Xenix especially desired"). It is clear that the proliferation of job titles is a reflection of increasing specialization in the workplace.

In the great majority of cases, experience was a prerequisite of employment. Openings in the nontraditional sector do not appear to be targeted at entry-level professionals lacking experience (e.g., "5 to 8 years' experience in an academic health sciences environment; proven achievements in the introduction and development of innovative programs; continuing education experience desirable"; "4-5 years information systems experience, knowledge of systems development and implementation; proven ability to interview users and prepare systems documentation required; 1-2 years experience managing a systems design team highly preferred"; "Experience with online database searching especially with scientific, technical, business and legal databases is ideal"). Predictably, familiarity with information systems and technology, or extensive practical knowledge of database searching tools and techniques, feature prominently, though sometimes the list of desiderata goes well beyond technical competence to include specific kinds of organizational experience

(e.g., "Significant knowledge of or experience with automated library systems, microcomputers, networks, telecommunications, and common software packages needed. Prior teaching experience or familiarity with IAIMS, women's health, and associations desirable").

The following abbreviated list gives a flavor of the kinds of position titles we identified within Indiana alone: Data Specialist; Computer Network Specialist; Market Information Analyst; Information Center Analyst; Director of Management Information; Information Scientist; Media Systems Supervisor; Information Technology Specialist; Director/Developer of Information Systems; Research Coordinator/Archive Manager; Manager of Information Services; Programmer Analysts/DB Analysts; Medical Records Manager; Information Systems Manager; Market Information Coordinator; Coordinator of Information & Assistance; Communication Director; Legal Documents Indexers; Network Support Specialist; Director of Graphic Reproductions; Microfilm Specialist.

When background and qualifications are taken into account there were only eleven positions a minimally experienced liberal arts undergraduate MLS holder could credibly apply for within Indiana. Forty-two of the positions required experience beyond that which a student could obtain in school; many of these did not require a master's degree but did call for specific subject expertise or skills not necessarily taught in an MLS program. In only eight of these forty-two cases would the skills acquired in an MLS program be likely to confer a competitive edge, while, in thirty others, experience of programs such as business, computer science, and education would be advantageous. Only five positions expressly required a master's degree in library science.

Desiderata. Approximately half the advertisements specified particular traits or attributes which were deemed desirable, if not, in fact, essential for the job. Certain terms and phrases run like leitmotifs through the corpus—"dynamic," "excellent communication skills," "team players," "flexible," "self starter," "leadership skills," "enthusiastic." The message is inescapable—successful candidates will have first rate written and verbal communication skills; they will be able to operate independently, yet function effectively as members of a team; and they will be committed to developing user-centered services. Shrinking violets need not apply:

> Excellent communication skills; ability to work with other staff and clients to identify needs/opportunities. Analytical skill in developing solutions that are responsive to client needs and compatible with

[company] information strategy. Ability to take proactive approach to
client services and to exploit technology to improve records/information
management. Skilled in project planning and management.

The ability to envision change, and, at the same time, to act
as a persuasive advocate for change with key constituencies is also
at a premium: "Strong leadership skills; sophisticated oral and written
communication skills, including the ability to interpret technological
advancements and to articulate the OhioLINK vision to the user
community and funding sources; ability to work efficiently with
diverse client groups." And elsewhere: "Visionary ability to analyze
the informational needs of a large highly complex organization and
to develop/implement responsive informational systems; ability to
negotiate successfully innovative synergistic relationships with
information technology providers/users."

Face-to-Face Conversations

Cautious Optimism. The state-level interviews corroborated the
feeling that there is an expanding market for information
professionals. One independent information broker who had started
up a little over a year earlier was already planning to hire someone
or add a partner:

The potential for brokers is enormous, especially with small 5-10 people
companies. Any company with $20-30 million in sales should really have
"one of us" in the marketing department.

However, the sense of a market—in Indiana, at least, which is
not fully alert to the economic and commercial significance of
information—also comes across quite clearly:

We've only scratched the surface. I've just hired someone [with a high
school education only] to be a secretary and help with some of the
preliminary searching. We should be targeting consultants as clients
[everyone of them should be utilizing our services]. We are best at
[objectively] gathering the right information and then tell [clients] what
to do with it. (Independent information broker with an MBA & subject
expertise in biomedical instrumentation)

People don't realize the potential of information. Marketing now has
a database searcher who primarily searches the Commerce Business Daily
looking for government jobs to bid on and I can see that "our type
of person" could be used dealing with OSHA and NEC codes and
Training.... (Special librarian working for defense contractor, associate
degree)

Ninety percent of the questions are from small businesses with fewer
than 25 employees and there are about 4700 of these in the state. I've
only been here for a few months so I don't know but not many of those
4700 use us. If they did, well the work would be enough for many people.
(Nonprofit business organization, MLS)

We will need to innovate and get along with fewer people, but even
with innovation we will shortly be hiring another subject specialist just

to cover the R&D area and we haven't really begun to tap the business areas even though I am beginning to plan that expansion. I also plan on being the primary supplier of information to our other two U.S. operations. I can envision needing four [people] in the intermediate term. (Biomedical instrumentation, information manager, MLS, MBA, graduate work in Computer Science)

There are 3 "librarians" working for departments. One for medical devices and two for medicine. We are planning on adding a person and a subject specialist is needed. (Business library in pharmaceutical company)

[The] information function [is] viewed as one of the more important critical factors to the company's success. We will add people as needed but I think a lot more can be gotten for now with present staff. (Manager of information services, pharmaceutical company, MBA)

But a word of caution is needed before equating the emergent market with one that can be filled automatically by LIS graduates. At the local level, there are significant structural, manpower, historical, and image problems that will have to be overcome for LIS schools, and SLIS in particular, to begin to place more than just a token number of graduates in this market in the near-term future.

There is a danger of insisting on the MLS—this doesn't allow good people to come in. It is people who can get results that we need.

The critical skills for success in what I am doing aren't taught in the MLS programs. The MBA and MLS have a different orientation. The MLS was job training whereas the MBA [teaches one how to be effective]. (Biomedical instrumentation, information manager, MLS, MBA, graduate work in Computer Science)

A Recessionary Cycle? Our field work also suggests that within Indiana the number of special library positions at this time may be contracting rather than expanding. The one independent information broker interviewed who held the MLS had his business fold while the study was being completed. A broker working for a company, also an MLS holder, was demoted from supplying information directly to senior management to working as a subject specialist within the library. A special library in one of the state's major companies had to cut staff in half and lose one of its two facilities. A major electronics firm laid off the professional librarian and kept the clerk. A defense firm employing 2,500 cut two positions from its library. This pattern may, of course, be linked to the recession: historically, special libraries have tended to suffer cutbacks or closure at times of retrenchment only to bounce back when the economy recovers.

Low Entry Barriers. There are few barriers to entry in the information brokerage business—having some subject expertise, business savvy, a computer with a modem, reliable sources for documents, and passwords to several online search services is basically all that is

needed to be an information broker either within an organization or as an independent operator. Since the market often does not recognize that special training is needed in the "information arts," there is little reason to obtain a master's degree. For instance, Indiana InfoNet, which is operated by the Industrial Research Liaison Program at Indiana University, did not hire MLS graduates to serve as information intermediaries; they, along with most of those interviewed, did not equate the MLS with information provision. Several interviewees had established quite credible information operations within their organizations, yet had taken no, or very few, college courses. One individual in particular, holding only the associate's degree, had created specialized files and retrieval methods in order to support technical documentation as well as a selective dissemination of information (SDI) system.

Two Thumbs Down for the MLS. Only one interviewee specifically set out to get an MLS with the thought of securing employment in the emergent market. She had worked for a small database company in Indianapolis and had decided to obtain an MLS so that she could start her own information brokerage business. Several brokers who were former librarians had advised her to obtain the MLS as preparation. She felt that, except for the two courses she took at the IU Business School, she had wasted her time, adding that pursuing the MBA would have been more appropriate—a view shared by other interviewees who had had some experience with an MLS program.

Dissatisfaction with the MLS, both by holders of the degree and those who supervise or hire such individuals, seems to stem in part from the values that are imparted in the early socialization process. These values are not those needed to operate in the emergent market outside the institution of a library. As the head of information services in a major Indiana firm, who holds both the MLS and the MBA, put it: "I will never, never again hire an academic librarian—they do not understand service." A special librarian for a major defense contractor stated that she had once had students from IU SLIS for an internship but would never repeat the mistake: the only thing these two individuals wanted to do was stand behind a desk and circulate books. What is needed in this arena is an active approach to finding out what information is necessary for the organization to excel. Many of the students who attend IU SLIS—and similar schools—make money and defray tuition costs by working in academic libraries; assignments are completed in an academic library, the school is housed in an academic library setting, and many of the students have academic backgrounds. The dominant culture to which many LIS students are exposed is not reflective of the world at large and certainly does not reflect the value system of the emergent job market:

> I had to reopen the job—we advertised first in the library rags and the
> regional papers and then in the *Journal of Higher Education.* I hired

> J. because of her qualities which the others didn't have even though
> she does not have an MLS. There is a problem with hiring people.
> All the people who responded to the ad had no experience. Perhaps
> the words "fee based" is the problem, it can have a negative connotation.
> Many in the field don't want to be in the corporate environment. Also
> this is not a tenure track job and this may be a concern.

Sine Qua Non

Perhaps our most important finding, and it is by no means
peculiar to this study (e.g., Hill, 1990), is that both subject expertise
and business savvy are considered essential, independently or
conjointly, by employing agencies. A similar finding emerged from
our mail survey of SLIS graduates. Many respondents who were
working in an academic environment noted that, in order to be
considered a colleague of faculty members, a librarian needs to obtain
a second master's degree. In other words, the information practitioner
needs to understand the problems of practitioners of the field in order
to know what to collect—in the case of the academic librarian—
or how to go about finding answers—in the case of information
intermediaries. One pharmaceutical firm conducted a senior level
assessment of the contribution made by information to the conduct
of their business and concluded that it was crucial to long-term success
and should be considered a top priority. They determined that business
awareness and subject expertise were crucial elements of a successful
information professional. Possession of an MLS or a Master's in
Information Science, however, was considered by far the least
important factor in an employee's on-the-job success.

One of the larger energy utilities decided to hire a professional
information specialist and set about determining what might be
entailed. The company had had a librarian for some time, but this
individual's responsibility was merely to maintain a traditional library
of documents that were important to the firm. They had recognized
that, as access to timely and relevant information became more crucial
to the success of the operation, they needed someone with appropriate
skills to spearhead the effort. They concluded that the MLS was
not important but that extensive experience in their field was. Herein
lies the dilemma for IU SLIS—many firms in Indiana seem to
recognize the need for information intermediaries, but SLIS students
are not applying, and librarians are not being seen as viable
candidates, either by employing agencies or by those with the MLS
who happen to find themselves operating in the field.

A Preprofessional Market?

We had assumed that those in special library environments would
either be in the process of taking on roles beyond the traditional
domain of the library or would be able to tell us about the career

trajectories of others who had done so. Yet, many of those who are considered librarians in Indiana-based companies are not professionals in the sense that they do not hold a master's degree, often not even a bachelor's, nor do they maintain any sort of professional affiliation. They were often secretaries before their designation as a librarian and are often considered clerical; many are simply keepers of documents, though several have established quite adequate information operations without any sort of formal training. Of the fourteen heads of special libraries/information services we interviewed, eight did not have an MLS, and only one belonged to the Special Libraries Association. Information brokers often belonged to the Association of Independent Information Professionals, while other information intermediaries were members of professional organizations that reflected their particular subject specialty.

As more companies hire specialists to gather information from outside the firm, there is a fragmentation of the traditional functions carried out by special libraries, with the archival function staying in the room called the library and with database searching, committee work, and translation services being spun off to others. One major Indianapolis firm has a small archival library headed by a woman holding no degree who considered herself a library technician. About eight years ago, she realized the potential of information provision and convinced her boss to hire a database searcher, then a patent searcher, and finally a talented MLS/MBA who is now attempting to coordinate information provision company-wide. What is important here is that these new recruits do not operate within the library environment but operate out of the larger department of which the library is but a part. The library itself is simply the archive for the larger information operation, and the librarian's job is viewed as being within the archival space. If the individual occupying that space does not view his/her role as providing information in the larger context, then the provision of external information defaults to another who may well view the library in a very narrow sense.

An information manager—who was also a senior executive—was able to keep all of the information operations in his pharmaceutical concern under one umbrella, which, for the time being, is still labeled a library. He is, however, strongly considering changing the name because of the persistent association of a library with the notion of a collection, and he is attempting to position the operation as a supplier of all kinds of internal and external nonaccounting information. A growing challenge to establishing or maintaining a dominant supplier position by either the special library, or a larger information department, comes from research, marketing, and other operating departments that are hiring, or designating, their own information specialists.

The example of a major trucking company illustrates what happens when there is no strong internal supplier of information.

A special librarian working for a major defense (electronics) contractor was appointed to her position because she was a secretary who could "get the answers." She is presently helping a secretary in the trucking company establish a similar archival operation. The electronics firm library houses internal documents, standards, National Technical Information Service documents, journals, and several CD-ROM indexes, and the assumption is that the trucking firm library will be similar. Several online database searchers work in the shipping firm's marketing department supplying profiles of companies that the department has targeted as possible new business. One of the independent information brokers interviewed in this study also supplies services to individuals within the firm's marketing department who are not happy with the lists of citations that the online searchers provide. So here we have three species of information intermediaries within one organization.

Ignorance and Image

An obvious problem in attempting to supply professionals to the emergent market is the lack of a single or even a core group of organizations that might give focus and sanction to efforts to train practitioners. In fact, the only common link that could be found among the various information intermediaries and brokers was readership of *Online*. In their brochure on where to obtain schooling for the emerging "information market," the American Society for Information Science gives equal weight to schools of business, computing, and library and information science, recognizing that no one school as they are presently defined could possibly encompass all that is "information." The American Library Association's (1992) revised *Standards for Accreditation of Master's Programs in Library and Information Studies* also tacitly acknowledges the breadth of the marketplace for information professionals. The information market is wide open and is likely to be characterized by competitive diversity. Library and information science schools would have a difficult time establishing a monopoly as sole supplier to this market, not least since employers/practitioners do not presently look to them for leadership or to supply labor.

The case of the pharmaceutical company mentioned earlier illustrates the kind of obstacle LIS schools will face. After the company determined that its long-term survival depended upon enterprise-wide information flow, it sought a librarian to handle the library side of the information operation, but it proved

difficult to find someone who can deal both with the scientific and business communities. I tried to hire a good business MLS—we advertised in the *New York Times, Chicago Tribune*, the library media—we spent

> $8,000 and two years and got nothing but junk and we pay very well.
> I finally took one of my inhouse people and trained him; he is just
> now coming up to speed.

This senior manager of one of the largest special libraries in the state, in one of the larger pharmaceutical concerns, was not even aware that SLIS had a Chemical Information Specialization track in its MLS program.

The head of an employment agency in Manhattan that operates exclusively in supplying special librarians/information specialists, highlighted some of the manpower issues. This agency has many more positions open than can possibly be filled by viable candidates. Pay for these jobs, even for entry-level candidates, can run close to twice the norm for a comparable public, university, or school position. The problem is that the three feeder library and information science schools in New York cannot supply even a fraction of the qualified candidates she could place—qualified in her mind means an MLS coupled with business experience. The problem, as she sees it, is that LIS schools cannot attract candidates with business experience or interest.

Business Savvy and Client Centeredness

The historic inability of LIS schools to recruit individuals who have backgrounds, or at least an active interest, in business, engineering, science, and technology will hamper efforts to open up this emerging market because the subject expertise of the candidate is seen as extremely important, and, unless suitable individuals can be recruited, there is little hope of succeeding in creating a viable pool of candidates from which employers can choose. According to Heim (1991), only 11.5 percent of all students in accredited MLS programs have an academic background in the physical or biological sciences, law, business, medicine, or engineering. Given that the last few years have seen the closure of several major library schools, there will more than likely be increasing competition for those few graduates with business, engineering, and the sciences backgrounds from academic libraries.

There are some image problems that may not be easily changed, as Slater (1979) documented more than a decade ago. An information intermediary working for the management team of an animal products company said that an MLS without extensive background in the subject area could not do his job. Repeatedly, those operating in this area talked about the inability of everyday librarians to provide what their clients really needed:

> Clients want us to read everything on x and tell them what it says—
> they don't want a long list of citations like librarian searchers give them.

> Librarians don't understand the value of information to their business clients—don't understand the cost of people's time, or of opportunity cost.
> There is some resentment by librarians, the keepers [of the materials]—we supply what people really need. People depend on me for something [I don't just point to a source].
> Librarians need to cultivate an image of professional respect—they should be running a business and not a library.

There are also perceived difficulties in supplying information to senior management in large organizations:

> [There is a] problem with getting senior management to utilize you effectively. They tend to rely on their own networks. An example...my predicting a competitor would sell off a division we needed and because management could not verify this with their own personal contacts they didn't believe my analysis. Three months later another competitor purchased that very division and we certainly could have used it. Managers want answers not printouts. They want information shaped and formed. Strategic thinkers are generally home grown. A lot of them are hitting think tanks or the large consulting organizations like Arthur Anderson. They have vast resources. It's the middle and lower level managers that are not taken care of and that is where my market is.

In order to plug into personal or strategic networks, one must be able to share experiences and values. One of the problems in attempting to move LIS graduates into a position of trust with senior management is that the experiences and values of librarians are so different from those of management, or even those of the operational departments. Librarians are often seen by others—and sometimes by themselves—as separate and aloof. An advantage of an independent information gatherer who is not part of the personal network is that there is a greater chance of getting an unbiased assessment of assumptions made by both senior and line managers. Success in this employment arena depends to a large degree upon how well an individual can take on the problems and confidences of target clients and be relied upon for accurate reliable assessments. The trick is to be independent, yet able to tap into, and be part of, the personal networks of managers, researchers, and operatives at all levels of the organization.

CONCLUSION

Coordinates of the Market

Though difficult to quantify accurately, there is ample evidence of an emergent job market for information professionals. However, a diachronic study would be needed to establish precise dimensions and annual growth rates. Nonetheless, the kinds of positions we have identified in our eighteen-month content analysis of published job advertisements—an approach used by both Cronin (1982) and Moore

(1987) in their mapping of the emerging market for information professionals in the United Kingdom—give a reasonably clear sense of the trend. Opportunities are opening up both within and beyond the heartland market for suitably qualified information professionals. Within traditional library environments, there is a growing demand for specialists with nontraditional skills and attitudes, while, outside such environments, demand for suitably qualified information professionals seems set to grow. There is some evidence of a similar trend at the local level, though Indiana is hardly a bellwether state as far as information careers are concerned—the local hinterland market is relatively small and underdeveloped.

Repositioning Strategies

Some schools of library and information science have already begun to target this sector, but it is by no means a captive or potential monopoly market. Competition can be expected from other academic players (e.g., communication/media studies; journalism; computer science; business administration; information systems) as the territory "belongs" to no one professional or disciplinary tribe. This point has been made forcefully by Abbott (1988) in his systems-based analysis of the evolution of the information (and other) professions:

> The information professions are in some sense specialists in diagnosis...many other varieties of information professionals besides librarians have tried to expand into their clients' work, similarly claiming an increasing jurisdiction over action itself because information is prior to action.

Although many of the advertisements we analyzed specified an MLS or equivalent, many others sought different qualifications, and our local interviews reinforced the feeling that the MLS degree is far from being the ideal qualification—indeed, it is clearly perceived by some to be a disadvantage. It is not, therefore, surprising that the LIS schools which have been most successful thus far at targeting the emergent market are those which offer alternatives to the MLS. Syracuse offers a master's in Information Resources Management; Pittsburgh, SUNY Albany, Toronto and City University offer a master's in Information Science; Sheffield and Strathclyde both offer a master's in Information Management; Florida State is about to bring on stream a master's in Information Studies, and Rutgers' portfolio includes a master's in Communication and Information Studies. Some schools have also moved down the undergraduate track—for example, Drexel with its BS in Information Systems.

Given the repeated emphasis on subject background and business savvy, some LIS schools might well consider positioning themselves aggressively as providers of capstone courses in information studies. The ideal preparation for the emerging market would be a subject

specialty such as engineering, business, or the life sciences, combined with courses that stress the principles and practice of information management beyond the walls of a library, but such is the variegated nature of the marketplace that students with backgrounds from anthropology to zoology will undoubtedly find a niche.

In the great majority of cases, IU SLIS graduates have not found their way into this arena, in part because of the relatively small number of positions being advertised within the state and partly because of the school's highly traditional focus during the 1980s— as reflected in its recruitment and placement record. Actions that SLIS could take to attempt to become a significant supplier to this area in the medium- or longer-term cluster around issues of recruitment, curriculum change, and socialization. In order to work as a professional information intermediary in any of the industries looked at in this study, a practitioner should ideally have significant training or experience in the industry or some knowledge of the culture of the employing organization. SLIS should position itself so that students in disciplines who would not normally migrate to, or minor in library and information science programs, will think of SLIS as a viable option for furthering their careers.

It is abundantly clear that LIS schools will have to provide programs and courses that take a broader look at the provision of information than that provided within the context of a library (e.g., Harter, 1982). In particular, Taylor (1979) has long since made the point that once librarians "cut their umbilical cord to libraries and similar document-based systems, they then become very interesting professionals indeed, for they have unique and significant knowledge, skills and attitudes" (p. 1873). And, in fact, Learned's (1924) exhortation of almost seventy years ago has lost little of its pertinence: "Mere grubbers in books according to professional tradition or a prevalent conception of a public librarian will not do" (p. 17). Students and instructors should recognize the needs of the client as being the rationale for providing services rather than concentrating on the needs of the institution. The information professional's job is to filter, organize, and synthesize information on behalf of clients. Experiences and values other than those of academia need to be instilled in students who are considering working in the emerging market—that means encouraging information entrepreneurs rather than those seeking tenure, risk-taking rather than safety.

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