

**REINVENTION OF INFORMATION
PROFESSIONALS IN THE DIGITAL
ERA: THE KENYAN CONTEXT**

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Abstract

In the information society of which Kenya is an integral part, the government must respond to public information need by re-engineering information professionals, if it is to achieve and maintain its educational, social and economic development. This is because the worldwide development of information has accelerated dramatically over the past few decades due to application and use of computers to process, preserve and disseminate information specifically scientific information for national development. This paper develops a thesis that proposes that, in order to meet the immense development challenge of the country, the widespread and innovative use of knowledge and information is essential. Thus, the reinvention of information professionals in the digital era will strengthen local capacity to synthesize, adopt and translate relevant parts of global knowledge into local use. This can be done by boosting information professionals' education to empower them in the digital era. The paper further proposes that using the three pillars of: information technology (IT), economic and behavioural, can stimulate and orchestrate information professionals to be proactive in the creation, sharing and use of knowledge as a resource. The paper further recommends that the information professional in the digital era must be equipped with modern professional skills, innate skills and a wide range of IT skills in order to survive in a dynamic digital environment. -

Key word: knowledge; Digital era; Information professionals . Kenya, Economic development.

Introduction

The future belongs to countries whose people make the most productive use of information knowledge and technology. This is so because these are in the contemporary world the key factor for socio-economic and sustainable development success. Thus, knowledge has become the most important economic resource hence knowledge economy. Knowledge and information have become the engine that drive the economy in the 21st century all over the world and Kenya cannot afford to be left behind. Information professionals know how crucial it is, to effectively communicate and disseminate information.

This paper develops a thesis that proposes that in order to meet the immense sustainable development challenge facing Kenya as a developing country, the widespread and innovative use of information and knowledge is essential. This calls for change to the traditional information professionals in information centers in East Africa with special reference to Kenya. Previously, the East African school of librarianship at Makerere University in Uganda was the only institution of higher learning offering education in information sciences to information scientists who provide service in academic, special, public and school libraries, archivists, record managers, IT professionals and knowledge managers in East Africa. But this is no longer the case for many institutions of higher learning have since realized and acknowledge information and knowledge as a full profession as such they have established a number of training schools in this profession such as: school of information science at Moi University, Kenyatta University, Kisumu University, Chuka University, University of Kabanga, Rongos University College, Karatina University, University of Nairobi (faculty of computing and information), Technical University of Kenya, the University of Dar es Salaam, Tanzania among others.

With the advance in evolving technology in the digital age, it is necessary that reinvention of information professionals in Kenya is of paramount importance. In the digital environment information services are driven by the needs of the society since the user population is influenced by the web technologies. The majority of the Kenyan population are the youth who are also the majority of the USCI' population in information centers and other information related environments.

As a result the traditional information professionals are faced with new emerging generation of younger population which must be equipped with high technological skills to create, access, disseminate and share information and knowledge within the organization and community. Web based technologies like: Facebook, Twitter, Blog, Wikis, Podcast, Vodcast, Skype, YouTube, web conferencing among others, do allow online users to interact and share information, knowledge and intellectual records through collaboration and communication. Effective utilization of these new technologies requires well trained new era information professionals.

Methodology

This paper analyses and draws on a review of related contemporary literature and the author's long working experience in the information profession. It urges Kenyan information professionals to rethink their critical roles in terms of evolving technologies which are rapidly changing and as a result influencing service and training in various areas of IT information delivery and knowledge management. The information professional should therefore reinvent if they are to underpin accelerated rates of educational, social, economic and political processes of a middle level country like Kenya.

Literature Review

The term information professional is preferable to the term information manager because it connotes a broader meaning describing professionals involved in all segments of the information transfer chain—from generation to use (Bearman, 1984)

The concept of information and knowledge

Scholars have defined information as a set of data and figures that have been processed in such a way that are meaningful. According to (Mchombu, 2002), when information is applied to something or is globally applied it is said to have become knowledge. The definition serves a useful knowledge from the point of view of formal education. For example, educators require their students to master a fixed body of knowledge in order to pass an examination.

According to the mathematical theory of information in 1949, information in a message is the amount of information in a message which is related to the probability ratio of the message. That is, the more it reduces probability, the more information it has. This theory believes that the prior knowledge of the recipient may reduce the amount of information in a message. This theory views information from a technical angle in the context of communication engineering and is concerned with symbol communicating the information (Prather, 1991). Thus, knowledge approach to information records knowledge that is built on the basis of perception of structure of the world. Brooks (1981) states that knowledge is a sum of many bits of information, when more information is added to the existing knowledge structure it gets modified. He expresses this in the following equation:

$K(+) + AI = K(+A)$, which means when information AI is added to the existing body of knowledge (K) it results in modified knowledge $K(+A)$

Information as an indispensable resource:

In view of the multi-faceted change in interdisciplinary fields such as education, science and technology, spread of literacy, globalization and other areas of socio-economic development and the impact of IT in the present Kenyan society. In the

information society and/or knowledge society, it can be said that information is an indispensable resource just like land; water or capital for socio-economic development. The supply of correct, timely and precise information helps policymakers in making maximum use of the available resource in all aspects of national development. Information centre in Kenya in the 21st century

Considering the paradigm shift occurring in leading academic libraries and other information centres both in Kenya as well as globally. Kenya's aspiration in terms of its vision 2030 flagship projects will exploit information and knowledge enabled by technology in order to improve its socio-economic development. Hence, this calls for paradigm shift from the traditional information professional, to the new era information professional to provide the vital link that would accelerate the Kenyan economic development in the 21st century.

Information professionals in the digital era

In the Digital Age, information professionals can no longer be simply information providers or the keeper of knowledge. The emergence of the knowledge economy, partly attributed to globalization and technological advances, has ushered in a wide ranging debate about the demand for higher level of competence, more highly educated and skilled worker in all profession (Berman et al., 1997; Kiley, 1999; Machin et al., 1996). This is especially in technological occupations as studies have found link between the introduction of ICTs and the demand for new skills or skills upgrading (Maakor, 2009; Baldwin et al., 1997; Berman et al., 1997; Machin et al., 1996; Osterman, 1995). The modern professional is a both a lifelong and learning professional (Kaulya, 2007; Marterka, 2004; Walli, 2005).

The most significant example of how ITs have changed the role of information professional has been the development of wired information services such as: internet virtual reference service (via web-based chat, instant messaging, text messaging and e-mail), online or electronic services, online information literacy, artificial intelligence, and digital information systems. With this development in library and information center are in a position to offer information services around the clock or 24/7 service as well as access information even from remote sources (Singh 2007). The new digital environment is quite dynamic, however information professionals are finding their way. This is because the foundation of the profession, the skill and role, which are still relevant to the digital environment, will ensure information professional survival (Creth, 1996). These skills include: cataloguing, classification, indexing, enquiry work and information management. The vast amount of information available in a networked environment suggests that there is more than

ever before a role for trained intermediaries with search skills, abilities to analyze and evaluate resources and match needs with source (Lancaster, 1997)

Hastings (1996) emphasizes on the importance of information professional possession of particular personal qualities (which are innate) rather than specific technical expertise (which can be learned). This encourages information professionals not feel threatened by computers and technical development but should move forward with the new technology and take a pivotal role within organization.

Hashim and Mokhtar (2012) present current trend likely to have an impact in shaping information professionals in the digital era as :

- A vision towards information and knowledge rich society
- Library function in information and knowledge-based society
- Knowledge-based economy - information and knowledge as drivers to boost the economy
- information management recognized as an important discipline
- Information recognized as commodity (information brokerage, information entrepreneurship, fee-based information)
- Information recognized as a power/ strength/ weapon
- Information strongly link to decision-making, strategic management, competitive advantage, innovation, research and development (R&D).

Apart from professional skill mentioned information professionals of the future must be equipped with a wide range of personal and transferable skill in order to manage the dynamic working environment (I Hashim and Mokhtar, 2012; Hastings, 1996). New era information professional should be able to manage the Digital Information system as this encompasses the overall competence (knowledge, know-how, skills and attitude) necessary to create, store, analyze, organize, retrieve and disseminate digital information (text, images, sounds) in digital form (Hastings, 1996). At the same time, the new era information professional must collaborate and work with other members of the information management team to design and evaluate system for information access that meet user needs. Their familiarity with the information marketplace can be key contributors to the development, marketing and use of information products.

New era librarian as knowledge-based practitioner who use research as a foundation for their own professional practice and who support the conduct of research through their professional association (I Hashim and Mokhtar, 2012). Further, Hashim and Mokhtar (2012) add that to fulfil their informational role, they need both professional (knowledge of information resources, information access, technology, management, research etc.) and personal competencies (attitudes and values, good communication skill, long life learning, team player etc.). Therefore, new era

informational should focus on both professional competencies and personal competence, in order to fulfil their informational role in the digital era.

The role of Information professionals in knowledge management

Until recently, information specialist played the role of gatekeeper handling organization of document and formal knowledge. Librarians' primary concerns were the management of book collections and journals (Cronin, 1998). The question is: are informational professionals ready to be knowledge managers?

Knowledge management (KM) is a collection of processes that govern the creation, dissemination, and utilization of knowledge in an organization (Newman, 1991). It is also the process of capturing organizational collective expertise wherever it resides in database on paper, or people's head and distributing it to wherever it can help produce the biggest payoff (Dubey, 2003). Knowledge management is a new field drawing on numerous disciplines, including library and information science. Knowledge management is not a reserve of anyone group in a library, or by any one profession. In most organization, the key professionals involved in knowledge management activities are human resource manager, process & product developers, and information technologists (Taylor, 2001). If information professionals want to be key player in the rising knowledge management occurrence, they need to understand the multiple perspectives of the other players. Knowledge management requires a holistic and multidisciplinary approach to management process and an understanding of the scope of knowledge work. Knowledge management should be the development of good management practice prudently and purposefully applied.

Information professional can be given the task to collect, organise and manage information within the organization. Managing knowledge (formal and informal) within the organization is a challenging task. Informal knowledge management is more complex and different from that of formal or explicit knowledge. It requires dealing with human element and closely related to human resource management, appraisal system, organisation's culture and business practice. As organisations become aware of the value of keeping knowledge within the organization, they will require knowledge managers to manage knowledge within the organization and ensure knowledge flow. Thus, knowledge management goes beyond information management to include capturing skill, experience and other types of informal knowledge.

Knowledge Management in information centre should be focused on efficient research and development of knowledge, making of knowledge bases, exchange and sharing of knowledge between library staff and users, training of information professionals speeding the process of knowledge and realizing of its sharing. Hence, it is very important to focus on Knowledge Management Terms in Libraries

and information centres by which the timely information service can be provided to the online user society. On the role of information professionals in knowledge management a few studies provide an insight into the new emerging field.

A study carried out by Hawamdeh and Foo (2001) involving 75 participants from both government and private sector that were undergoing the Master of Science in information Studies programme in Nanyang technical university in Malaysia. They were to respond to two open-ended questions that would allow participants to express and incorporate their ideas and knowledge. The question sought to find out the role of information professional in knowledge organizations and what vital skills they would require. The findings revealed that information professionals hold diverse titles in organizations such as: project manager, database manager, customer relations manager, information specialist, information manager or chief information officer among others. These are the people responsible for managing the creation, capture,

synthesis, sharing and application of collective intelligence. The participants highlighted the ten most vital skills as: information seeking skills (100%), social and communication skill (96%), managerial skill (91%), IT skills (89%), friendly (87%), creative (79%), analytical skills (79%), proactive (76%), responsive (72%), diverse subject background (60%), among others. The findings emphasize on the need for both hard and soft skills.

Similarly, Elson (2001) in proposing competencies for a chief knowledge officer (CKO) provides 6 main categories as: tool and technology skill, communication, leadership and management, personal knowledge, cognitive capability, strategic thinking and personal behaviour. In his view, the skills and competencies that enable a CKO to play their role in an organization are equally relevant to information professionals in information management. These skills and competencies can provide insight into what should be included in an information professional's curriculum with emphasis on areas they are found to be deficient. This will ensure they are competent

in their expanded role of knowledge workers.

In 1990, Prusak and Matarazzo, conducted a study to determine the value of LIS professionals in a corporate sector in the growth and development of company.

They found the role of library manager as: the online search performed by librarian was the most valuable service offered. They also found that most companies surveyed had no methods or processes in place to evaluate the effectiveness, efficiency or productivity of what librarians do. While everyone appeared to 'like' librarians and libraries, few firms thought of them as 'mission critical'. They concluded that with no method to evaluate library contributions to productivity and profitability the stature of librarians within the firm was likely to sink further in terms of compensation, status, value and impact.

Another study conducted by Fleck and Bawden (1998) in the professional field of Law and Medicine revealed the findings of study as: The working librarians in their associated

from a variety of academic and professional background and not a product of any particular profession. However information professionals as trained managers of information, are better placed in managing knowledge professionally as it is both delicate and sensitive. In the new era, the role of the information professional is being recognized and it's hoped that this will improve their public image, help them reinvent to play their pivotal role in organization, and their countries in information and knowledge management. This will in turn impact and strengthen local capacity to synthesize, adopt and translate relevant parts of global knowledge into local use for the development of the country.

The role of LI schools

There has been a lot of criticism concerning professional training in various professions in Universities. The major concern being that, most of training is outdated and does not meet the need of changing times. Most academic institutions are considering pedagogical approaches and possibilities of modernizing what is taught and how it's taught. Assessments of professional education in various professions are on-going to keep up with the highly dynamic environment due to changing technologies. There are various studies examining different professionals such as law, medicine, the clergy among others (Cooke, 2010; Benner, 2009 etc.)

institutions were highly regarded by their clients but they fulfilled very much a service oriented and reactive function, serving clients by responding to their needs rather than anything more dynamic and proactive. Their clients perceived the librarians as efficient, intelligent, helpful and possessing specialized knowledge. They were also seen as un-ambitious people whose satisfaction was in helping others to their ends. They give the impression of the traditional librarian who has to reinvent in order to survive in the digital era.

Today, the top executives of corporate organizations well recognize the value of managing knowledge for their effective and timely consumption. For this they have shown their interest to appoint Chief Knowledge Officer (CKO) who will help the enterprise as a whole. The responsibility of CKO is a kind of extension of library affairs. Therefore, this is the right time that LIS professionals re-think their ethics, responsibilities, participations, services, status, and the more important the need of their institutions so that, they may play their role as models in the sustainable growth and development of their institutions and in turn the country.

A pilot study conducted by Earl (2002) on the issue of who was responsible for knowledge management practice in the firms, the study found that the executive management team was responsible in 68% of the firms information technology unit in 7%, human resources unit in 6%, 6% of the respondents didn't know, and the remaining 12% chose knowledge management unit, library/documentation centre or multiple respondents. This result reveals that information professionals are yet to have direct responsibility for knowledge management practice in an organization. However the contention is that information professionals do have a role to play. One of the key roles being played by information professionals in organizations include the design of the information architecture development of taxonomy, and content management. To appropriately play these roles, information professionals have to be adequately equipped with IT skills.

Ijiferuke (2003) on a study of the role of information professionals in knowledge management sought to find out organizational skills and competencies required in a KM program. The study identified the following skills: communication skills (96.9%), Leadership (78.1%), facilitation (75%), networking (68.8%), consensus building skills (75%), persuasive skill (65.6%), Team building (100%), coaching skill (65.6%) and mentoring skill. These findings concur with earlier findings already discussed, that information professionals require more than professional skills.

Tullock (2002) opines that, there are questions on the relevance of formalized KM instruction based on a survey which showed that, the successful KM practitioner came

In the digital era there are many factors affecting the nature of higher education. Traditional approaches may be inappropriate as a result of globalization, new technologies, multi-culturalism, financial and environmental constraints. Reexamination of the information professional training is inevitable if the training of the next generation of information professionals will be relevant. Today LIS schools have evolved to LIS schools. LIS schools prepare a wide range of information professionals including information architect, data analyst, database administrator, web developer, ontologist, database administrator, web developer, social media strategist, data curator, chief information officer, in addition to traditional professions such as librarian, archival museum curator, etc. This is in response to preparing information professionals for diverse and dynamic careers in the digital era. Redesigning education for information professionals will demand an enormous effort. We need to rethink about, the student qualification to universities, the role and type of faculty needed, curricular needs, and the type of pedagogy and delivery of these new programs (Machionini and Moran, 2012). In a competitive global economy, developing and transition economies

like Kenya risk being marginalized if their education system does not adequately equip learners with the appropriate skills.

Institutions of higher learning have a key role to play in ensuring they successfully fulfil their educational, research and information function in the 21st century. They have to adapt to rapid, changing education and training needs (World Bank, 2002a).

Library training has come a long way. Marchanini and Moran (2012) provides a progression of the training of information professionals from the 19th century and early 20th century when librarianship was beginning to emerge as a profession, it was based on apprenticeship model where most of the training was on the job or one had to undergo specialized programs located in large public libraries. It then moved from public libraries to universities after recommendations by the Williams report of 1923. Since then a number of reports have been commissioned to make recommendations for reform. Currently, Information Professional 2050 is designed to provide the groundwork for another such re-examination (Marchanini and Moran, 2012). Kenya had only one library school in the 1980's but has progressed to slightly over ten by 2015. This is indicative of a growing recognition of the profession and the need to

nurture it.

The original training of information professionals focused on the library environment. Over the years, the focus has been expanding to include archives, records management, media and publishing, knowledge management, Information technology etc. Information specialists are being prepared for so many diverse careers and it is becoming difficult to predict the future. The question that arises: how does the library

school or faculty prepare in a dynamic environment to meet the labor market that is demanding, constantly changing, challenging with diversified needs. The faculty or Library school does not have much choice but to take account of the change and developments while developing the syllabus and the curriculum. Curriculum should be geared toward preparing students to become new era librarians and information professionals. Students in the field of library and information science can Major in Library and Information Management and integrate it with various IT programs. This will strengthen their knowledge in ICT besides having a solid background in the

In Kenya, there is evidence that Library schools are responding proactively to rapid changes in the digital environment. Most library and information science schools now offer courses on knowledge management for undergraduate Master's Degree in knowledge management, informatics and IT. According to Ila Him and Motkar (2012) the new breed of information professionals include: Chief information officer (CIO), chief knowledge officer (CKO), information consultants and analysts. Our library schools should endeavour to train in response to emerging needs that may have not been foreseen in the past. It is therefore, important to constantly revise curriculum for information professionals, to include additional information fields (Singh, 2007;

Omekwu 2004; Materek, 2004).

Conclusion

Information professionals play a pivotal role as agents of change in the knowledge economy. They have been faced with a lot of challenges posed by trends in evolving technologies. However, enhanced personal skills and new and focused training of information professionals, informed by a proactive curriculum will ensure their survival. They should also strive to be relevant in the field of knowledge management. Information professionals in Kenya, will require continuous reinvention by adapting to their changing role in the evolving knowledge economy. This will ensure they become catalysts in meeting immense sustainable development challenges facing Kenya as a middle income country.

Recommendations

The dynamic nature of the current information environment calls for new knowledge, skills and competencies on the part of information professionals. They also need to be well grounded in ICT related competencies. Library and Information Science (US)

Schools in developing countries including Kenya must be proactive in ensuring regular review of the curriculum in tandem with the digital environment. Training can be complemented by ensuring exposure via student exchange programs and attendance of international conferences by both students and faculty. It is important to provide regular refresher training and workshops to both faculty and practicing professionals, in order to keep abreast with demands of the profession especially in ICT related skills and competencies. 'Soft skill' should not be underestimated as they are becoming essential competencies for the new era professions. Professional Association should create awareness in both public and private organizations of the potential role of information professionals in both information and knowledge management. Attention should also be given to knowledge management and the digital technology. The fact that information professionals are dealing with key information/knowledge, ethical standards need to be upheld at all times.

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