Education for the Information Management Profession: Challenges and Opportunities

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ABSTRACT

The paper addresses the implications of a few major emerging trends in the design of educational programmes for the information profession. It describes the emergence of the knowledge society, the phenomenon of the globalisation, and convergence of the technologies. It also describes the direct bearing these phenomena have on education for the information management profession.

Keywords: Information management, knowledge society, globalisation, knowledge economy

1. INTRODUCTION

Some of the key characteristics of globalisation that we are witnessing are:

�ిక The emergence of new kinds of trade in services,

�ిక Technological revolution in communication that has made the globe itself the site of operation for major organisations, and

�ిక The growing influence of market forces practically in all spheres; innovation-driven supply and supply-driven demand.

Success and utility of all social systems are assessed in terms of their ability to sense and manage changes rapidly and favourably with changing times. Models for assessing any organisations' success often relates to its capacity in terms of wealth generation and management. These apply equally to manpower development programmes. The phenomenon of globalisation of higher education is probably among the more recent entrants on the globalisation scene.

The changes initiated by the emergence of knowledge economy are visible since the last decade of the 20th century. Some of the key characteristics of the knowledge economy are: the recognition of the importance of knowledge and information as key inputs for all development-related activities and programmes, and the transformation of societies

into global villages as a direct consequence of the globalisation and increasing business processing outsourcing (BPO) and knowledge processing outsourcing (KPO).

These phenomena are not unrelated; in fact they enjoy a mutual 'cause and effect' relation.

2. GOAL OF THE PROFESSION AND THE FEAR OF ISOLATION

The goal of the information profession has remained unchanged: provision of efficient, effective, convenient and cost-effective access to information to those who are in need of it. The five laws of library science emphasise this. In the knowledge economy, however, the role and degree of importance of information and the speed at which access to relevant information is often sought have changed substantially as a direct consequence of the increasing informatisation of the society. The evolution of the profession in recent years has been a direct consequence of such changes (Table 1).

The information society, is characterised as a society in which low-cost information is in wide and general use. It is also referred to as the knowledge (-based) society, to emphasise the fact that the most valuable asset is investment in intangible, human capital and the key factors determining growth and development are knowledge and creativity.

The greatest challenge that the LIS profession in India (and probably elsewhere too) will face in the coming years is the distinct possibility of isolation triggered by the emergence of a parallel and a more sophisticated information management profession. There is a paradigm shift in the ways in which information is generated, published, accessed, communicated, disseminated and utilized. New information technologies are playing a central and key role in the emergence of a range of mechanisms (with a wider range of labels that include libraries and other memory institutions, digital libraries, institutional repositories, digital archives, open archives, knowledge management systems, learning resource centres, knowledge resource centres, to mention a few); a range of careers and a new industry centered on information. Information systems of all kinds, including libraries and knowledge management systems, are fields of institutional investment: they are major commitments of resources to building and putting to use certain facilities. This can only be justified in terms of the extent to which these facilities augment and enhance human and organisational capabilities; or in terms of the disadvantage, loss and negative impact resulting from not having such facilities. The same may be said of investment in institutional mechanisms aimed at training manpower to work in libraries and information systems. Their utility and value (or lack of these) has to be measured in terms of their ability to train suitable and relevant manpower for the emerging job market. Going by the significant amount being invested by major organisations to augment their knowledge management/information facilities, it indeed appears that organisations have begun to see investments in information/ knowledge management as important for their growth. Since, this information sector is not limited to the libraries; it is a potential job market for the information manpower being trained. The important question is whether this sector will look to the LIS schools and their educational programmes for their information manpower needs? Three

Table 1. Evolution of the information profession

Era	Main thrust
Pre-industrial age	Storage and preservation of information materials
Industrial age	Collection, development and organisation of information
Knowledge economy	Enhancing access to information

factors, likely to have a bearing on manpower development programmes in the information field are:

✆ The requirements of the emerging information systems and the emerging job markets,

✆ The changing manpower needs and requirements in the traditional libraries, and

✆ The nature of job positions being occupied by products of LIS Schools.

3. EMERGING SCENARIO

Two recent studies have sought to examine the nature and complexion of the emerging information job market. Table 2, which is based on some recent job notifications on the Web, gives an idea of the nature of changes that have taken place in terms of skills and knowledge expected of potential recruits in the traditional library job market. It is obvious that the nature of requirements even in the traditional libraries is significantly different from what normally constitutes the course contents in a LIS education programme at the master's level.

Table 3 shows the nature of job positions occupied by a random sample of 32 students who graduated from the Documentation Research and Training Centre, Bangalore, and obtained their Associateship in Information Science between 1996 and 2005.

Another factor which will influence the nature of demand of information professionals in the future, is the corporate sector. India is fast emerging as a major source for outsourcing knowledge work and is also trying to emerge as a global player in manufacturing and supplying products for certain types of industries (like auto-components). In order to be competitive globally many of these new businesses and even the older industries are modernising. More than ever before, corporate institutions are beginning to realise the importance of an adequate facility within their organisations for effective information management. A check of six large corporations who have major

operations based in Bangalore (including IBM, Infosys, Honeywell, GCI Solutions, etc) indicated that all of them have created a unit within their organisation responsible for knowledge management.

All these clearly suggest that there are certain common denominators that will drive the demand for information professionals of the future. These are:

✆ New methods and forms of work organisation requiring effective communication skills,

✆ The need for and desire to put to effective use the tools and technologies for harnessing and utilising both tacit and explicit knowledge in organisation-building activities,

✆ The emergence of the corporate sector as a major destination for information professionals. This naturally comes with a higher demand for accountability, performance measurement, etc., which seems natural given the global players who have set up shops in India and the initiation of the processes of globalisation of the Indian industry. More and more organisations appear to be realising the importance of hiring an information specialists in the business-development process

✆ The transition from paper to digital and multimedia resources,

✆ Dis-intermediation of the process of searching for and accessing information, and

✆ The increasing demand for specialisation within the LIS profession and the shift from 'ownership' to 'access' via networks in traditional libraries.

Familiarity in the use of IT appears to be an essential requirement at all levels and for all positions. It is against this background, need to examine manpower development programmes for information professionals is required. It does indeed appear that there is a profound gap between the course contents,

Table 2. Skills/knowledge expected of LIS professionals

Job title	Skill/knowledge requirements
Electronic Service Librarian	Web architecture principles, database design, web authoring and graphic design, scripting language, develop complex websites, Macromedia MX, hardware and software for text and image digitization
Preservation Field Services Officer	Preservation education, word processing, spread sheet, software program, web design and maintenance
Associate Director of Public Services	Knowledge of electronic and print reference sources, technology for reference services, library user education, digital technology, Web authoring tools and standards, foreign language expertise
Automation Librarian	Horizon databases, OPACs, Sybase SQL, Unix, Novell Netware and Windows, W/MCSE certification
Library Director	Management of Voyager integrated library system, scientific databases and e-journals, MARC tag field, OCLC cataloguing, LC subject heading, MS access, Excel, PowerPoint, Word.
Bibliographic and Technical Services Coordinator	OCLC Cataloguing, metadata, ILL, MARC format, batch loading, retrospective conversion, computer applications in libraries.
Programmer/Analyst, Digital Library Development	Apache, Tomcat, Java/JSP, database design, MySql/Postgres, XML, XSLT, CSS, Perl, metadata standards such as METS, MARC and MIX, and digital library protocols such as OAI, web design, digital repositories (DSpace preferred), working in a Unix/Linux environment, working with digital images, in particular jpeg 2000.
Web Developer	HTML, DHTML, XML, CGI, and Java, Web development tools such as Acrobat, DreamWeaver and Fireworks, relational database systems such as Oracle and MySQL, CSS, RSS.
Digital Librarian/Cyber Infrastructure for Biodiversity and Ecosystems	Digital formats, conversion alternatives, metadata standards, access and navigation tools, digital preservation issues, digitisation and multi-media/non-text formats, building electronic libraries in cyberspace, biodiversity/biology/ecology/conservation biology
Digital Library Program Head	Digital library services-digital image conversion projects, management and delivery of electronic full text, Web delivery of multimedia formats, and metadata file management. Image capture and delivery technologies, full-text mark-up and searching methods, database management systems, HTML, SGML, XML, CGI, programming languages: SQL, C, C++, Java, and Perl, hardware and software applications in DOS, Windows and Unix environments, library and information standards (e.g., MARC, Z39.50), library integrated systems, and issues and developments in digital library development.
Web Development Librarian	Database design and development, e.g., Microsoft Access and SQL, Web database middleware development (e.g. cold fusion), Internet technologies, subject indexing and classification including metadata schema, Web user interface design and evaluation.
Librarian for Digital Repository	Digital libraries, electronic archives, institutional repositories, or equivalent open access vehicle, basic metadata schemas, especially Dublin core, HTML.

the knowledge and the skills most students learn in schools and the knowledge and skills they need to work effectively and efficiently in typical 21st century communities and workplaces.

4. CONCLUSIONS

If manpower development programmes in context of India have to remain relevant in the coming years, it is important to seriously examine the employability and suitability of the products of our programmes in terms of both the qualitative and quantitative requirements of the emerging job market.

Some of the exercises initiated in other countries as a response to some of these developments needs a look here. Two of the most important projects/documents in this context are the Kaliper Report (USA), and the LIPER Project (Japan). These undoubtedly, are among the most comprehensive and important exercises carried out in recent

Table 3. Nature of employment of LIS graduates (1996-2005)

Sector	No.
Library–corporate houses	4
Specialised information work–corporate sector	4*
Library–college	3
Library–research/university	4
Library–others	4
Faculty positions	2
Research/higher studies	4
Knowledge management–corporate sector	2
Software development–corporate Sector	2
Self-employed/consultant	2
Marketing of information products/services–corporate sector	1

* Technical writer, Instructional designer

times. One of the major trend identified by these surveys is: though library jobs remain important, LIS curricula have begun addressing requirements of broad-based information environments and information problems to prepare students for jobs in other environments and situations.

The emergence of *i*-schools also represents a response by the academia, especially the LIS schools, to the paradigm shifts taking place. The *i*-school movement in India has just begun with the opening of the ISIM in the University of Mysore in association with both information industry and academic institutions within and even outside the country. This should be seen as a logical next step in the series of exercises that have been initiated by a number of agencies including the curriculum restructuring exercises of the University Grants Commission.

As already mentioned the greatest challenge for the LIS profession and LIS schools in the near future is the distinct possibility of isolation triggered by the emergence of a parallel information management profession. That there is a need to redefine the boundaries of our profession in order to continue to be relevant in terms of developing and providing human resources for the typical 21st century workplaces, which require knowledge and skills of a different kind and of a different order, should be evident from the foregoing

discussion. Another opportunity that has just begun to open is the emergence of information content industry resulting in proliferation of information products and services that are not library based. The information content industry, which is still in its infancy in India, offers enormous scope for growth in terms of opportunities for content creation for the Web and the online industry.

What do we need to do to our manpower development programmes to ensure that information professionals will continue to make a difference as they indeed did for the scholarly community of the 20th century? Perhaps a factor that can justify the LIS profession is the increasing recognition that with the increase in the sheer quantity of information is crucial to ensure that quality information becomes easily searchable and accessible.

As James Morris puts it:"The challenge is to move from infobesity to infodieting". While we need to make our information systems and institutions including libraries user friendly and wanted (the number of searches in Google in a day exceeds the total number of visitors to all the libraries in the US in a whole year), we also need to look beyond libraries, which is where the future of the information profession clearly lies. The keys to remaining relevant in the changing market place, therefore, are:

- To focus on value-addition processes; find new applications for established and proven techniques/processes that librarianship has developed over a century and more, and

- Innovating with the structure of specialisations that are being offered in our educational programmes.

FURTHER READING

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"The best way to predict the future is to invent it"

— Alan Kay