Application of Competitive Intelligence in Indigenous Knowledge: The Role of the Library Professionals in Nigeria

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ABSTRACT

This study examines how competitive intelligence can be strategically deployed to ensure better and effective access to indigenous knowledge. The knowledge gap hypothesis provides the theoretical framework for this study. The aim is primarily to evaluate the role of the library professionals in brokering a situation where the acquisition, creation, organization accessibility and dissemination of indigenous knowledge have competitive advantage over the western knowledge which is presently favoured. The study reveals that indigenous knowledge is often the basis for decision making at the local level in all areas of human endeavour including agriculture, health care, education, food preparation, natural resource management, psycho social care and other activities that are germane to rural communities. Therefore, information professionals must work with indigenous communities to develop unique solutions that meet local needs. Also, Library professionals must ensure that adequate policies are put in place for local communities to be adequately recompensed as prior owners of their knowledge.
Keywords: *Competitive Intelligence, Indigenous Knowledge, Knowledge Management, Sustainable Development, Culture.*

INTRODUCTION

Competitive intelligence, also referred to as corporate or business intelligence, is an emerging discipline, which has only become increasingly important in the business arena since the early 1980s (Fourie, 1999). It is now gaining ground in the Library and Information Science (LIS) sector as a means of providing proactive service that will give the LIS sector comparative advantage over its competitors. Although the practical origins of competitive intelligence date back to many decades, yet its intellectual origins can be attributed to Harvard Professor, Michael Porter, when in 1980 he used the technique of competitive intelligence to analyse industries and competitors (McGonagle and Vella, 1996). Thus the gathering of competitive intelligence began in many different disciplines including strategic planning, library science, sales prospecting, statistics, accounting and military intelligence.

Although there are many definitions of competitive intelligence, yet they all center around the same critical aspects, namely systematic selection, collection, processing, interpretation, analysis and distribution of highly specific and timely information concerning industry rivals and the external business environment, coming from a myriad of publicly held sources, which is then used to make calculated strategic business decisions, often based on predictions about the competitor's position, performance, capabilities and intentions

(Fuld, 1985, 1995; Kahaner, 1996; Johnson, 1998). Thus it is the intention of this review to illustrate that competitive intelligence can successfully be applied as a tool in providing access to indigenous knowledge and in doing so the role of the library professional is emphasized.

Indigenous Knowledge and its Role in Society

The ever increasing global recognition of indigenous knowledge as distinct, valuable but separate from the western knowledge raises a range of issues that pose challenges for the library and information services (LIS) sector, especially the management of these indigenous resources. Libraries are increasingly becoming aware that managing the indigenous resources, particularly the selection, collection, creation, storage, preservation and dissemination of these resources require culturally appropriate management mechanisms. This is more so because the handling and management methods of these resources are different from those employed by the Western system of knowledge management. This difference and what is often thought as an incompatibility have been discussed at length by educationists, Librarians, anthropologists, philosophers and theorists alike (Cobern and Loving, 2001). Indigenous knowledge is often used interchangeably with traditional knowledge and according to Warren (1991), indigenous knowledge is local knowledge that is unique to a given culture or society. It is different from the international knowledge system that is generated by Universities, research institutions and private organizations. It is often the basis for decision making at the local level in all areas of human endeavour including agriculture, health care, education, food preparation, natural resource management, psycho social care and other activities that are germane to rural communities.

Ramasingbe (2008) defines indigenous knowledge as a corpus of knowledge belonging to a particular geographical area. Grenier (1998) observes that indigenous knowledge is a unique traditional and local knowledge existing within and developed around specific conditions of men and women indigenous to a particular geographic area. Indigenous knowledge consist of several parts ranging from culture, religion, mythologies, governance, economy to taboos, arts and crafts and poetry. According to Boven and Morohashi (2002), indigenous or local knowledge refers to a complete body of knowledge, know-how and practices maintained and developed by peoples, primarily in rural communities, who have extended histories of interaction with the natural environment. These set of understandings, interpretations and meanings are part of a cultural complex that includes language, naming and classification systems, practices for using resources, ritual, spirituality and worldview.

It provides the basis for local level decision making about many fundamental aspects of day to day life. For example, agriculture and animal husbandry, fishing, hunting, gathering, food production, water, health, and adaptation to environmental or social change. Indigenous knowledge as opposed to formal knowledge is handed down orally, from generation to generation, and is therefore rarely documented. Given the nature, location and ownership structure of indigenous knowledge, there is a lot that libraries as development institutions can do, especially in understanding, locating, collecting, storing, preserving and disseminating these indigenous resources. Nakata and Langton (2005) notes that the Library and Information profession has so much to learn if they are to effectively meet the information

needs of indigenous people and manage indigenous knowledge in an appropriate manner. The International Federation of Library Association and Institutions (2003) stated that libraries could assist in collecting, preserving and disseminating indigenous and local traditional knowledge, as well as publicizing the value, contribution and importance of indigenous knowledge to indigenous and non – indigenous peoples. Burtis (2009) observed that library, apart from collecting, preserving and providing access to scientific materials, should also provide access to indigenous knowledge resources. Indigenous people view the world they live in as an integrated whole. Their indigenous or traditional knowledge have been transmitted through generations, from the old to the new generation. United Nations Environment Programme (UNEP), (2011) notes that several concepts have been used interchangeably to refer to indigenous knowledge. These concepts include traditional knowledge (TK), indigenous technical knowledge (ITK), local knowledge (LK), traditional environmental knowledge (TEK) and indigenous knowledge system (IKS). The United Nations Environment programme (UNEP) defines indigenous knowledge as the knowledge that an indigenous or local community accumulates over generation of living in a particular environment. This definition is all encompassing, including all forms of knowledge technologies, know-how skills, practices and beliefs and culture, which enable the community to have a stable livelihood in the environment.

Nakata and Langton (2005) notes that indigenous knowledge is owned collectively by the community and exists as folklores, stories, proverbs, songs, cultural values, norms, beliefs, rituals, local languages, health care and agricultural practices such as animal husbandry, animal breeds, development of plant species, land cultivation practices and crop propagation methods. Under the colonial rule that the indigenous people found themselves, their indigenous knowledge were suppressed, oppressed and exploited and this continued after colonialism in the neo-colonial stage. Collence (2011) observes that colonial governments in developing countries prevented and criminalized the display of traditional cultural expressions, for example language, ceremony, dance and drama, thereby leading to cultural disorientation and alienation of indigenous people from their culture. This made development to rely almost entirely on western knowledge at the expense of indigenous knowledge and libraries seem to have remained mere appendages of the former.

Most pathetic is the fact that even the colonialists developed their base by the catalytic role indigenous knowledge played in the environment they operate. Indeed, Africa has a rich body of indigenous knowledge which for many centuries has been transmitted by word of mouth in songs, proverbs, incantations, stories, folklores from generation to generation. However, in most African countries, indigenous knowledge was misinterpreted or frown upon by the colonialists who made the local people believe that indigenous knowledge was primitive, irrelevant and out of tune with the modern society. Fortunately however, the African Union through NEPAD has tried to promote the importance of indigenous knowledge by stating that culture is an integral part of development efforts of the continent. Agrawal (1995) notes that contrary to the negative publicity of indigenous knowledge, there is a growing interest in local knowledge and this has come as a result of a fundamental rethink on the part of policy makers. Okore (2009) posits that developing

countries are endowed with a wealth of indigenous knowledge but access to such knowledge is hampered by lack of an environment that permits free flow of ideas amongst members of the community. Thus libraries are to promote access to indigenous knowledge by creating an environment which permits face to face discussion and formation of networks to debate and discuss indigenous matters that are useful to members of the communities. A good example is the use of talk shows in promoting intergenerational dialogue between the old and the young on various facets of life ranging from the ecosystem, medical care, uses of various plant species and conflict resolution. Knowledge is categorized into two viz: implicit or tacit knowledge and explicit knowledge. Explicit knowledge according to Nonaka and Takeuchi (1995) is knowledge which can be expressed in formal or systematic language and can be codified in form of data, scientific formulae, manuals and so forth. Explicit knowledge is also documented knowledge, found as textbooks, journals, atlas and reports. On the other hand, implicit or tacit knowledge refers to informal knowledge held in people's heads, expressed through action based skills and not rules based. Indigenous knowledge by its nature is implicit or tacit knowledge which is passed from generation to generation through personal communication, for example, storytelling, folklores, proverbs, incantations, demonstrations and cultural rituals. The fact that this knowledge is yet to be documented makes the study of the role of Libraries in managing them very exciting.

The role of indigenous knowledge in society cannot be overemphasized. Indigenous communities apply indigenous knowledge in major areas such as agriculture, ecosystems, medicine, conflict resolution and traditional attire. With indigenous knowledge, indigenous people determine when rain will come, consequently, when to plant, various farming systems to employ that will enhance soil fertility, increase yield, harvest, weed control, plant propagation, pest management and plant protection techniques, as well as storage, preservation, processing and marketing methods. In ecosystem management, indigenous people know how to use local plants, forest products, animal behaviour for natural health care, sustainable farming systems and sustainable resource management (Jain, 2008).

Furthermore, medically, in developing countries almost 80 percent of the people especially in local communities depend on traditional medicine for their health needs, due to the inaccessibility of modern medical facilities, either because they are expensive and unaffordable or are out rightly not located in the local communities. Through indigenous knowledge, local people engage in traditional medical practices such as the use of various herbs to cure different ailments, heat therapy, quarantine, incisions, bone setting and surgery. Also, indigenous knowledge plays a major role in conflict resolution. Generally, African indigenous communities are closely bound by birth, socio-cultural ties, economic realities, religious affiliation and political associations. Consequently, they easily resolve conflict among themselves. For example, the invocation of the ancestor or progenitor of the people (alajobi) easily leads to the resolution of conflicts among siblings in the Yorubaland of Southwestern Nigeria. As well, indigenous knowledge of the traditional attire plays an important role in identifying a particular culture and a local community, tribe, and country of the indigenous people. Through the people's traditional attire, the indigenous culture is sustained.

The Knowledge Gap Hypothesis

This review is based on the knowledge gap hypothesis. This hypothesis explains that knowledge, like other forms of wealth is often differentially distributed throughout a social system. Specifically, the hypothesis predicts that as the infusion of mass media information into a social system increases, higher socioeconomic status segments tend to acquire this information faster than lower socioeconomic status population segments, so that the gap in knowledge between the two tends to increase rather than decrease. This theory aptly describes the present work. What is obvious now is that there is more acquisition, creation, organization, dissemination and accessibility to western knowledge over and above indigenous knowledge by people of higher economic status who are able to acquire modern information communication and supporting technologies. To reverse this trend and given the importance of indigenous knowledge to our lives, library professionals have the onerous task of ensuring that indigenous knowledge have competitive advantage over and above western knowledge for Nigeria's sustainable economic development.

Competitive Intelligence and Indigenous Knowledge

It is obvious that all organizations, regardless of size, require competitive intelligence in order to survive. In the business world, knowledge is power. The ways in which institutions manage the internal and external knowledge they have about themselves and their rivals, and how they convert that knowledge into responsiveness and action in terms of their strategic plan and its tactical execution, are indicative of why institutions eventually fail or succeed. Those who succeed are the ones who understand their potential customers, partners, the competitor organization's structure, culture, behaviour, capabilities and weaknesses, as well as the changing market structures, emerging technology initiatives, global economic conditions, competitive activities, customer or supplier activities, and the regulatory and political climates of the information environment (Heath, 1996).

Given the advantage that western knowledge have, especially in terms of copyright and intellectual property rights, where these rights are easily apportioned to individuals who create the knowledge, the Library professional has the onerous duty of ensuring that indigenous knowledge are adequately catered for in terms of collection, creation, cataloguing, classifying, and making these information available to users and researchers, at a fee that goes to the original owners of the indigenous knowledge who are the indigenous community. The Library professional having identified western knowledge to be a major competitor of indigenous knowledge acquisition, makes it imperative for us to clearly elucidate the role of the library professional in ensuring that indigenous knowledge has competitive advantage over the acquisition, organization and dissemination of western knowledge system.

Management of Indigenous Knowledge by the Library Professional

When determining whether or not to document or digitize the culture or history of a community, one should ask a pertinent question, whether the creation of these collections will assist in the process of strengthening the identities of the communities or whether it will simply reproduce the western conception of storing in museums and libraries, what those

in the West deem to have cultural value (Worcman, 2002). One must ensure that knowledge is being preserved for the use of the community itself and the community is being included in the process of formation, creation and diffusion of their knowledge. In this regard, libraries and information professionals play an important role in assisting the management of indigenous knowledge so that it can have competitive advantage over western knowledge. In partnership with the local communities, the Library Professionals provide valuable resources and expertise for selection, collection, organization, storage, preservation, retrieval and dissemination of indigenous information (Stevens, 2008).

Also Library Professionals have a major role in publicizing the values, contribution and importance of indigenous knowledge to both indigenous and non-indigenous peoples; raising awareness of the protection of indigenous knowledge against exploitation; involving elders and communities in the production of indigenous knowledge and teaching children to understand and appreciate the traditional knowledge. Library Professionals have a major role in encouraging the recognition of intellectual property rights of indigenous communities as pertains to copyright issues, patents, royalties to ensure the proper protection and use of indigenous knowledge and products derived from it.

Furthermore, though there is much information in different indigenous communities of the developing world, the availability of such indigenous knowledge does not mean its accessibility or use. Driving access to indigenous knowledge in these countries is clouded with numerous obstacles which include illiteracy, lack of awareness of the need for information, geographical distance between nations and poverty and underdevelopment. Therefore, Library Professionals must play a critical role in driving access to indigenous knowledge. With the availability of modern information supporting technologies and software, Library Professionals can ensure proper creation, organization, preservation, dissemination and access to indigenous knowledge.

In this regard, Library Professionals must invest in information communication technologies such as internet, computers, digital cameras, iPods, tablets, video and teleconferencing equipment that will assist in capturing indigenous knowledge from the local communities. Librarians can no longer remain passive in managing indigenous knowledge as observed by Ngulube (2002). Library Professionals have traditionally been involved in managing written or recorded and codified knowledge. However, indigenous knowledge has fundamental differences from Western knowledge, therefore the management of indigenous knowledge requires the non-indigenous information professional to reconsider not only the tools and processes required to make indigenous knowledge available and accessible, but also the entire way of thinking about knowledge and information.

How Library Professionals can Create Access to Indigenous Knowledge
In creating access to indigenous knowledge, the information professional should work with the community in order to analyze the project and determine the specific needs of the indigenous and non-indigenous people before making decisions about the collection, cataloguing, classification, indexing, abstracting and digitizing the materials to facilitate access.

In doing this, Christie (2004) observes that making decisions that work well for the owners of the indigenous knowledge requires long term, deeply negotiated and collaborative processes where questions of the nature, politics, and creation of indigenous knowledge remain central. This will engender confidence in the information professionals by the local communities, so that they can give the whole information required. Furthermore, there is a major difference between indigenous knowledge and western knowledge. For example the western knowledge has categorized knowledge into disciplines such as arts, history, geography, philosophy, religion, science, agriculture, nature, medicine, culture and so forth, while indigenous knowledge systems are holistic, looking at the whole subject matter as interrelated and interconnected and not able to be understood in isolation (Kargbo, 2006). Indigenous knowledge is inextricably bound to the land or ecosystem in which the people live. Therefore the Library Professionals must take these into consideration when providing access to indigenous knowledge. Such that in keying indigenous knowledge into the database, all metadata and all of the text in each object should be equally available to search. Also, the indigenous communities must be asked how they would search for particular objects in the database, so that the retrieval of these objects is ensured.

In creating access to indigenous knowledge, Libraries and archives as part of the information superstructure, need to reassert cultural integrity, cultural authority, and preservation of context, cultural sovereignty and respect (Wendland, 2007). Corroborating this, Battiste and Henderson (2000) note that indigenous knowledge is the expression of the vibrant relationships between the people, their ecosystems, and the other living beings and spirits that share their lands. These multilayered relationships are the basis for maintaining social, economic, and diplomatic relationships, through sharing, with other peoples. All aspects of this knowledge are interrelated and cannot be separated from the traditional territories of the people concerned.

In his experience of collecting oral histories of indigenous communities in Argentina, Civallero (2005) observes that the indigenous communities who used the collections often did not understand broad subject classifications assigned to objects such as religion or philosophy because they do not distinguish between these areas in their own culture. In finding solution to this, Civallero had to invent new categories which reflected terms that would be meaningful to people in the community. These are the kinds of innovation that Library Professionals must develop to ensure effective and efficient access to indigenous knowledge. Another very unique characteristic of indigenous knowledge is that it is communicated orally through storytelling, folklores, incantations, proverbs or through hands on experience in the ecosystem from which the knowledge originates. Therefore to provide access, methods of preservation must be adapted to this process as much as possible. Fortunately, digital technologies facilitate this in ways that were not previously possible. Audiovisual digital recording devices can be used to capture oral stories in original indigenous languages, as well as techniques, practices, songs, and dances, often performed in context. Photographs, manuscripts, and physical artifacts can be closely represented using scanners and 3D scanners. Also, connections or interrelationships between knowledge and the ecosystem can be enhanced through the use of maps and Geographic Information System

(GIS) technology (Hunter, 2005). The indigenous community must also be able to control access to indigenous knowledge by people outside of the community. Each community and project will have different needs around security depending on the knowledge itself and how it is meant to be used. In some instances, communities may be storing the knowledge so that it can be accessed by outsiders, for example, knowledge that will be used by government departments for natural resource management or environmental degradation management such as erosion. Or some communities may wish to record indigenous knowledge related to plants so that pharmaceutical companies that use these plants for product development will recognize prior use by indigenous communities and benefit them accordingly. The indigenous community may be assisted by Library Professionals to patent or obtain copyright for documenting these plant products so that they may be receiving royalty in perpetuity. These need to be determined prior to choosing tools and developing system that enhance access to indigenous knowledge. Appropriate security measures must be incorporated into the indigenous information systems as well.

Furthermore, the issue of information and communication technology (ICT) must be taken into consideration in creating access. Usually, indigenous communities are located in remote areas and therefore may have no or limited internet connectivity and technical support. This is an important area where Library Professionals will provide the needed resources. Indigenous information systems may also be designed or chosen to function independently of internet connections. Indigenous communities often have limited funding to undertake knowledge management projects. Therefore library Professionals must ensure that indigenous communities are able to access technologies at a low cost or for free. In this wise, open source software programmes, which can be downloaded and used for free, may always be considered as an alternative to proprietary software. Also programmes should be able to be used on different operating systems so that they can be run on any available technology, and they should be able to be used on different operating systems so that they can run on any available technology, and they should be able to incorporate future technologies that may be developed. The indigenous information systems should also be built to handle a great deal of information to allow for unlimited growth, use and access.

Other concerns in providing access to indigenous knowledge is that it must be noted from the beginning that indigenous communities may have no or limited computer literacy and keyboarding skills. This means that search interfaces should be simple and should allow users to search and browse using graphics and other non text based features. This will go a long way in ensuring that local communities are able to access indigenous knowledge. Another very important consideration in the organization and retrieval of indigenous knowledge is that standard thesauri and classification systems have been developed with a Western bias. Therefore, they lack the complexity of concepts and words of particular indigenous languages and cultures. Consequently, in managing indigenous knowledge, there is the need for Library Professionals to find out alternative thesauri and classification schemes or develop new ones to suit the local knowledge system being managed.

Challenges in Documenting and Managing Indigenous Knowledge

The role of Library Professionals in managing indigenous knowledge comes with a lot of challenges in a competitive environment. This includes the difficulties associated with protecting indigenous people's intellectual property rights. This difficulty has arisen due to the oral nature of indigenous knowledge and the concepts of communal ownership. Apparently, Western methods for management of intellectual property do not offer proper solution for recognizing and protecting indigenous cultural and intellectual property rights. The fact that indigenous knowledge is communally owned, whereas Western intellectual property rights attributes ownership to individuals or corporations or institutions or organizations, raises a major issue for libraries. More so, documentation and publicizing indigenous knowledge by non-indigenous people could lead to their appropriation or attribution to others, other than the original owners. This makes it impossible for indigenous knowledge holders to get appropriate returns to their communities. Therefore Library Professionals have the onerous duty of protecting indigenous knowledge by preventing them from being appropriated, copied, sold, exported or imported without due authorization. Another challenge is that not all aspects of indigenous knowledge can be captured as artifacts using digital technology (Adams, 2007). Or even captured using audio-visual or video cameras, for example, the use of incantation by some communities in Nigeria especially in Yorubaland where the priest communes with the spirits to bring into existence what is being demanded from the gods such as Sango, Oya, Ogun and so forth.

When Library Professionals document and make available such incantations to the society or community, its potency or efficacy may be lacking. As well, collection of indigenous knowledge from diverse indigenous sources is time consuming, laborious, and technically demanding, and a costly venture. Also Library Professionals have to put up with how to represent the knowledge in its holistic and oral form, within its connection to the social context so it can have its fullest meaning. This is a challenge the Library professional trained in the Western way of accessing information have to brace up for. Furthermore, Library Professionals face the challenge of extracting indigenous knowledge in its holistic form from individuals or communities who may be unwilling to share their actual knowledge with non-indigenous people. Therefore, Library Professionals must develop strategies that will enable them to access and extract such knowledge, perhaps by compensating the holders of the knowledge.

CONCLUSION

Indigenous knowledge represents a major force in ensuring sustainable economic development of the African continent, and particularly Nigeria. More than ever before, there is the compelling need for Library Professionals to assiduously ensure that they access indigenous communities in order to collect, preserve and disseminate indigenous knowledge for rapid economic development. This will give them competitive advantage over the western knowledge. Reliance on Western knowledge alone has not pulled Nigeria out of economic doldrums. Therefore, there is need to make use of our indigenous knowledge to accelerate our development in agriculture, health care, animal husbandry, natural and environmental resource management, pharmaceutical products, forest

development and much more. Therefore, given the nature and ownership structure of indigenous knowledge, government at all level: Federal, State and Local must through the National, State and Local Assemblies put in place relevant laws that will guide the access and management of indigenous knowledge in Nigeria. The government must put in place policies that will provide literacy, both basic and IT literacy for the populace. It is apparent that Nigeria has a large reservoir of indigenous knowledge waiting to be tapped for national development. It is also obvious that even before the colonization of the country and even thereafter, Nigeria has been using various herbs and plants for health care; using crop propagation and protection practices, animal husbandry methods, forest preservation mechanisms and so forth for its sustainable development. The law or policy should make it mandatory for all libraries in the country whether public, academic, school or research libraries to have a division of indigenous knowledge that will see to the collection, organization, preservation and dissemination of indigenous knowledge in a competitive manner. In particular, the policy should set up mega Indigenous Knowledge Library (IKL) in the 774 Local Governments in Nigeria. The Nigerian Library Association (NLA) and the Librarian Registration Council of Nigeria (LRCN) should be charged with overseeing such indigenous knowledge Libraries and funding appropriated to them from the national budget through NLA and LRCN. This will go a long way in preserving our indigenous knowledge, because elders who are custodians of such knowledge are dying without transferring the knowledge to the younger generations, who themselves are preoccupied with acquisition of Western knowledge anyway.

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