Knowledge Economy in India and the Growth of Knowledge Management : Role of Library and Information Professionals

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Abstract

Knowledge is increasingly important as a source of wealth at all levels of an economy. Most new jobs and wealth creation are fuelled by the international competitiveness of new knowledge-based industries. In fact, knowledge may soon be the only source of competitive advantage for an organization. These knowledge assets reside in many different places such as: database, knowledge bases, filing cabinets and people's heads and are distributed right across the organization. All too often one part of an organization repeats work of another part simply because it is impossible to keep track of, and make use of knowledge in other parts. Libraries as major functions of an organization need to know what the organization's corporate knowledge assets are and how to manage and make use of these assets to get maximum return.

Introduction

The knowledge economy and the growth of knowledge management, as an essential competency of organizations, provides new opportunities for librarians and information specialists to expand existing roles and utilize the skills they have honed to meet corporate objectives. The key information managementm role of both internal and external information, alongside the contribution to information competence and the ability to contextualize information, contributes to organizational excellence, customer benefit and competitive advantage which can be achieved more effectively through collaboration and partnership.

The new Knowledge Economy is a period of rapid change – a paradigm shift – for librarians and libraries. It can be viewed as either the beginning of a new "golden age" for the profession, or the point when librarians and information professionals became marginalized, and perhaps made irrelevant, by the rapid advances in digital computer and telecommunication technologies and the networking power of the Internet, intranets, and extranets. Librarians and information professionals are in a position to transform themselves into value-adding knowledge professionals. However, this will require a radical change in how they view their roles and jobs within knowledge-based organizations. It will require them to visualize a world of rapid change, instant-aneous communications, and the transformation of organizations from those based on identifiable boundaries to networks of business relationships. This is the challenge facing the profession.

Concept of Knowledge Economy

The World Bank Institute offers a formal definition of a knowledge economy as one that creates, disseminates, and uses knowledge to enhance its growth and development.

A knowledge economy uses data as it raw material and transforms it using technology, analysis tools, and human intelligence into knowledge and expertise.

Definitions of the knowledge economy

"the role of knowledge (as compared with natural resources, physical capital and low skill labour) has taken on greater importance. Although the pace may differ all OECD economies are moving towards a knowledge based economy" (OECD 1996).

"… one in which the generation and exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge; it is also about the most eff ective use and exploitation of all types of knowledge in all manner of economic activity" (DTI Competitiveness White Paper 1998).

"the idea of the knowledge driven economy is not just a description of high tech industries. It describes a set of new sources of competitive advantage which can apply to all sectors, all companies and all regions, from agriculture and retailing to software and biotechnology" (*New measures for the New Economy*, report by Charles Leadbeater, June 1999).

" *economic success is increasingly based upon the effective utilisation of intangible assets such as knowledge, skills and innovative potential as the key resource for competitive advantage. The term "knowledge economy" is used to describe this emerging economic structure"* (ESRC, 2005).

"the knowledge society is a larger concept that just an increased commitment to R&D.

It covers every aspect of the contemporary economy where knowledge is at the heart of value added – from high tech manufacturing and ICTs through knowledge intensive services to the overtly creative industries such as media and architecture" (Kok, et al., Report,*2004).*

Is the knowledge economy a new or 'weightless' economy?

Some have argued that the emergence of a knowledge-based economy is a major departure, a 'new economy' off erring endless productivity gains, faster non inflationary growth- and ever-rising stock markets. It was argued that the ICT revolution allowed firms to exploit scientific and technical knowledge bases to give them an unprecedented competitive edge with, for example, constantly falling transaction and processing costs. In turn the new knowledge economy would give rise to new organisational forms within and between companies and a radical shake-up in employment relationships as more and more knowledge workers became portfolio workers, freelancers, or self-employed.

Knowledge Economy in India

As a result of the 1998/99 World Development Report on Knowledge for Development, the topic of the knowledge economy gained prominence with policymakers worldwide. In 2001, the K4D (Knowledge for Development) program held a high-level policy forum to share knowledge strategies among key stakeholders from Brazil, India and China—potential knowledge superpowers representing 45 percent of the world's population.

The timing of the event was nearly perfect. The Indian government was already working on a strategy to transform the country into a knowledge superpower and was keen to cooperate and explore a set of issues that coincided with its own reform agenda. India had gradually been building a knowledge economy, having made great strides in pharmaceuticals, medical sciences, and information technology. This led to increased interest on the part of the government and private sector to look for ways to raise the country's growth rate.

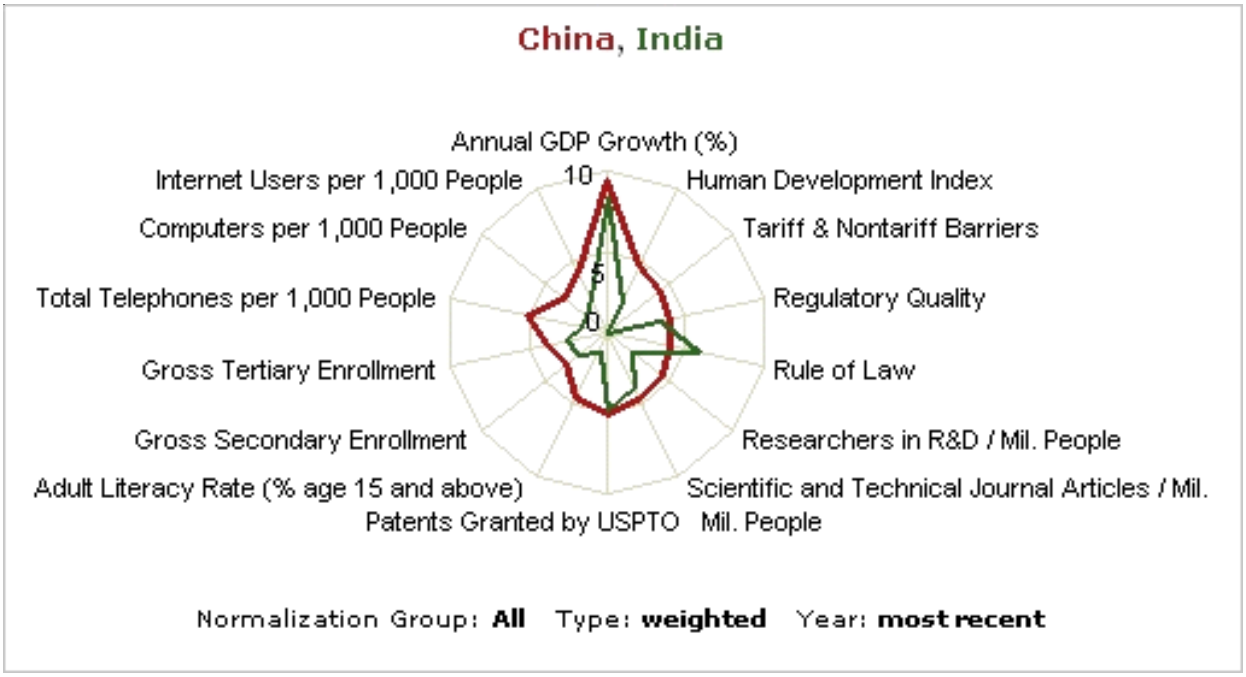
There was also a growing awareness in India that the knowledge economy means more than having strong IT and high-tech industries. The K4D team proposed an analytical framework consisting of four components: *the economic incentive and institutional regime, education, information and communication technologies (ICT), and the innovation system*. Effective use of knowledge in any country requires appropriate policies, institutions, investments and coordination across these four pillars.

High-level representatives from key government ministries, the private sector, the academic community, NGOs, and mass media from Brazil, China and India attended a high level policy forum at Wilton Park, UK in 2001. As a result of this forum, and in response to demand from the Chinese government, the K4D program undertook a detailed knowledge economy assessment of China entitled China and the Knowledge Economy: Seizing the 21st Century in 2001. The Planning Commission of the Government of India also produced a report in 2001 on India as a Knowledge Superpower: Strategy for Transformation that focused on IT and biotechnology and India Vision 2020 in 2002. The President of India, Dr. A. P. J. Abdul Kalam's 2002 strategy *India 2020: A Vision for the New Millennium* also stressed the importance of knowledge and ways to facilitate India's transition to the knowledge economy.

A strong consensus emerged on the need for an in-depth study on India's position in the global knowledge economy. This work was included in the World Bank Country Assistance Strategy for India, clearly indicating its importance for the Bank's operational activities in the country. The initiative moved quickly because an ideal mix of stakeholders was at the table. The K4D team, comprising Carl Dahlman and Anuja Utz, led the initiative and provided the analytical know-how. The Finance and Private Sector Development Unit of the South Asia Region of the World Bank financed the work and provided many valuable inputs. Participation by the private sector through the Confederation of Indian Industry (CII), and the inclusion of key representatives from the Government to get consensus on the scope of the study helped to ensure broad buy-in from the outset. Extensive consultations at a K4D workshop in 2004 with high level Indian policymakers, major private sector firms (Infosys, Ranbaxy, Boston Consulting Group, among others), educational institutions, think tanks, and research institutes ensured high quality of the final product. In a related initiative, the Prime Minister of India also set up a National Knowledge Commission in 2005 to leverage various knowledge networks to make India a knowledge engine of the world.

Value of Cross-Country Comparisons

To illustrate, the report relied on K4D's interactive benchmarking tool – the Knowledge Assessment Methodology (KAM). Below are the KAM score-cards for India and China that demonstrate their performance on key Knowledge Economy indicators for the most recent period for which data is available. The variables are normalized on a scale from zero to ten relative to other 131 countries in the comparison group.



Note: GDP growth and Patent Applications Granted by the USPTO are the annual averages for 2001-2005 (most recent). Most of the remaining recent data is for 2004-05.

Source: www.worldbank.org/Kam

The book 'India and the Knowledge Economy: Leveraging Strengths and Opportunities" was officially launched at the World Bank by the India Country Director in June 2005. This report assessed India's enormous asset base: skilled human capital, broad use of English, dynamic private and financial sectors, strong institutions that support a free market economy, a broad and diversified science and technology infrastructure, and strong global niches in the IT industry. Nevertheless, given the fast pace of change in the global economy and the impressive economic achievements of countries such as China, the report argues that India needs to do more to obtain the full impact of its investments in knowledge-related areas. Reforms of the higher education and innovation systems are of special concern.

Continuous Engagement on the KE agenda

The K4D team is currently contributing to follow-up work on the innovation pillar led by the Finance and Private Sector Development Unit of the World Bank's South Asia Region. India should take steps to improve its innovation system not only by applying new knowledge created at home, but also by tapping knowledge from abroad and disseminating it within the country for greater economic and social development. One of the world's largest economies, India has made enormous strides in its economic and social development in the past two decades. But according to a new World Bank report, 2005)India can do much more to leverage its strengths in today's knowledge-based global economy.

India and the Knowledge Economy: Leveraging Strengths and Opportunities argues that, when supported by the right kind of government policy incentives, the country can increase its economic productivity and the well-being of its population by making more effective use of knowledge.

"This report serves as an important Bank input into the domestic consultation and reform process which will move India further into the global knowledge economy of the twenty-first century," says Michael Carter, World Bank Country Director for India. "The World Bank recognizes that making effective use of knowledge in any country requires developing appropriate policies and institutions to promote entrepreneurship and efficient use of knowledge."

Grooming World Class Knowledge Workers

India already has many highly educated and vocationally qualified people who are making their mark, domestically and globally, in science, engineering, information technology (IT), and research and development (R&D). But they represent only a small fraction of the total population.

"To create a sustained cadre of 'knowledge workers,' India needs to make its education system more demand driven to meet the emerging needs of the economy and to keep its highly qualified people in the country," suggests Anuja Utz, co-author of the report. "This means raising the quality of all higher education institutions, not just a few world-class ones, such as the Indian Institutes of Technology."

Some ways of making the system more demand driven are to allow the private sector to fill the burgeoning demand for higher education by relaxing bureaucratic hurdles and through better accreditation systems for

private providers of education and training. Increased university-industry partnerships to translate research into applications can yield economic value. Lifelong learning programs can be used to meet the learning needs of all, both within and outside the school system, including using distance learning technologies to expand access to and the quality of formal education and lifelong training programs.

Promoting Innovation

India is becoming a major global source of R&D; about 100 multinational corporations have already set up R&D centers in the country, leading to the deepening of technological and innovative capabilities among Indian firms. But even so, "India is still a relatively closed economy compared with other Asian economies," notes Carl Dahlman, co-author of the report. "India should increasingly tap into the rapidly growing stock of global knowledge through channels such as foreign direct investment, technology licensing, and so on, so that it can catch up to countries like China, where reforms have moved ahead much more rapidly."

An important part of India's innovation system is the diffusion of modern and more efficient technologies in all sectors of the economy. According to Dr. R.A. Mashelkar, Director General, Council of Scientific and Industrial Research of India, "India is already gaining international repute for its innovations in areas ranging from pharmaceuticals to software. IT will achieve even more as it improves the efficiency of public R&D, increase private R&D, and encourages greater university-industry linkages. It is leveraging traditional knowledge with modern science and exploiting public-private partnerships to support grassroots innovations which can improve the quality of life for the poor. An example is the Computer-Based Functional Literacy program, initiated by Tata Group to overcome illiteracy through innovative use of IT."

Preceding the World Bank Knowledge for Development report and its recommendations by some eight years, was a report from the Island state of Singapore titled *Library 2000: Investing in a Learning Nation* (Singapore Ministry of Information and the Arts 1994) noted that the future belongs to countries whose people make the most productive use of information, knowledge and technology. Singapore had recognized that these were the key factors to economic success, not natural resources, of which she had very little.

In sum, India is very well positioned to take advantage of the knowledge revolution to accelerate growth and competitiveness and improve the welfare of its citizens, and should continue to leverage its strengths to become a leader in knowledge creation and use. In the twenty-first century, India will be judged by the extent to which it lays down the appropriate "rules of the game" that will enable it to marshal its human resources, strengths in innovation, and global niches in IT to improve overall economic and social development and transform itself into a knowledge-driven economy.

Growth of Knowledge Management in India

The systematic process of finding, selecting, organizing, distilling and presenting information, improves an employee's comprehension in a specific area of interest. Knowledge management helps an organization to gain insight and understanding from its own experience. Specific knowledge management activities help focus the organization on acquiring, storing and utilizing knowledge for problem solving, dynamic learning, strategic planning and decision making. It also prevents intellectual assets from decay, adds to firm intelligence and provides increased flexibility.

As per Teleo's Indian Most Admired Knowledge Enterprises (MAKE) Report growth of knowledge management in business enterprise in India is as follows (*http://www.knowledgebusiness.com*).

Many of the Indian MAKE leaders adopted their corporate knowledge strategies during the late 1990s and early 2000s. Although starting several years after pioneering Western companies, Indian-based organizations have been very successful at benchmarking and transferring knowledge best practices found in Asian, European and North American MAKE Winners.

Today, only a few Indian MAKE leaders have reached parity with their Western MAKE counterparts–most Indian organizations still lag behind regional and global MAKE leaders.

- Indian MAKE leaders are focusing on intellectual property, intellectual assets and brands, but as a rule still do not have in place enterprise-wide intellectual capital management strategies.
- Advanced IT-enabled collaborative knowledge sharing tools are now a core competency for MAKE Winners. It appears, however, that Indian, Asian and North American MAKE leaders are more 'innovative' in applying new Internet-based tools to effectively share and reuse knowledge in an increasingly global workplace.
- European and North American MAKE Winners have improved their scores in managing customer knowledge. Many Indian organizations continue to fall well below the MAKE leaders' standards. In order to move into higher value-adding product/service segments, Indian enterprises must focus on this important knowledge performance dimension.
- Financial reporting for Indian companies is more opaque than found in North America and Europe. As a result, Indian companies have placed less emphasis on managing, measuring and reporting their effectiveness in transforming enterprise knowledge into increased shareholder value.

Investors and national/global financial regulators are increasingly demanding greater 'transparency' in reporting this information. Indian firms will come under growing pressure to implement best practices in this area.

- According to the MAKE expert panel, the Indian knowledge-based economy is driven by the following key business sectors (based on the number of MAKE Finalists in each industry): IT software/solutions, manufacturing and telecommunications.
- The second annual Indian MAKE study has revealed that the country's knowledge leaders are few and concentrated in one business sector–IT solutions. This large concentration of Winners from a single business sector indicates that there are few knowledge 'role models' available throughout Indian business and industry.
- It also should be noted that there is a significant gap (in the total composite score) between the ten Indian MAKE Finalists and other nominated organizations. The result is a two-tier Indian knowledge league table. In other words, the Indian MAKE Finalists have knowledge processes which match those of MAKE leaders from around the world. However, the remaining Indian MAKE nominees are still in the early stages of implementing their enterprise knowledge strategies and must spend more time and effort before they can join the Indian MAKE Winners' circle.
- The Indian government and national business associations face the challenge of creating programs that encourage and facilitate the sharing of best knowledge practices between the Indian MAKE Winners and the rest of country's business and industry. This structured transfer of knowledge skills and competencies will enable all of Indian business to more effectively compete in today's global knowledge economy.

Anil Ambani, Managing Director of the US$ 20 billion conglomerate, Reliance Industries, really set the tone for discussions on information and technology by outlining corporate India's agenda for leveraging knowledge for growth. Knowledge is multidimensional and much broader than just being embodied in IT as is commonly supposed. India could exploit tremendous opportunities also in biotechnology that could unleash a new growth pattern in agriculture as well as curing diseases like diabetes. According to Newsweek, the next Genentech might well be in New Delhi as a number of companies such as Nicholas Piramal spend US$ 3 million a year on genomic research.

India also has major sources of competitive advantage in health, leisure and entertainment. According to Ambani, Indian corporations must seize the opportunities for knowledge-led growth by investing in intellectual capital and building capabilities around people. To be successful, corporations must also be flat, informal and nimble-footed to be able to cope with rapid change and capture emerging markets thrown up by globalization. The fact that the number of working people in India would grow to 600 million by 2020 is an unprecedented opportunity to build on.

In the health sector, India's formidable strengths include its proven capabilities in alternative systems of medicine like *Ayurveda, Yoga,* and availability of skilled medical and paramedical personnel, low manpower costs and growing demand for health services from neighbouring countries. From west Asia, many people come to India for medical treatment and surgery, which is cheaper than elsewhere. According to Naresh Trehan, former Executive Director and Chief Cardiovascular Surgeon of Escorts Heart Institute and Research Centre: "If India is to become competitive on the global front, inputs including training, infrastructure and hospitals will have to be comparable to those in the west."

India's leisure and entertainment sector is not new but is booming as never before. The country produces the highest number of films, many of which are targeted at the vast Indian Diaspora abroad. According to T. N. Ninan, Editor of Business Standard, India, family entertainment centres and theme parks are just taking off and are expected to grow phenomenally over the next five years. Peter Mukherjea, Chief Executive Officer of News Television, India, also said that his company has taken the programming decision to include Hindi, which together with Mandarin, Spanish and English are set to dominate the world.

Among the knowledge-based industries, however, India has made a mark as a global player in IT. A majority of the Forbes list of richest Indians includes IT entrepreneurs like Azim Premji, Shiv Nadar and Ramalinga Raju. One advantage that India has is its vast Diaspora of netizens who have made a mark in this industry in the US. No less than one third of the start-ups in Silicon Valley belong to non-resident Indians. Some of these successful "netpreneurs" are already eyeing opportunities in India as angel investors. Many are also returning for good to work in the country – the reverse of the much-vaunted brain drain.

A two-fold opportunity thus presents itself. One is to make a transition from India Inc. to India.com: the other is to utilize IT to improve the efficiency of all parts of the economy, especially those traditional smokestack industries. In other words, making what was brick and mortar into click and mortar industries. As for the former, Subhash Chandra, Chairman, Zee Telefilms, India, stated: "If we do it seriously, we have to do it seriously ourselves rather than hire outsiders." The framework of government policy must also change to enable tech entrepreneurs to become a driving force in the economy.

As an illustration, Chandra stated that software professionals are in great demand abroad and that 200,000 of them have headed for the US. If, instead of going to the US, all these engineers were given 2 MB bandwidth to work within India they would earn US$ 60 to 80 billion in foreign exchange every year. Imagine what this could do for the country's balance of payments! If properly used, IT can also enable education to be spread to rural India as well. So instead of just India Inc. or the 300 million people in urban India, the entire Indian population will have a basis to prosper.

Role of Library and Information Professionals

We take it for granted that catalogues in libraries will help us find the right book when we need it. The body of research and practice in classification and knowledge organization that makes libraries work will be even more vital as we are inundated by information in business. Tools for thesaurus construction and controlled vocabularies are already helping us manage knowledge.

The need for a paradigm shift that libraries and information centers have to undergo is supported by Orna (1999), who recommends that they shift from "…a store of information to a source of knowledge and innovation.. business intelligence service converting information to intelligence service by means of expert filtering, editing, archiving, and researching" She also concludes that the skills and focus of librarians and information workers will change radically. The Information Advisor (1997) believes that such skills will include the ability to understand organizations as a whole and how the parts work together, the ability to comprehend and elaborate on information and knowledge needs, the ability to identify inefficient and improper uses of information, and the ability to add value to information products by evaluating, filtering, abstracting, and providing a broader organizational/ industry or national context.

However, it is not only libraries and information center managers who need to carry out a paradigm shift, other sectors in Indian society also need to reassess their positioning and role in society, for example: human resources management and the theory of management sciences, basic, secondary and tertiary and continuing education, as well as policy framework to enable the efficient communication, sharing and free flow of knowledge within the country.

The NLB Library 2010 Report addresses the key challenges for the Singapore society and economy, and provides a strategic response. As Singapore moves into the era of a knowledge-based economy, the role of libraries in such an environment will become much more significant.

Libraries help in nurturing a society of life-long learners who can accelerate the creation of intellectual capital and create a new cycle of national innovation. This is an important factor of competition, much needed for success in a competitive knowledge-based economy. In the coming years, knowledge will take on an even more critical role as a social differentiator between communities and between nations.

The role of libraries in converting information to knowledge is one of the issues touched upon in the Singapore Library 2000 report. The report recommends that instead of merely providing access to information available in formal sources, libraries should provide opportunities for users to gather information and social intelligence through informal channels and social interaction. Libraries and other information centres were tasked to host various events such as talks, lectures, forums, exhibitions, demonstrations and performances so that participants can interact with and learn from other participants, and speakers of the events (Ministry of Information and The Arts 1994: 35).

There is need to analyse the skills and subject knowledge required by information workers to provide business and economic development information. It would also be useful to study the attitudes of librarians and information workers towards providing information to groups engaged in small and medium enterprises and their feelings towards providing services to the new groups. It is important to gauge their preparedness to embrace change and see this as a priority above the traditional groups they are used to serving. It is important for libraries and information centres to view information as an economic resource within the information/knowledge pyramid framework, and address the need for converting information into knowledge as one of their responsibilities.

The multidisciplinary nature of knowledge management has resulted in input from people in different fields including economists, human resource professionals, IT professionals and library and information professionals. From these and other disciplines have emerged time-to-time claims for ownership of the area based on specific competencies. In the case of LIS professionals, competencies invoked include familiarity with information and knowledge, and with users and related technologies. More generally, a perceived overlap between the activities of LIS and knowledge management has been cited, with some commentators maintaining that KM is a new name for what librarians have been doing for years (Gorman, 2004). Koenig (1997) argues that much of the terminology and techniques used in knowledge management, for example, knowledge mapping, seem to have been borrowed from both information management and librarianship (Koenig, 1997). It was observed by Davenport and Prusak in 1998 that the awareness and application of knowledge have always been at the centre of librarians' work. Similarly, knowledge management has been described as librarianship in new clothes (Koenig, 1997) and more

controversially as nothing more than information management (Wilson, 2002). Others have recognised that there is more to the matter than simply the relabelling of LIS (Broadbent, 1997, 1998; Corrall, 1999; Davenport and Cronin, 2000).

Such opinions, notwithstanding, there is a strong element within the LIS literature that while accepting that information management is an important component of knowledge management, would regard the latter as both broader in scope and different to library and information management owing to its concern with management and with organizational issues, including an emphasis on less tangible and elusive resources like human expertise. Elsewhere in the LIS literature is the view that knowledge management requires a mixture of skills and needs the co-operation of people from different fields. Hence, knowledge management is "a combination of information management (IM) for managing the documentary form, and HRM for managing the expression of knowledge" (Middleton, 1999, p. 2). For those who would advocate much greater involvement of the LIS professionals in knowledge management there are implications not only for a need for new skill sets, but also for new ways of thinking. However, for some, the opportunities involve more than justify the effort that would be required (Joanne Marshall as quoted by DiMattia and Oder, 1997).

Not of course that the LIS professions have exactly ignored developments in knowledge management. Although by no means all the reaction has been positive (see for example the writings of T.D. Wilson) much of it has focused on opportunities for enhanced professional status and career prospects, as well as on the potential risks of non-involvement. Much of the evidence for these claims appears to be anecdotal. Although some of the most successful and visible players in knowledge management have come from information professional backgrounds (Albert, 2000) in competition with professionals from other disciplines such as IT and business management, LIS professionals in general have not fared particularly well in the knowledge management space (Klobas, 1997). One reason for this apparent lack of success could be that according to research conducted in the USA, quite a number of KM initiatives in library and information centres have gone little beyond traditional information management activities (Marouf, 2004). This would appear to be supported by evidence from Taiwan which reveals insufficient participation by information service units in corporate knowledge management projects, including website and intranet initiatives (Chen, 2005).

On the other hand, there is empirical evidence for the involvement of libraries and LIS professionals in knowledge management projects, particularly those located within the corporate sector. From Canada, it has been reported that many information professionals involved in knowledge management programs are in fact playing key roles, such as in the design of the information architecture, the development of taxonomies, or content management for the organization's intranet. Others are playing more familiar roles, such as providing information for the intranet, gathering information for competitive intelligence or providing research services as requested by the knowledge management team (Ajiferuke, 2003).

The diversity of experience reported in the Canadian-based research matches comments and findings from elsewhere. For example, a frequently cited survey conducted by TFPL observed that "Though it is apparent that information management is very much part of the KM environment, it is only one part and only truly effective when applied with an understanding of the full KM picture" (TFPL, 1999). Similarly, Broadbent remarked that: "KM requires a holistic and multidisciplinary approach to management processes …" (Broadbent, 1997). It is hard to read such comments without contemplating the need for serious changes in the skill sets of LIS professionals if they are to engage seriously in the practice of knowledge management. Indeed, further research may reveal that nothing less is needed than wholesale changes to mindsets and professional cultures. The results of an Australian survey of the perceptions of knowledge management among LIS professionals revealed a lack of understanding of the concept (including wide variations in the terminology employed) and no general consensus as to the relationship knowledge management and information management (Southon and Todd, 2001; Todd and Southon, 2001). It is clear both from the lack of empirical evidence and the wide diversity of opinion reported, that such findings as have emerged to the present time may not necessarily be representative of the LIS professions as a whole.

Reardon (1998) has the view that knowledge management is still a rapidly developing area within which it is essential that the information and library professionals realise they have a critical role. The rate of change prompted by the advent of knowledge management is such that we are in clear danger of being left out as the framework of career opportunities develops and changes over the next few years. Already, some of the most important posts to emerge in knowledge management - Chief Knowledge Officers, Head of Knowledge Management Architecture, Director of Intellectual Asset Management, etc. - are being captured by professionals from management, finance and information technology. There is a need for significant changes in thinking, attitude, education and training before we can confidently face the knowledge management future that awaits in many important areas of the information and library professions. The Schools of Information Science have a responsibility for initiating and leading these changes.

The concept of knowledge management as a valuable

resource for development requires better understanding of the fact that KM is made up of tacit and explicit knowledge components. Explicit knowledge is codified, recorded, and available to all whereas tacit knowledge is experiential in nature. It would seem from the nature of knowledge management, that libraries and information centres will find it easier to manage explicit knowledge rather than tacit knowledge. Given that tacit knowledge is now regarded as of equal value to explicit knowledge, it is important for libraries to have more system in place which attempts to tap into knowledge networks in society and organizations, as well as managing explicit knowledge. Many aspects of managing tacit knowledge however, require improved knowledge sharing culture in respective organizations and a paradigm shift in the style of human resources management and organization restructuring. An important aspect of tacit knowledge is indigenous knowledge which libraries and information centres in India have to be more actively involved in than in the past.

Conclusion

So we can say from the above discussion that Library & Information Professionals can play a major role in knowledge economy in India. This is a great opportunity for library professionals to use their skills in managing knowledge for growth as they are doing it in managing information and knowledge since a long time. They only need to tone up their skills to contribute in knowledge economy, otherwise IT, management and finance professionals will take this opportunity and we the librarians in India will loss the opportunity. Indian Govt. and corporate world also need to give the opportunity to LIS professional's first rather than other professionals because library professionals are trained for it and have expertise in this work.

Thus to play the new role, capacity building is required to enhance the skills of librarians and other information workers to provide business and economic development information and intelligence to users. There is also need to know the legal framework which governs the exchange of knowledge products throughout the world such as WIPO, copyright, as well as IPR. Digital librarianship is also becoming an important area of concern for the retooling of librarians and information workers if they are to perform in the new knowledge economy. But first of all, one need to establish what are the exact training and capacity building needs of the information workers before starting to run workshops, seminars and other forms of training. Within Schools of Information and Library Science, there is need to build capacity to teach ICT courses, knowledge management, and database creation and management. Indeed, it should be noted that there is need to review the LIS curriculum in India so that some old courses that are no longer relevant are demoted to create space for the new subjects.

References

1. Ajiferuke, I. (2003), "Role of information professionals in knowledge management programs: empirical evidence from Canada", *Informing Science Journal*, No.6, pp.247-57.
2. Albert, J. (2000), "Is knowledge management really the future for information professionals?", in Srikantaiah, K., Koenig, M.E.D. (Eds),Knowledge Management for the Information Professional, *Information Today, Medford*, NJ, pp.63-76.
3. Broadbent, M. (1997), "The emerging phenomenon of knowledge management", *The Australian Library Journal*, Vol. 46 No.1, pp.6-23
4. Broadbent, M. (1998), "The phenomenon of knowledge management: what does it mean to the information profession?", *Information Outlook*, Vol. 2 No.5, pp.23-34.
5. Chen, H.-h. (2005), "The working environment and changing role of corporate librarians in Taiwan", *Journal of the American Society for Information Science and Technology, Vol. 56 No.11, pp.1227-36.*
6. Corrall, S. (2006), *"Knowledge management: are we in the knowledge management business*?", available at: www.ariadne.ac.uk/isue18/knowledge-mgt/ (accessed July 2006).
7. Davenport, Thomas H. and Lawrence Prusak. 1993. Blow Up The Corporate Library. International *Journal of Information Management 13, no. 6:* 405-412.
8. Davenport, E., Cronin, B. (2000), "Knowledge management: semantic drift or conceptual shift?" *Journal of Education for Library and Information Science, Vol. 41 No.4*, pp.294-306.
9. DiMattia, S., Oder, N. (1997), "Knowledge management: hope, hype or harbinger?" *Library Journal, Vol. 122* No.15, pp.33-5.
10. DTI Competitiveness White Paper 1998. Building the knowledge-driven economy Retrieved from www.dti.gov.uk/comp/competitive/main.htm
11. ESRC. (2005) Knowledge economy in the UK retrieved from *http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/facts/UK/index4.aspx?ComponentId=6978&SourcePageId=14971#0*
12. OECD (1996). The Knowledge-based Economy retrieved from *http://www.oecd.org/dataoecd/51/8/1913021.pdf*
13. Gorman, G.E. (2004), "The uniqueness of knowledge management – or the Emperor's new clothes?" *Library Management and Information Services*, Vol. 19 No.1, pp.17-32.
14. Information Advisor (1997) *The Steps to Take for Conducting Information Audit*. In: Information Advisor, 9, no 9, September
15. Klobas, J.E. (1997), "Information services for new millennium organizations: librarians and knowledge management", in Raitt, D. (Eds), Libraries for the New Millennium: Implications for Managers, Library Association Publishing, London, pp.39-64.
16. Koenig, M.E.D. (1997), "Intellectual capital and how to leverage it", The Bottom Line: Managing Library Finances, Vol. 10 No.3, pp.112-8.

17. Kok, W. et al. (2004) *Facing The Challenge. The Lisbon Strategy for Growth and Employment. Report from the High level Group* (Brussels: European Commission). Also available at *http://europa.eu.int/comm/lisbon_strategy/index_en.html*
18. Leadbeater, Charles & Demos. (1999) New Measures for the New Economy Report presented at International Symposium on Measuring and Reporting Intellectual Capital: Experience*, Issues and Prospects, Amsterdam, 9-11 June 1999.*
19. Marouf, L. (2004), "Role and contribution of corporate information centers toward KM initiatives: an analysis of manager's perceptions", *Journal of Information & Knowledge Management, Vol. 3 No.1*, pp.9-25.
20. Middleton, M. (1999), "From information management to knowledge management: some perspectives on development", *El Professional de la Información*, (English language version (written prior to translation into Spanish) of "*De la gestión de la información a la gestión del conocimiento*", Vol. 8 No.5, pp.10-17.
21. NLB Library 2010 *Report.* Release Date: 27 July 2005 Retrieved from *http://www.nlb.gov.sg/CPMS.portal?_nfpb=true&_pageLabel=Library2010.*
22. Orna, Elizabeth (1999) *Practical Information Policies*, 2nd edition. Hampton, VT: Gower Publishing Limited
23. Reardon, Denis F. 1998. *Knowledge management: the discipline for information and library science professionals* 64th IFLA General Conference August 16 - August 21, 1998.
24. Singapore Ministry of Information and The Arts (1994) Library 2000: Investing in a Learning Nation. Singapore: SNP Publishers (*Report of the Library 2000 Review Committee*)
25. Southon, G., Todd, R. (2001), "Library and information professionals and knowledge management: conceptions, challenges and conflicts", *The Australian Library Journal*, Vol. 50 No.3.
26. Teleos 2006 Indian Most Admired Knowledge Enterprises – Executive Summary. Teleos © 2006 http://www.knowledgebusiness.com
27. TFPL (1999), "*Skills for knowledge management*" a briefing paper by TFPL Ltd: based on research undertaken by TFPL on behalf of the Library and Information Commission, TFPL Ltd, London.
28. Todd, R.J., Southon, G. (2001), "Educating for a knowledge management future: perceptions of library and information professionals", *The Australian Library Journal*, Vol. 50 No.4.
29. Wilson, T. (2002), "The nonsense of knowledge management", *Information Research*, Vol. 8 No.1, pp.39.
30. The World Bank, Knowledge and Resources for Development by World Bank 1998 (*www.worldbank.org* and search using the term 'knowledge')
31. World Bank report, *India and the Knowledge Economy: Leveraging Strengths and Opportunities,* was launched in Washington DC on June 28, 2005. (*http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KFDLP/0*)
32. www.worldbank.org/Kam