

Role of Information Management in the Preservation of Indigenous Knowledge

Mumtaz A. Anwar^{*}

"Each time an elder dies it is as if a library had burned down."

Amadou Hampate Ba

Abstract

Discusses characteristics and significance of indigenous knowledge; reviews the process of capturing and preserving IK; analyses the existing information management literature on IK; examines the role of information management in IK in light of reported experience, especially in Africa and Australia; proposes that information management discipline review its curricula to accommodate areas needed, and work for the development of tools and techniques for IK management.

Keywords: Indigenous knowledge; Information management; Capturing; Preservation; Indigenous knowledge centers.

What is Indigenous Knowledge?

The expressions 'traditional,' 'local' and 'indigenous' knowledge are used in the literature inter-changeably. However, the use of 'indigenous knowledge' (IK) seems to have become more popular than others. IK is also being used erroneously for some categories of information produced indigenously. Development of databases of locally produced literature, creation of institutional repositories, and such other activities focusing on the management of certain categories of national information output as reported by Sukula (2006), TJiek (2006), and some other writers should not come within the purview of IK. Indigenous knowledge has been defined as "the local knowledge - knowledge that is

^{*} HEC Foreign Professor, Department of Library and Information Science, University of the Punjab, Lahore. Email: gombak_98@yahoo.com

unique to a given culture or society. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision-making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities" (Warren, 1991, as cited in World Bank, 1998). It has also been described by Flavier et al (1995) as "the information base for a society, which facilitates communication and decision-making. Indigenous information systems are dynamic, and are continually influenced by internal creativity and experimentation as well as by contact with external systems" (p. 479).

Special Features of Indigenous Knowledge

Several authors have identified some special features of IK. These have been summarized by Mearns, Du Toit and Mukuka (2006) as follows:

1. IK is **local, holistic, and integrative** because it is rooted in a particular community and its experiences are situated within broader cultural traditions of the people living in that place.
2. IK is essentially **functional** and is geared to practical response and performance.
3. IK is **experiential rather than theoretical** and is reinforced through continuous experience, trial and error.
4. IK is **learned through repetition** which aids in its retention and reinforcement.
5. IK is **constantly changing** by way of being produced and reproduced, discovered and lost.
6. IK is characteristically **shared** to a greater degree than other forms of knowledge, although its distribution is socially differentiated, based on gender and age.
7. The **distribution** of IK is always fragmented. It does not exist in its totality either in one place or one individual.
8. IK is **tacit** and can not easily be codified.
9. IK is **transmitted orally**, or through imitation and demonstration and the process of codification may lead to the loss of some of its properties.

Importance of Indigenous Knowledge

Agricultural or desert-based societies slowly created communities that were mostly self-contained and based on self-help.

Their approach to problem-solving was through cumulated individual or communal experience and knowledge derived from trial and error. This aggregated know-how took the shape of crudely validated knowledge which improved and increased in time but remained mostly unrecorded. Modern societies create and use complex and specialized knowledge and are dependent on the continuous efforts of research scholars and the services of specialists. However, large pockets of agricultural or desert-based communities have concurrently existed with the urban and industrial societies, sometimes located not far from them.

Agricultural or desert-based communities, mostly in developing countries, even in the present information age, have remained practically cut off from access to the specialized knowledge and the services of specialists. Thus they have been, out of mere necessity and for the sake of their survival, depending on and making use of their traditional unrecorded knowledge. It has been estimated that about 80 percent of the world's population still relies on IK for either medicine or food (Nakata, 2002). Therefore, in this information age, preservation of indigenous knowledge and culture has become important because of its compatibility with the preservation of local environment and sustained development of concerned communities. In light of the global spread of recorded information dominated and facilitated by information and communication technologies IK is being seriously threatened by loss and well-conceived, coordinated, and continuous efforts must be made to save it.

IK is now being considered very important for the socio-economic development processes. The current world-wide interest in IK is overwhelmingly driven by research into sustainable development practices in developing countries. The scientific community is also worried about the loss of bio-diversity of species and ecosystems, and the future implications of that for the whole planet (Sen, 2005). During 2004, IFLA issued a 'Draft Statement on Indigenous Knowledge' acknowledging the disruption of IK throughout history, the need for its preservation and transmission to future generations, and its protection from further erosion (IFLA, 2004). Among other things, IFLA "recommends that libraries and archives work in cooperation with Indigenous communities to:

1. Devise and implement programs to collect, preserve and disseminate resources on Indigenous knowledge traditions;

2. Make available and promote information resources which support research and learning about Indigenous knowledge systems. (p. 177)

The World Bank started publishing *IK Notes*, an occasional publication, in October 1998, each Note consisting of a single paper dealing with a specific topic related to IK. A survey of 213 of its readers, conducted in 2006, found that the participants rated, among other statements, 'Indigenous knowledge is an important development resource' with a mean score of 3.4, 'The World Bank should advise its clients to build on indigenous knowledge in development' with a mean score of 3.2, and 'Without understanding indigenous knowledge, new practices cannot be adapted to local conditions' with a mean score of 3.1, all based on a scale of 1 strongly disagree to 4 strongly agree (Rueger, 2006).

Capturing and Preserving Indigenous Knowledge

In addition to research, attention has now been focused on preserving IK. It is being feared that a lot of it is being lost due to rapid urbanization and continuous attrition in the older population. Modern science has been gaining tremendously from IK. Its preservation received a boost during the 1970s through the activities of WHO and FAO in the area of health and agriculture. Beginning with the UN Conference on Environment and Development held in Rio de Janeiro in June 1992 which emphasized the recording of IK and the IDRC international conference on 'Indigenous Knowledge and Sustainable Development' held in Silang, Philippines, in September 1992, many conferences and workshops have been held which have focused on the significance of IK in local development (World Bank, 1998) and laid stress on its recording and preservation. A lot of work is now being done to identify, record, and preserve IK.

As a result of these efforts, a good amount of research and practical work has been conducted in several related areas (Anwar, 2005; Anwar, 2006). According to Pidatala (2001), a group of Eritreans launched a project in 1982 "to identify and understand the IK of the Eritrean peoples in a socio-economic context" (p. 1). IK is predominantly **tacit** and embedded in practices and experiences and exchanged within the community through oral communication and demonstration. Recording and disseminating it across communities is not easy. The

process of exchanging IK involves the following six steps (World Bank, 1998, pp. 8-10):

1. Recognition and identification which may not be easy in certain situations and might involve social and technical analyses;
2. Validation in terms of its relevance, reliability, functionality, effectiveness and transferability;
3. Recording and documenting in view of the intended use of information using audio-visual technology, taped narration, drawings, or other forms of codifiable information;
4. Storage which will involve categorization, indexing, relating it to other information, making it accessible and conserving, preserving and maintaining it in the form of retrievable repositories for later use;
5. Transferring means making it available to the potential users for testing in the new environment; and
6. Dissemination to the wider community through appropriate channels of communication.

The exchange of IK is the ideal outcome of a successful transfer. What role has the Information Management (IM) profession played so far in the capturing, preservation, organization, and use of IK? Information Management in this paper has been used instead of Library and Information Science (Anwar, 2009).

Current Literature on Indigenous Knowledge

There is a good amount of literature on IK in several 'development' related disciplines, e.g., agriculture, economics, sociology, education, health sciences, etc. and it has been growing fast. Ocholla and Onyancha (2005) identified and presented bibliometric analysis of 1,808 documents dealing with IK published during the period 1990-2004 retrieved from eight databases. This study does not cover any IM databases. The authors list 16 subject categories covered by this literature including 'Information Science (Knowledge management, Access to information)', but do not give the number of citations for each subject. While recommending the creation of IK databases and integration of IK within knowledge management, they consider this area very weak.

What is the status of IK literature in the IM discipline? Three related databases, *Library and Information Science Abstracts*, *Library*

Literature, and Library, Information Science and Technology Abstracts should reveal the quantity of literature contributed by IM. A search of these three databases resulted in 90 unique citations produced from 1990 to 2007, the last year not fully covered. Six of these citations are for book reviews while four deal with locally produced literature or unpublished research, e.g. Sukula (2006) and Tjiek (2006) which is 'indigenous information' rather than IK. Thus we are left with 80 publications some of which are authored by writers of other disciplines, e.g., law. The rate of production comes to an annual average of 4.4 publications as compared to 120.5 in other disciplines reported by Ocholla and Onyancha (2005). These 80 publications include some publications of one or two pages each which appear to be news reports. Therefore, it can safely be said that this contribution is very limited as far as the quantity is concerned.

Although the worldwide emphasis on IK started during the 1970s, the IM discipline was very slow to respond to it as an area of professional concern. The first IM publication related to IK as indicated by the three databases mentioned above appeared in 1990. The first 12 years (1990 to 2001) generated only 14 publications, with four years not contributing anything. The next five years, 2002 to 2006, produced 64 publications, with a yearly average of 12.8. The year 2005 alone produced 23 publications. It seems that IK started attracting the attention of IM professionals only from 2002 onwards.

The major topics covered include IK Management (13), Intellectual Property Rights (11), IK Preservation / Protection / Exploitation (10), and ICT Applications (6). Eighty-four personal authors produced 73 publications, with 76 publishing only one item each. Seven individuals contributed to two publications each and only one writer (Martin Nakata) produced three items. Therefore, no core authors on IK have emerged thus far in the Information Management discipline. This literature is scattered in 31 journals with *Australian Academic and Research Libraries* publishing 15 and *South African Journal of Library and Information Science* and *Information Development* contributing five each. Another 11 journals produced from 4 to 2 items each whereas 17 contributed one item each. Eighteen publications relate to Australia alone, 21 to Africa, 11 to developing countries, and only three to two specific Asian countries. The remaining 27 items are of general nature.

The literature analyzed above does not display a strong interest of Information Management in IK and places very little emphasis on its role, present or future, in this vital area.

Role of IM in Indigenous Knowledge

The Information Management profession, because of its focus on organizing information and providing mediation between the organized information and its user, is in a unique position to develop effective models of good practice in capturing, organizing and accessing IK. What role should the Information Management profession perform in this area? We need to understand this role and streamline it so that libraries become active partners in this preservation process. There are a number of very successful projects that can serve as models for further work, e.g., Kargbo (2005), Kok (2005), and Ngulube (2003). One of the examples developed out of a successful but expensive battle that India fought to get a U.S. patent for the use of turmeric to heal wounds revoked. As a consequence, India created a library that contains information on 36,000 formulations of turmeric used in Ayurvedic medicine. This model has now been adopted by the World Intellectual Property Organization (Chikonzo, 2006). The database dealing with women related IK developed at the Elhafaed Library of Ahfad University in Sudan is another good example to adapt (Sen & Khashmelmous, 2006).

The available published literature on IK produced by IM and other disciplines suggests some specific areas of concern and points to a role that libraries should adopt to become partners in the preservation, organization, and access to this extremely important knowledge base. These areas are listed below:

1. Becoming part of research teams that aim to identify and record IK. Such teams when embarking upon IK information gathering projects will require:
 - a. Identification of resource persons who will provide IK;
 - b. Recording such information;
 - c. Repackaging it into usable format;
 - d. Disseminating it to potential users; and
 - e. Preserving and continuously updating this acquired information.

Some of the methods used by Oral Historians, during the late 1940s and early 1950s, in identifying individuals who possessed primary historical evidence, interviewing them, and preserving the recorded evidence for future use of researchers, can be adapted in the IK area.

2. Developing taxonomies based on the recorded IK in various sectors. The Information Management profession needs to revise its curricula to cover skills needed for IK Management. There is a need to design special courses dealing with the development of taxonomies and other special tools for IK management.
3. Creating databases of indigenous knowledge in a variety of areas. TAXIS, a taxonomic database of medicinal plants of Nigeria (Adelowo & Agbonlahor, 2003) and the one on turmeric (Chikonzo, 2006) can be used as examples.
4. Creating Indigenous Knowledge collections, either as independent centers or as special collections in research libraries, in order to develop, maintain, and provide access to the recorded IK. Indigenous Knowledge Centers established in Australia focusing on the needs of the aborigine population can serve as models (Gumbula, 2005; Pilot, 2005; Taylor, 2003).

Concluding Remarks

The Information Management profession, through its long experience in preserving and organizing human knowledge and serving as an effective mediator between the information and its user, is in a unique position to become an active partner in the whole process of IK management from identification to its use. However, it must be emphasized that IK resources require differential treatment in contrast with the normal information resources. The profession will have to develop new tools and techniques in order to meet the requirements of IK management. In addition, it will have to, through its organized bodies and educational establishments, become much more active in concert with agencies involved in the preservation and use of IK in sustainable development.

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