
New information management opportunities in a changing world

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Abstract

Evaluates gap between traditional library and LIS and needs of the IT workplace. Includes literature review of characteristics which knowledge and information managers need in the private sector. Three surveys were carried out via questionnaires and compared with literature review. Surveys were of business needs, LIS courses content, and experience of LIS graduates. Results suggest that while LIS graduates are being equipped with the necessary skills, the view of "the librarian" is impeding entry of LIS graduates into the knowledge management employment sector. Graduates with LIS skills need to market themselves more effectively in the IT workplace.

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Introduction

This is an exploratory paper to evaluate the gap between traditional library and information studies (LIS) skills and the evolving needs of the information technology (IT) workplace. We discuss whether graduates with LIS training are perceived as having the requisite skills and personalities to perform as knowledge managers and information managers in the private sector.

The paper includes a literature review of the characteristics which knowledge and information managers are perceived as needing in the private sector.

Three surveys were carried out via distribution of e-mailed questionnaires. The surveys were of business needs, LIS courses content, and the experience of LIS graduates. These findings are compared with the findings of the literature review.

Knowledge and information management in the private sector

Information management has traditionally revolved around the selection, acquisition, analysis, evaluation, organisation, storage, retrieval, presentation and dissemination of recorded knowledge in a variety of media.

Although no single definition has yet been agreed upon, knowledge management (KM) is the composite management of people + processes + information and its purpose is to enable people to build, use and share their knowledge by giving them the appropriate environment and incentives, including technical support.

The need to organise online information is a result of the vast amount of online information currently available and the knowledge that this volume of information will increase significantly in the future. As organisations move more and more intranet and Internet information onto databases, users of information are experiencing information overload. Only when information can be used can it begin to contribute to any overall KM initiative. We have become dependent on the flow of information and in doing so have created a knowledge economy:

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The knowledge driven economy is the economy of the future (TFPL, 1999).

Successful economies and organisations depend on public and private sector capabilities, which in turn depend on:

- the quality and creativity of people;
- the ability to learn and adapt; and
- the will and ability to create, store, harness and utilise knowledge.

To be successful in a knowledge economy, organisations need to change and adapt. But first we need to understand what constitutes KM activities. According to TPFL (1999), the main elements are:

- knowledge and information sharing;
- identification and exploitation of best practice;
- management and exploitation of intellectual assets;
- developing a learning organisation;
- skills training and development;
- improved information sharing with clients and partners;
- integrating all information and knowledge sources; and
- promotion of expertise to clients and potential clients.

The following quotation also serves to clarify what constitutes KM:

Initially KM activities often focused on the collection and storage of information. More important however is the understanding of: knowledge creation processes, information and knowledge flows within and around business processes and the impact of knowledge and information on business success (TFPL, 1999).

It is vitally important for both public and private sectors to accept that KM has moved from being an optional extra to a strategic necessity. It has taken years for managers to buy into the whole approach, but they have since realised the necessity.

The majority [of managers] are looking for greater business effectiveness as a result of access to the right information or else for efficiencies in information retrieval which free time for better use (TFPL, 2000).

Literature review

This literature review deals specifically with the characteristics which knowledge and information managers are perceived as needing in the private sector. The review also briefly looks at the existing literature in the

structure of LIS education courses and its relevance to these market requirements.

The job market for information professionals has expanded considerably since the 1980s, as predicted by Moore (1987). However, if librarians and information workers are to populate this market they must be able to offer the range of skills and experience that employers are looking for.

Moore's (1987) is the most cited LIS-focused study of the information labour market, but a more recent Australian study (Brittain, 1996), using a method based on Moore, maintains that there are many non-traditional employment opportunities. The author, Brittain (1996), suggests, however, that LIS graduates may need to gain additional qualifications, skills or experience to obtain these opportunities.

This study found that many of the jobs in the then emerging market were taken up by non-LIS graduates, but were compatible with the skill-set of LIS graduates. It was found that library educators were partly to blame for these lost opportunities as many had resisted the need to re-orient LIS courses. Library educators were also slow to see that there were careers other than librarianship available to graduates from library schools.

The term emerging (information) market has been defined as:

The employment opportunities available in information work that exist outside traditional libraries and information service units (Brittain, 1987).

This market can use the skills gained through LIS education.

It is abundantly clear that LIS schools will have to provide programmes and courses that take a broader look at the provision of information than that provided within the context of a library (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.

Students and instructors should recognise the needs of the clients as being the rationale for providing services rather than merely concentrating on the needs of the institution. The information professional's job is to filter, organise, 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 (Cronin *et al.*, 1993).

A number of factors have converged to compel a substantial reassessment of the educational requirements for library-oriented careers in information management (IM) (Koenig, 1993). These factors include the role of technology and the convergence of domains that it has produced, the growth of special libraries and corporate employment, the growth of information industry employment, and the increased mobility of information professionals.

The educational ramifications of these changes are considerable. There needs to be:

- more orientation toward the corporate and information industry constituency;
- more emphasis on data and information structuring and the design of information systems;
- development of a more entrepreneurial approach and market orientation;
- development of a more international orientation; and
- development of a core component that is general to the information professions and not specific to librarianship, in recognition of the great mobility among information professionals (Koenig, 1993).

Personality attributes of knowledge/information managers

As with all organisational roles, certain personality characteristics have been identified as being influential in the ability of an individual candidate to fulfil their role. It is these skills which define an information specialist. However, the literature review also brought to light certain personality attributes perceived as necessary for knowledge managers (TPFL, 1999, personal fieldwork):

- creativity;
- ability to learn and adapt;
- will and ability to create, share, harness and utilise knowledge;
- understanding of knowledge creation processes;
- understanding of the impact of knowledge;
- information literacy skills – creating, finding, sharing and using;
- understanding of the knowledge process;

- understanding of the principles of the “organisation of knowledge” are key; and
- business acumen.

Desirable KM candidates should display ambition and risk taking personalities and enjoy taking up new challenges.

Survey methodology

Three surveys were conducted via e-mailed questionnaires. These questionnaires were followed up by personal phone calls to ensure the greatest response possible to the surveys. The first questionnaire (Appendix 1) was sent to the human resources department of 20 sample companies, all of which work in the field of organising online information. The aim of the questionnaire was to ascertain the skills required by the human resources department in their information specialists. The first survey will be referred to as “business survey”. The second questionnaire (Appendix 2) was sent to course convenors of the various BAILER institutes as part of an assessment of course components and will be referred to as the “LIS departments survey”. The third questionnaire (Appendix 3) was sent to a sample of ten LIS graduates, based in Ireland, to garner their opinions on the usefulness of their qualifications in the workplace. This will be referred to as the “LIS graduates survey”.

Business survey results

Survey description

A survey was carried out in a group of 20 sample companies, all of which deal with the subject organisation of information in an online environment. The survey was e-mailed to the human resources departments of the companies in question and follow up phone calls were made to achieve the maximum response to the survey. The survey (Appendix 1) was issued to 20 companies and seven companies responded.

Survey results

In terms of assessing the deployment of those with LIS training in this employment field, the results, although limited, were telling (see Table I). There is currently little or no perceived use for librarian skills within the field of the subject organisation of information in an online environment. Not

Table I Business survey results

Finding	No. of company responses
(1) Companies perceived themselves as being involved in the subject organisation of online information	5
(2) Companies employ information specialists for the development of subject organisation of online information	3
(3) Companies required specific skills in their information specialists. The skills required were listed as: ontologists; linguists; cognitive science degree; computer science degree	3
(4) At entry level, those employing information specialists required no additional skills outside of the skills listed above	3
(5) Number of companies provided both internal and external training for their information specialists	3
(6) Number of companies which would employ an "information specialist" for the subject organisation of information in an online environment	1
(7) Reasons put forward for not employing an "information specialist" were: outsourcing of the skill; perceived necessity of coding skills; perception that the position is not an individual job, but rather an aspect of many jobs; and process of organisation of information in an online environment is automated	7

one of the companies surveyed listed librarianship training or classification skills as being necessary or useful to their business. There would seem to be no interest in the use of librarians for the subject organisation of information in an online environment.

Despite the classification training of librarians, which would help greatly to formalise methodologies in this area, human resources departments in the information management industry seem to have completely overlooked the usefulness of librarianship and classification training in this field. This result is supported by anecdotal evidence and our experience in the field of subject organisation of information in an online environment.

LIS departments survey

Survey purpose

The purpose of the second survey was to establish the extent to which the curricula of current information studies departments/schools teach the relevant skills identified in the first study for future employment opportunities in the private sector.

Survey description

A survey was carried out on those universities that have LIS departments/schools in the UK and Ireland. The survey was to include both degree and postgraduate courses in:

- information studies;

- information management;
- information and library studies/management;
- information administration;
- information analysis;
- knowledge management;
- information science;
- information services management;
- electronic information management.

The survey was e-mailed to the relevant staff at these schools with follow up e-mails made to achieve maximum response to the survey. The survey (Appendix 2) was issued to 21 universities with LIS departments/schools; only four replied.

It was decided that this response rate was too low from which to draw any conclusions. A study of the Web sites of the relevant LIS departments/schools was included in order to ascertain what modules were being taught as part of their course. It was also thought that conducting a survey of LIS graduates could prove helpful in this respect.

Survey results

An assessment was made, with the combination of survey results and Web site studies, on the curricula of the current information studies schools/departments. There were two clearly diverse courses being offered under the LIS umbrella – those that catered nearly exclusively for employment in the library sector, and those that catered for employment in the broader area of information management. The former were usually entitled "information and library studies/management" and included the

standard library education modules of classification and cataloguing, organisation of information, and information theory. The latter comprised more comprehensive modules in the organisation and management of information with a definite emphasis on the provision of information to ensure its proper and timely use in management, decision making, and research.

LIS graduate survey

Ten LIS graduates, all based in Ireland, were questioned about their experience, and the experience of their colleagues, as employed LIS graduates. Quite a number of them are moving away from the traditional library and finding work in the corporate sector. Job titles may include librarian, information manager or information specialist, but being able to provide knowledge and information management skills is necessary. The graduates' perceptions of their LIS qualifications were that, while the courses were useful as a starting point, and could be built on with "on the job" experience, more attention was needed in the online and electronic information fields.

Speaking from the authors' own experience as LIS graduates, and having worked in the field of subject organisation of information in an online environment for two-and-a-half years, the skills which we have found most useful in working with online information in the private sector can be represented under three general headings:

(1) *Communications skills:*

- the ability to explain how and why subject classification works to people with a business and/or technical background, and to inform them that database design, information architecture and project management are all jobs which can benefit from the LIS pool of skills; and
- the ability to ascertain what a client needs as opposed to what a client thinks s/he needs.

(2) *Business impact awareness:*

- the ability to adapt traditional librarianship skills in the organisation of information so as to develop a subject classification system that

allows the client company to enhance its current working practices; and

- an understanding of why and how classification is useful in achieving a company's goals.

(3) *Personality: logical thinking mindset:*

- the ability to maintain a logical mental picture of large sets of information within an organisation, an online database, or Web site.

Results

The results seem to suggest that while LIS graduates are being equipped with the requisite skills needed to organise online information and manage knowledge, the stereotypical view of "the librarian" is impeding the entry of LIS graduates into the KM employment sector. Graduates with LIS skills need to market themselves more effectively in the IT workplace.

Therefore, LIS graduates, and all others who aspire to become information managers, should be encouraged to read advertisements carefully, work out why their knowledge and skills are appropriate and then present themselves in a way which highlights this relevance and their suitability to fill the position. Little research has been conducted into this new field of employment opportunity and its potential value to the existing community of librarians. While librarians do not have full training in how, exactly, to organise online information, they have a good grounding in the theories of information organisation and classification. The experience that librarians have gleaned over the years in reference queries, combined with introductory HTML and database courses, add to the skills necessary to assess what a client is really looking for, and where the client expects to find such information. All of this is beneficial in organising and managing online information, creating intranet and Internet sites or aiding in database design.

The authors' experience indicates that a gap exists in the market for individuals who can adapt traditional skills, such as classification, to online information management from a business perspective. Following the widespread implementation of corporate intranets and enterprise information portals, it has become apparent that, in many cases,

not enough thought had been given to the underlying issue of information access.

The principle objective of managing information is to ensure its proper and timely use in management, decision making, and research. As a result, information professionals today must be oriented towards the use of information – unlike many traditional librarians who have been interested in the acquisition, classification and storage of documents for its own sake. They must be able to demonstrate that they have the practical competence to carry out the tasks required of them. To this extent librarians and information workers must be able to offer more than just information handling abilities.

'... It would seem that while librarians are still being taught the basic skills of classification and information organisation, their common enemy in entering this employment field is the stereotypical view of the librarian...'

From our study it was found that many of the traditional LIS courses were still being provided and these were geared towards employment in the academic/public library sector, with emphasis on the traditional library skills such as classification, cataloguing, library systems and automation. However, there was also a move towards courses more focused on the emerging market employment sector – that of the information professional. Courses such as information services management, information analysis, business studies and information management, accounting and information management and information management itself have all been developed by LIS schools to try to get a foothold in this emerging market.

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 academic discipline (Cronin *et al.*, 1993).

As evidenced in the literature review, the areas where librarians are perceived as falling down in the business field are not in the area

of skill-sets, but in the areas of personality attributes. Few people, if asked to describe a librarian, would include the adjectives “risk-taking” or “ambitious”. Neither are librarians perceived as being “creative”. The authors’ experience in the field and certain responses to the LIS departments survey suggest that our business acumen has also been called into question. While LIS graduates have most of the qualities required in a knowledge manager, the survey of companies in the business sector reveals that human resource managers do not think of LIS graduates when they recruit information specialists. Furthermore, even LIS departments do not perceive their graduates as “ambitious” or “risk-takers”, or, in many cases, as having “business acumen”. There would seem to be a two-fold problem – the image of librarians and the perceived versus desired characteristics of candidates.

It would seem that while librarians are still being taught the basic skills of classification and information organisation, their common enemy in entering this employment field is the stereotypical view of the librarian. There is an implication that the librarian’s skill in creating order indicates a lack of creativity and a disinterest in how the information is used. While this view has been irritating to those working in the field of information organisation for some time, it may now seriously threaten their ability to access the employment potential of the organisation of online information. This issue needs further analysis and research. Steps must be taken to ensure librarianship and information science graduates are fully prepared for working in the private sector in the fields of information organisation and knowledge management.

LIS education is being perceived within the LIS sector as extremely relevant to KM/IM activities but the gap between skills learnt and their application is wide. There is a wide range of subjects available at under-graduate and post-graduate level, which are extremely relevant to KM/IM environments. There is a significant amount of re-investing in information theory, but the transfer from skills being taught to their application in the workplace is vital. A number of LIS departments in the UK and Ireland are beginning to address KM as a subject and modules taught are beginning to reflect this.

However, the lack of real liaison between LIS educators and potential employers

compounds this problem, hinders the development of relevant modules and perpetuates the perception of LIS professionals only relating to traditional library environments (TFPL, 1999).

The authors believe that the qualified librarian can comfortably take over the position of KM practitioner. Their skill-set is such that they are prime candidates to work in this sector. The obstacle that must be tackled is the widespread perception of "the librarian". Employers are, to a certain extent, realising the role librarians can play in their organisations but there is also a fundamental part to be played by LIS departments. LIS departments must cater for traditional library skills, but they must also cater for wider employment opportunities. With the rapid growth of knowledge management organisations, there has been a notable increase in companies recruiting information specialists. The LIS sector must market itself and its graduates to these corporations. Employers must be made aware that LIS graduates can fill these vacancies; that they have the skills necessary and the confidence to fulfil the information specialist role.

KM is essential for organisational survival in the long run, given that knowledge creation is the core competence of any organisation (Malhotra, 1997).

The corner is being turned, awareness on both sides is growing:

Librarians – fulfilling the role of knowledge manager . . . they need to change some things about how they do their work but the awareness and application of knowledge has always been at the centre of their jobs (Davenport and Prusak, 1998).

Conclusions

There would seem to be a two-fold problem facing LIS graduates entering the new employment fields of KM/IM – "image" and "personality".

The literature review indicates that there is a gap in the market that LIS graduates are equipped to fill, but certain adaptations need to be made. LIS graduates need to ensure they have the range of skills and experience which managers are looking for, and they must be able to demonstrate that they have the practical competence to carry out the tasks required of them.

LIS courses need to adapt to provide graduates with the necessary skills to take up the new roles developing in the marketplace. Some LIS schools are, indeed, making progress in these areas, but it is interesting to note that these changes are being made by developing new courses aimed at that marketplace, rather than redeveloping and broadening current courses in LIS training. The LIS schools seem to be making the same distinctions between librarians and knowledge or information managers as those working in the private sector. As this trend develops, it will be interesting to see if the personality types being recruited for the new KM/IM courses are more "risk-taking" and "ambitious" than those traditionally recruited for LIS courses. The LIS sector may, in fact, be pandering to the perception of traditional LIS graduates as being suitable for employment only in the traditional sectors of libraries.

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Appendix 1. Business survey

Q.1 Does your company deal with the subject organisation of online information? Yes / No

Q.2 Do you employ information specialists to develop the subject organisation of online information? Yes / No

If 'Yes', please go to Q.3

If 'No', please go to Q.6

Q.3 At entry level, do you require any special skills in your information specialist? Yes/ No

If 'Yes', please list _____

Q.4 At entry level, do you require any special training in your information specialist? Yes/No

If 'Yes', please list _____

Q.5 Do you provide any specialist training for entry-level information specialists? Yes / No

If 'Yes', please list and outline briefly. _____

In-House? _____

External? _____

Please go to Q.10

Q.6 Would you consider employing information specialists for this work? Yes / No

If 'Yes', please go to Q.7

If 'No', please go to Q.9

Q.7 What skills would you require in an information specialist?

Please list _____

Q.8 What training would you look for in an information specialist?

Please list _____

Please go to Q.10

Q.9 Please list why you would NOT consider employing information specialists to develop the subject organisation of online information. _____

Q.10 Any other comments?

Appendix 2. LIS department survey

Q.1 What Information Management courses does your University provide?

Q.2 What are the specific requirements to gain entry to these courses?

Q.3 If work experience is a requirement, please elaborate

Q.4 (a) What are the titles of the modules that teach classification?

(b) The modules that are taught as part of your course include...

	Agree	Tend to agree	Neutral	Tend to disagree	Disagree
Library Classification					
Development of classification system					
Legacy of legacy systems					
HTML					
XML					
Metadata Management					
Database Management					
Web Design					

Q.5 The following skills are taught on your course...

	Agree	Tend to agree	Neutral	Tend to disagree	Disagree
Classification					
Information Analysis					
Information Organisation					
Information Retrieval					
Information dissemination					
Structuring and Categorising of information					

(continued)

Q.6 Are there other modules that you could teach, but do not, which would benefit your students in the area of information storage and retrieval?

Q.7 At what specific employment sector is your course aimed?

Q.8 In what other sectors could your graduates find employment?

Q.9 What inter-personal skills are particularly useful in this sector?

Q.10 Do graduates generally possess the following character traits or abilities?

	Agree	Tend to agree	Neutral	Disagree	Tend to disagree
Decision making					
Risk taking					
Ambition					
Networking					
Leadership skills					
Ability to work in teams					
Creative thinking					
Management experience					
Business acumen					

Appendix 3. LIS graduates survey

- (1) Type of workplace
 - (a) library
 - (b) corporate sector
 - (c) other (please specify).
- (2) What skills were considered necessary for your job specification?
- (3) Did you have to adapt your traditional library skills for your job?
- (4) What training, if any, were you given in order to carry out your job (specification)?
- (5) Do you agree that LIS graduates gain the necessary training to create, adapt and manipulate classification systems? (if that be the case).
- (6) Do you think your LIS course content catered for the changing job markets in online management of information?