XVII STANDING CONFERENCE OF EASTERN, CENTRAL & SOUTHERN AFRICA LIBRARY & INFORMATION ASSOCIATIONS

SCECSAL XVII

Librarianship as a Bridge to an Information and Knowledge Society in Eastern, Central and Southern Africa

Hosted by
Tanzania Library Association

DIAMOND JUBILEE CONFERENCE CENTRE
DAR ES SALAAM, TANZANIA
10 – 14 JULY 2006

Published by
The Library and Information Association of Tanzania
P.O Box 33433
Dar es Salaam
TANZANIA

Phone: +255 744 296134
Email: tla_tanzania@yahoo.com
Website: http://scecsal2006.tlatz.org
http://www.tlatz.org

ISBN 9987 9086 1 6

SCECSAL XVII Organising Committee

Dr. Alli Mcharazo	-	Member and Chairperson
Mrs. Dorothy Sekimang'a	-	Member and Secretary
Mr. Hemenegild Haule	-	Member and Treasurer
Mr. Abdallah Hassan	-	Member
Mr. Al-Amin Yusuf	-	Member
Mr. Abdullah Saiwaad	-	Member
Dr. Elizabeth Kiondo	-	Member
Mr. Hamid Rajabu	-	Member
Ms. Irene Mphuru	-	Member
Mr. John Mollel	-	Member
Mr. Phillidas Munubhi	-	Member
Mr. Theophilus Mlaki	-	Member
Prof. Kingo Mchombu	-	Member

The publication of these proceedings has been made possible through the generous support of IFLA Advancement of Library Programmes

Contents

SUB-THEME 1:

Harnessing Knowledge Management for Africa's Transition to the 21st Century
Kingo J. Mchombu.……..2

Politics of information and knowledge in Africa: The Struggle for an Information Inclusive Society in a Globalised World
Shiraz Durrani ……..40

The Role of the Information Professional in the aAge of Uncertainty: Complicated of Complex?
Deonie Botha.……..66

Libraries and Democracy
Mohammed M. Aman.……..79

Knowledge Management: The Emerging Challenges for the Library and Information Professionals
S. C. Otenya and C. M. Nyamboga.……..94

Facilitating Knowledge Management: Opportunities for Libraries in A Changing World
Retha (M M M) Snyman and Hazel van Rooi.……..106

Towawards Effective Knowledge Management Practices for Agricultural Information Specialists in Tanzania
Wanyenda L. Chilimo and C. Sanga ……..124

From Collection Management Practices: Considerations for the Sokoine National Agricultural Library in Tanzania
Edda T. Lwoga, and Alfred S. Sife ……140

The Role of Knowledge Management in Health Libraries in Uganda:A Case Study of Albert Cook Library, Makerere University
Agaba Didace M Alison and Annet Kinengyere.……156

Knowledge Management Initiatives in Selected Libraries in Kenya: A Case of Small Scale Horticultural Farmers, Marketing Experiences
Eric Ndegwa ……..167

Information Management or Knowledge Management: Practices or Initiatives in Academic Libraries in Africa
Priti Jain and R. B. Nfila.……178

Quest for Knowledge and Knowledge Management in Rural Societies in Africa
J. R. Ikoja-Odongo.……196

Community Center Gellerup from Everyday Practice to Method Development: A Danish Public Library Case
Lone Hedelund ……..219

Information Skills for Knowledge Management in Developing Communities: Complexity or Complacency?
Gavin R. Davis ……245

SUB-THEME 2:

The Challenge for the Public Libraries in Sweden
Bo Markusson.……268

Management of Agricultural Research Information and Knowledge: A Case for the SCECSAL Region
Justin Chisenga.……..257

Telecentres as a Strategy for Knowledge Management in the SCECSAL Region: A Case of Uganda
Sarah Kaddu and Joyce Bukirwa Nyumba.……272

A Digital Library in a Rural Malaria Research Centre in Africa: The Kenyan Experience
J. Kaduda; C. H. O. Olola; T. O. Oluoch and D. M. Mwazi, ….…..289

Addressing the Challenges of the Information and Knowledge Societies: The Case for Optimum Curriculum in the SCECSAL RegionI
I. M. N. Kigongo – Bukenya.…….304

Trends and Patterns of 'Knowledge Management' Research in South Africa: An Informetric Analysis of Tacit and Explicit Knowledge Management
Omwoyo Bosire Onyancha and Dennis N. Ocholla.…….316

Knowledge Sharing and Legal Deposit: Complementing Endeavours in Africa
Cecilia Penzhorn and Maritha Snyman ….340

Seven Years' Experience Delivering Electronic Journal in Africa: An Intercontinental Partnership
Gracian Chimwaza and Mary Ochs.…….357

Knowledge Management Using Weblogs, Wikis and RSS
Karen Hartman ….379

The Management and Administration of Manuscript Collections within Library Environments in Eastern and Southern African Region
Nathan Mnjama.……391

Records Management and Knowledge Management: Supporting Organizations to Meet Business Objectives: Where Do They Differ?
Cathrine Nengomasha.…….402

SUB-THEME 3:

Making a Contribution to the Civil Society: Knowledge Management and the Information Professional
Stephen A. Roberts.…….422

Information Vaccine: Information and Uganda's Reduction of HIV/AIDS
Kendra S. Albright, Dick Kawooya and Judy Hoff.…….464

Socio-cultural Determinants of HIV/AIDS Information Impact: Experiences from Babati District
Paul Akonaay Manda …….....478

"From Food Silos to Community Kitchens" – Retooling African Libraries
J. C. Du Plessis., J. J. Britz and P. J. Lor…….497

The Role of Traditional/Community Leaders in Assisting Orphans and Vulnerable Children in Namibia
Chiku Mchombu.…….533

Knowledge Management and the Provision of Business Information to Small Town Enterprises: The Case of Machakos
Fidelis Katonga.…….511

Knowledge Management – Based Approach to E-Governance: A model for East and Southern African Countries
Stephen M. Mutula.…….531

Libraries as a Bridge to Knowledge Management and Indigenous Knowledge for the Development of Africa's Information Systems and Services
Nathan Ole Lengisugi.…….553

What can be the Role of African Libraries in Counterbalancing the "Knowledge Power" of the West? Can we Create New Knowledge Together?
Thore Hem, Norad/Norway ……..…600

Working in Partnership to Build Knowledge Societies
Book Aid International ……..609

The World Health Organization Africa Regional Office Library: Mission and Activities within the Knowledge and Information Sharing Unit
Marie-Paule Kabore ……..624

SUB-THEME 4:

Knowledge Management and Indigenous Knowledge for Development of Africa's Information Systems and Services: Some Legal Issues for Information System Experts
Paul Faustin Kihwelo ……..564

Cross-Cultural Information Retrival: Searching for English Documents using Zulu Queries
Erica Cosijn Ari Pirkola, Theo Bothman and Kalervo Järvelin.……580

Knowledge Management Practices for the Development of Africa's Information Systems and Services
Deborah Nyabundi.……596

Preface

The conference on “Libraries as a Bridge to an Information and Knowledge Society in Eastern, Central and Southern Africa" was organized in Dar Es Salaam from 10th to14th July 2006 by Tanzania Library Association on behalf of sister library associations in the sub-region, under the umbrella of the XVII Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL XVII). SCECSAL XVII chose to address its own challenging theme as has become the tradition for the biannual conferences.

Over the last three decades, library and information science specialists and professionals in the East, Central and Southern African region have been pre-occupied with the process of re-evaluating the new roles of libraries and information centres in addressing challenges in the continent. Specifically, they have debated modalities of making our libraries and information centres more Afro-centric, people centred institutions, geared towards stimulating the region’s socio-economic and cultural development process and national transformation. The SCECSAL conference has served as a useful platform for leading librarians and information science specialists from the sub-region and beyond to grapple with issues of the role of information and knowledge in social change.

This endeavour to influence social change and regional development through information sharing has encountered a series of challenges including inadequate communications infrastructures, lack of rural electrification, illiteracy, HIV/AIDS-pandemic, gaps in the government policy and regulatory framework, and above all, poverty which, often, derailed the process and efforts of making the people of the region have better access to information and knowledge to satisfy the need for human development and dignity.

The essays presented in this publication explore the complex dynamics of addressing these issues of information and development of the people in the region. The essays are insightful in that they take a cross disciplinary approach to detail the complex interaction between knowledge, information

and development and how the three can together mould up a new and more informed society.

The papers are also exploratory and interpretative because they look into new challenges, which our libraries and information units in the region ought to address. At the forefront is the issue of making them people centred and Afro-centric. For many years, libraries have served the interest of the colonial masters and the African elite, and quite often totally ignored the plight of the rural and urban poor. This perception has to change. Libraries in the region should be more inclusive and serve the needs of all users in society.

Many of the authors who wrote these papers are however querying the readiness of our governments to help these key institutions to transform themselves into this new thinking. Will the governments afford the costs involved? Are the societies ready to cope up with the changes? Will librarians and information specialists willingly change their mind that favours serving the elite and powerful at the expense of the majority marginalized communities? How does the new global challenge of transforming to an information and knowledge society influence these concerns? No doubt not only this SCECSAL but future conferences will pick upon these issues and shed more light on the paradox of information being the most valuable development resource, yet in our underdeveloped sub-region we are unprepared to fully harness this new resource for human development.

These papers are provocative in that they raise questions on all these issues but sometimes the answers are yet to fully emerge. Many of these issues will be with us for a long time. Nevertheless we are glad to submit these papers written by highly trained professionals, and experienced staff in library and information related services in the region and beyond to a wider audience. We hope you will find them useful as they provide a glimpse of the state of information services in the sub region and their struggle to be part of an emerging information and knowledge society.

We would like to express our sincere gratitude to all those who contributed to successful organization of this conference and the publishing of these

proceedings. We also thank most sincerely, all the members of the SCECSAL XVII Organizing Committee and paper presenters. Without their excellent work behind the scenes for the last year this conference would not have taken place neither would these wonderful papers have seen the light of day. *Asanteni sana kwa kazi nzuri!!*

Editorial team:

Prof Kingo Mchombu,
Prof Paul Manda,
Dr Anthony Olden,
Dr Alli Mcharazo,
Mr Sam Kasulwa

Dar es Salaam, Tanzania

July, 2006

Abbreviations and acronyms

ABC's	Abstinence Faithfulness and Condoms
AFRO	WHO Regional Office for Africa
AGOA	African Growth and Opportunity Act
AGORA	Access to Global Online Research in Agriculture
AGRIS	Information System on Agriculture Sciences and Technology
AIDS	Acquired Immune Deficiency Syndrome
AIMS	Agriculture Information Management Standards
AISI	African information society Initiatives
AL	Artificial Intelligence
ALM	Africa Index Medicine
AMREF	African Medical and Research Foundation
APNET	The African Publishers Network
AVLIN	African Virtual Library and Information Network
BIC	Business Information Center
BRIC	Brazil, Russia, India and Cuba
CBD	Conversion Biological Diversity
CBD	Conversion on Biological Diversity
CBO's	Community Based Organizations
CCIR	Cross-Cultural Information Retrieval
CD-ROM	Compact Disk Read Only Memory
CD-ROM	Compact Disk Read Only Memory
CFKMP	Conceptual framework of Knowledge Management Process
CKO	Chief Knowledge Officer
CLIR	Cross Long Information Retrieval
COSTECH	Tanzania Commission for Science and Technology
DFD	Data Flow Diagram
DFID	Department for International Development
DG	Discussion Group
DRC	Democratic Republic of Congo

DRD	Department of Rural Development
DVD	Digital Video Disc
EAC	East African Community
EC	European Commission
ECM	Electronic Content Management
EDM	Electronic Document Management
EMR	Electronic Medical Records
ERM	Electronic Records Management
FAO	Food Agriculture Organization
FBO's	Faith Based Organization
GDP	Gross Domestic Product
GDP	Gross Domestic Product
GFAR	Global Forum on Agriculture Resource
GNP	Gross National Product
HDI	Human development Index
HINARI	Health Inter-Network Access to Research Initiative
HIV	Human Immune Deficiency Virus
I&D	Information and Development
IAALD	International Association of Agricultural Information Specialists
IBM	International Business machine Cooperation
ICA	International Council of Archive
ICESCR	International Covenant on Economic Social Cultural Rights
ICNBS	International Conference on National Bibliographic Service
ICT	Information Communication Technology
IDRC	International Development Research Centers
IEC	Information Education and Communication
IFLA	International Federation of Library Associations
IK	Indigenous Knowledge
IKM	Information Knowledge Management Strategy
IKS	Information Knowledge System
ILO	International Labor Organization

IM	Information Management
IMARK	Information management Resource Kit
IMF	International Monetary Fund
INASP	International Network for the Availability of Scientific Publications
IPR	Intellectual Property Right
IRMT	International Records Management Trust
ISAP	Index for South African Periodicals
ISI	Institute for Scientific Information
ISRM	International Standards on Records Management
IT	Information Technology
ITSA	Information Technology Standards Association
ITU	International Telecommunication Union
JWD	Journal Web Database
KEMRI	Kenya Medical research Institute
KIDMS	Kilifi Integrated data Management System
KM	Knowledge Management
KMTC	Kenya Medical Training College
KVL	Kilifi Virtual Library
LAN	Local Area Network
LIC's	Libraries and Information Centers
LIS	Library Information Science
MARECIK	Maasae Resource Center for Indigenous Knowledge
MCT	Multipurpose Community Telecentres
MDG	Millennium Development Goals
NARC	National Agricultural Research Center
NGO's	Non-Governmental Organization
OPAC	Online Public Access Catalogue
OSS	One Stop Shop
OVC	Orphans and Vulnerable Children
PALIAct	Progressive African Library and Information Activist
PDF	Portable Document Format
QLP	Quality Leaders Project
RM	Records Management

SABINET	South African Bibliographic Network
SADC	Southern African Development Commission
SCANUL ECS	Standing Conference of National University Libraries of Eastern, Central and Southern Africa
SCECSAL	Standing Conference of Eastern, Central and South African Librarians and Information Science
SCI	Science Citation Index
SES	Social Economic Status
SMME	Small Medium and Micro Enterprise
SSCI	Social Science Citation Index
SUA	Sokoine University of Agriculture
SWOT	Strength Weakness Opportunities and Threats
TAFORI	Tanzania Forest Research Institute
TB	Tuberculosis
TC's	Telecentres
TEEAL	The Essential electronic Agriculture Library
TLA	Tanzania Library Association
TM	Traditional Medicine
TPRI	Tropical Pesticide Research Institute
TRIPS	Trade Related Aspects of Intellectual Property Rights
TV	Television
UAC	Uganda Aids Commission
UDHR	Universal Declaration of Human Rights
UN	United Nations
UNCED	United Nations Conference Environment
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
USA	United States of America

USAID	United States Agency for International Development
USAID	United States Agency for International Development
USDL	Uganda Science Digital Libraries
USIA	United States Information Agency
USSR	Union of Soviet Socialist Republic
VETA	Vocational Educational Training
WAICENT	World Agriculture Information Center
WCED	World Commission in Environment and Development
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WKS	World Knowledge Society
WSF	World Social Forum
WSIS	World Information Summit on the Information Society
WSIS	World Summit on Information Society
WTO	World Trade Organization
WTRL	Welcome Trust Research Laboratory
WWII	World War II
ZCC	Zonal Communication Center

SUB-THEME 1:

The African Renaissance, Libraries and Knowledge Management

KEY NOTE ADDRESS

HARNESSING KNOWLEDGE MANAGEMENT FOR AFRICA'S TRANSITION TO THE 21st CENTURY

Kingo J. Mchombu

1 Introduction

The purpose of this paper is to analyse the factors which make knowledge management (KM) an important resource for accelerating the development of Africa as we move towards the 21st Century. As African information specialists we are faced with the urgent challenge of making our full contribution to ongoing efforts, in our respective countries, to end poverty and underdevelopment on our continent. The key objective of this paper is thus to answer the question: what are the methods that information and knowledge management can use to address poverty and underdevelopment in Africa? In addressing this topic, the paper raises the following sub-questions:

i) What are the basic concepts underlying the information and KM revolution?
ii) How best can Africa manage the transition process to an information and knowledge based economy?
iii) What role does KM play in national development?
iv) What challenges face information specialists in the knowledge revolution era?

In addition to this introduction, this paper has five other sections. The second section provides basic concepts and definitions of knowledge management. Section three explores the management of the transition process from an agricultural societies to an information and knowledge based society. Section four focuses on the role information and knowledge plays in human development. Section five continues the exploration by anaysing specific sectors of national development, and section six looks at the challenges for information specialists in the knowledge revolution era.

2. CONCEPTUAL FRAMEWORK OF KM AND SHARING

2.1 THE KNOWLEDGE PYRAMID

This section starts with a discussion of the concepts of data, information and knowledge to establish their meanings in the context of knowledge as a strategic resource for economic development. Davenport and Prusak (1998) asserts that data is not information, and the latter is not knowledge. The conceptual relationship (data, information and knowledge) can be visualized as a pyramid of interdependent layers on top of each other, sometimes called the information pyramid (Marco 2003). The bottom layer of the pyramid is data defined as symbols, facts and figures which are the raw materials to be processed to information. When data has been processed into a meaningful form it becomes information (Feather and Sturges 2003:341). It has also been noted that knowledge is information which has been evaluated and organized in the human mind so that it can be used purposefully (Feather and Sturges 2003:341).

Knowledge can be subdivided into two sub-categories – tacit and explicit knowledge. According to Nonaka (1998:28) explicit knowledge is formal and written, tacit knowledge is personal knowledge based on an individuals experience, insights and intuition. He asserts: "tacit knowledge consists partly of technical skills – the kind of informal, hard-to-pin-down skills captured in the term 'know how'. A master craftsman after years of experience develops a wealth of expertise at his fingertips but he is often unable to articulate the scientific or technical principles behind what he knows. It is recognized that such tacit knowledge has a cognitive dimension, made up of mental models, beliefs, and perspectives so ingrained that they are taken for granted and cannot be easily articulated. The popularization of the concept of tacit knowledge by Nonaka (1998) has profound implications on the production of knowledge in society as we shall attempt to show in a later section of this paper.

Embedded within tacit knowledge, is the concept of creativity (among others), which includes use of figurative language and symbolism to articulate and share insights and intuitions. Nonaka (1998) explains how creativity (and lateral thinking) has been used by Japanese companies to

spur the creation of new products such as cars, electronic products, and others because it enables the sharing of complex insights among the workforce.

The recognition of the high value of experiential knowledge (tacit knowledge) has led to a new awareness about the need to reassess how human resources are managed in organizations, and the need to revisit the cultural content of knowledge. Joseph Stiglitz (1999) the renown former world Bank Chief Economist, has noted that the shift towards a knowledge based economy involves a shift in organization structures away from top-down hierarchical systems to horizontal structures such as networks, and semiautonomous teams, and other forms of matrix organizations. Stiglitz (1999) emphasizes the need for giving employees/citizens incentives to develop their own capacities, and confidence in using their own intelligence to empower change and learning activities. He makes a call for countries to shun external agencies which impose "best practices" imported from elsewhere because this only reinforces impotence. For countries to succeed in applying knowledge management to development, according to Stiglitz, they have to rely on their own internal understanding, wisdom and culture. As Stiglitz (1999) would have it, African are the best suited to change their own culture in order to transform the continent into a viable, knowledge based economy.

Relating libraries to KM, Vagan (2004) claims that library and information sciences find it difficult to accommodate knowledge management because knowledge is more difficult to control/manage compared to information which can be treated as a measurable units onto which one may apply the classical skills of cataloguing, classification and indexing and bibliography. However it is my contention that libraries and information centres, can operate in both the domains of information management as well as knowledge management. Data management is more suited to computer centers. However it is important to recognize and plan for operating in the different domains, as they require different approaches, skills and roles.

2.2 DEFINING KM

There are many definitions of KM, each of which has a different context and aim in mind. For the purpose of this paper, however, knowledge management can be defined as:

> "….a disciplined approach to managing all the knowledge processes found in human collectives (a set of people with common goals). KM is what we do to accomplish our goals faster and more effectively by delivering the right knowledge to the right person at the right time and in the right context. By engineering human environments for optimal production, transfer, and usage of knowledge, we increase our ability to take effective action, compete, and survive. Knowledge management will ensure the survival of an organization by leveraging collective wisdom to increase responsiveness and innovation" (acknowledge centre 2005).

The same website describes KM as a cross disciplinary practice that enables organizations to improve the way they create, adopt, validate, diffuse, store and use knowledge in order to attain their goals faster and more effectively.

2.3 BRANCHES OF KM

It has been claimed that KM has a long history although it has only recently become a fashionable discipline (Davenport and Prusak 1998) and is both a science and an applied science and is multidisciplinary in nature. As a science KM asks questions on how individuals and human collectives work naturally with knowledge processes such as production, acquisition, transfer, and use of knowledge. On the other hand KM applied these studies to improve knowledge processes and their products by developing management techniques and tools for improving knowledge processes (acknowledgecentre 2005:8).

Several writers have also claimed that KM falls into two theoretical models. McAdam and McGreedy (1999:93) for example, have noted that

one model focuses on theories that concentrate on the knowledge of people and knowledge construction. The second model involves theories that focus on information technology, which is more interested in the creation of databases for storing information, making information available, in general handling of explicit knowledge (Steyn 2004:4)

Commenting on these two KM models, Kidwell et al (2000:30) notes that the early tendency was to focus on one type at the expense of the other which caused fierce debate between the experts advocating a techno-centric approach to KM and those advocating a learning-centric approach. It is concluded by these writers, however, that it is of little use to have robust technology solutions if the existing culture prevents knowledge sharing, and there is little benefit in having robust knowledge sharing without some technological means of making knowledge widely accessible.

However there is a much more comprehensive classification of knowledge management. KM can be classified into three branches: KM of organizations, KM of Science and KM of Society. Each of these branches addresses similar questions but has different problem domains, and often has different tools and techniques.

A comparison of the three branches shows that KM of Science is the oldest, over 100 years, and has the production of scientific knowledge as its main concern. It seeks to improve the management of knowledge within the scientific communities and laboratories. KM of Society is concerned with knowledge processes in society and culture. The concern of this branch of KM is with knowledge diffusion within society and cultures, for example how knowledge is transmitted in schools, and other groups in society. The youngest and fastest growing branch is KM of organizations. This branch is further divided into four sub branches: KM in Business, KM in Non-Profit Organizations, KM in Government, and KM in Educational Institutions. Of all these sub branches, KM of business is the most active as it seeks to improve a firm's competitiveness and profitability through knowledge application (aknowledgecentre 2005:8).

There are overlaps in all these branches and many tools and techniques developed in one branch can be useful to other branches.

3. MAKING THE TRANSITION FROM AN AGRICULTURAL TO AN INFORMATION AND KNOWLEDGE ECONOMY

How a society transforms from an industrial economy to an information and knowledge society has not been clearly explained. The implied strategy is the increased use of computers in all spheres of society (Webster 1996). The issue has been further complicated by the infusion of a heavy doze of ideology and contested terms such as globalisation, free flow of information, information superhighway, the information market place, deregulation, and privatization (Dick 2002:24).

There has thus been a tendency to define an information society from an ICT perspective. This techno-centric approach to KM has received added force from some documents provided by the United Nations documents. The UN has set 2015 as a target date for attaining the Millennium Development Goals (MDG) of halving the number of people living in extreme poverty by building digital opportunities and putting ICT at the service of development. In his speech the Secretary General of the UN, Kofi Annan, urges African leaders to mould their economies to became active participants in the global economy by adopting ICT. He said "unless African countries become full actors in the global information revolution, the gap between the haves and have-nots will widen, opening the possibility of increased marginalization of the continent. On the other hand, participating in the information society offers tremendous opportunities for Africa to leapfrog …into the future" (Kofi Annan 2001). Many other leaders in Africa, including Presidents Mbeki of South Africa, President Museveni of Uganda, former President Mkapa of Tanzania, and former President Nujoma of Namibia have spearheaded the expansion of ICT in their countries with the hope that this will accelerate development.

Vaagan (2004:234) and other social scientists have cautioned that "a country's high percentage of "online" inhabitants mean little when the sheer amount of information cannot be assimilated into knowledge". Vaagan calls this the "ICT trap" which highlights the danger of a one-sided ICT driven process where explicit or codified knowledge is made available through ICT but not optimally shared or used by others.

A case in point is when BP undertook to introduce its knowledge management programme, a decision was taken to put the programme under an independent group rather than the IT division because "it was believed that the program would be less likely to fall into familiar IT patterns if a group drawn from different parts of the company ran it. Also the intentional absence of IT control would make clear that the project was about communication, business change, and corporate behaviour, and not technology for its own sake." (Davenport and Prusak 1998:20)

Several studies claim that the transition to an information society, is a linear process, based on progression from an agrarian society to an industrial society and ultimately an information society. Several distinguished authors have pointed out that the information society represents an advanced form of industrial society but concede that information activities also played an important role in the industrial revolution process (Bell 1973, Drucker 1993). Supporting this viewpoint, is data from a study by Shifflet showing that although the majority of information workers are found in the tertiary sector, both the secondary and primary sectors also have relatively smaller numbers of information workers, with the primary sector having the smallest proportion of information workers (Shifflet 2001:168).

The question which is still open to debate however is whether informatization of society represents a fundamental change in the pattern of society, specifically whether information has replaced industry as the major economic activity or whether it is an incremental process incorporating both new and old elements found in the earlier stage of development (Bell 1973).

An African perspective to this debate concerns whether African countries can move from an agricultural economy to an information society without an established industrial base. A Ghanaian researcher on African information communication issues noted that

> "a dream of transforming an agro-based economy into an information society must either be a flight of fancy or a thinking hardly informed by the industrial economic

> background of developed economies that are on transition to informational economies. For an economy with about half of its adult population engaged in food production sector, and about 70 percent of its development budget sourced from donor support, any talk of transition into an information society sounds like a far-fetched dream." (Alhassan 2004)

Arguing from a slightly different perspective, Kaariainen (2005) support the same view and argues that realism is called for in promoting information societies and ICTs. There is no leapfrogging into the information age as touted. Progress towards the information society is a gradual process and needs to be measured by social and intellectual development and not solely by technological advancement (Kaariainen 2005)

The views of Alhassan, Kaariainen and others would seem to indicate the need for Africa to research carefully its own path towards the information and knowledge economy rather than simply copying what has happened in developed countries without much effort to look critically at alternative approaches. The conditions, culture and level of industrialization of developed countries differ from those of Africa and the outcomes from using technologies to achieve development might not bear the same results (Whyte 2000, Menou and Mchombu 2004)

A compromise approach is to present the knowledge economy phenomenon as combining both the old and the new in one economy and the Internet being the platform for the economic fusion process, similar to Drucker's (1993) thinking. Proposing this view, Prime Minister Tony Blair (2000) noted that the knowledge economy and the old economy is really one economy. He asserts "there is no new economy, there is one economy, all of it being transformed by information technology…it is a profound economic revolution." He further notes that "in this new environment the most important commodities of a nation are information and knowledge.."

This thesis would appear to suggest, among others, that libraries and information centers should work towards harnessing the power of the Internet for their communities, and train users in information/knowledge

literacy and the use of ICT in order to facilitate the transformation of their nations. However it is to the broader issues of information and knowledge plays in development that the next section explores.

4 KNOWLEDGE FOR HUMAN DEVELOPMENT

This section looks at information and knowledge transfer as factors of production and ways African countries can use to address the deficit of development information in the continent.

4.1 KNOWLEDGE AS A FACTOR OF PRODUCTION

It is now generally accepted that information and knowledge are a resource and commodity and key determinant in the progress of society. *The World Bank Development Report of 1998* subtitled Knowledge for Development points out that knowledge is needed to transform the resources we have into things we need, and to raise standards of living, improve health conditions, provide better education, and preserve the environment, and do all these in the most optimum way possible. All these value addition activities require knowledge. The report concludes that "for countries in the vanguard of the world economy, the balance between knowledge and resources has shifted.. [and]..knowledge has become ..the most important factor determining the standard of living – more than land, than tools than labour. Today's most technologically advanced economies are truly knowledge based" (World Bank 1998).

A critical dilemma for African (and other developing) countries is that the past 20 years have witnessed the most massive accumulation of explicit knowledge and information in human history. Digital information and communication technologies, and new ways of thinking on knowledge management, have revolutionized the ways in which knowledge and technical know how move around the world. According to Whyte (2000:4) among others, this proliferation of access to information has widened the gap between rich and poor countries. She gives the example of USA where it is claimed 75 percent of the population have access to the Internet, and Africa where the Internet penetration is below 1.2 per cent. This is a dilemma because amidst this world of plenty in terms of information and

knowledge, the African local content is also very low, because of lack of capacity to produce, transfer, and disseminate information. It is concluded that African countries and their institutions such as universities, research centres, library and information centres, service organizations and private enterprises are at a major disadvantage in the current knowledge economy. She calls on countries to change how they think about training, organizational management, and interaction in order to take advantage of the soaring knowledge economy.

Despite of the examples cited above, the awareness of the central role knowledge plays in economic and social development is not new. One of the examples of this early awareness of the role of knowledge in human development, cited by Ramalingam shows for example that former American President Truman had a clear focus on how the transfer and utilisation of knowledge could help in human development. President Truman noted in 1949 that:

> "…we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and more prosperous areas. For the first time in history, humanity possesses the knowledge and the skill to relieve the suffering of these people……The United States is pre-eminent among nations in the development of industrial and scientific techniques. The material resources which we can afford to use for the assistance of other peoples are limited. But our imponderable resources in technical knowledge are constantly growing and are inexhaustible. I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life…." (Truman in Speech, 1949, cited by Ramalingam 2005:7)

The transfer of knowledge for development has proven to be a more complex process than these early statements suggest. That is why transfer to knowledge is still regarded as a novel concept today. In the case of President Truman's address it was backed by the Marshall Plan for Western Europe for reconstruction after World War 2. It is said that the USA gave financial assistance and technical knowledge transfer worth 10 times what it gives for development aid today (Sachs 2005)

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 makes the most productive use of information, knowledge and technology. Singapore had recognized that these were the key factors to economic success, not natural resources, which were very scarce.

In the information intensive society of today, knowledge production is taking place at a fast pace through out the world. Both knowledge and information are also becoming obsolete quicker – hence for African countries to compete internationally they need to have access to the latest knowledge and information similar to the countries African nations are competing with. Unfortunately many libraries are often known for their huge stock of out of date materials rather than the current information they possess. The reason for this situation might be lack of financial resources and lack of awareness of the critical and strategic importance of information and knowledge to a country's competitiveness and development.

4.2. WAYS OF ADDRESSING THE KNOWLEDGE DEFICIT IN AFRICA

Addressing the knowledge deficit that separates them from technologically advanced countries is a crucial challenge for libraries and information centres. The World Bank (1998) report referred to above has proposed four steps to address the existing knowledge deficit. These steps are:

i) To acquire knowledge developed elsewhere rather than "reinvent the wheel" so as to save time and resources and adapt the imported knowledge to address information/knowledge deficits/gaps in a country

ii) Create knowledge locally through research and development (R & D) programmes. In fact the report proposes an investment of at least 1% of a country GDP in research and development activities. (South East Asian countries are investing at least 2-5-% of their GDP in R & D. The creation of knowledge locally should include tapping into indigenous knowledge resources that the population has to assist in development activities.

iii) Build the capacity of the population to absorb and apply knowledge through universal basic education, adult literacy and life long learning, tertiary education and an emphasis on science and engineering education.

iv) Create a capacity to communicate knowledge throughout the country through the use of cheap telecommunications, mass media, and extension literature and services.

The World Bank's report is useful but its weakness is that it puts emphasis on explicit and external knowledge and largely ignores tacit knowledge.

We now turn attention to specific sectors of development which Knowledge Management needs to address for African countries to accelerate their development towards the 21st Century.

5. KM AND THE KEY SECTORS OF NATIONAL DEVELOPMENT

Only if Knowledge Management can speedily be translated to action can we see social change on a large scale to ensure Africa claims her rightful place among other continents in the 21st Century. The six sectors which follow are vital areas to kick start the revival and reconstruction of respective countries in Africa. However, as already indicated elsewhere in

this discussion, knowledge does not act alone, like a magic bullet, to bring about widespread and sustainable social change. There are other factors which must be in place for knowledge management to make an impact on national development, namely: i) a reasonably educated population to absorb and apply new knowledge ii) a financial system which can provide funding for the various social changes required iii) ICT (both old and new technologies) to be a vital tool to transfer and share information and knowledge iv) a policy framework which creates an enabling environment for sustainable social change.

In order to generate, transfer, share and apply information in an impact bearing manner, each one of the key sectors form an information and knowledge system (IKS) of its own. According to Solomon and Engels (1997) an IKS consists of a variety of different actors and stakeholders, including extension agents (or their equivalent), managers of various agencies, private and public sectors, research centres, education and training institutions, the NGOs and civil society, banks, and policy makers. In the tradition of knowledge management, all these actors possess both tacit and explicit knowledge which they manage, generate, transform, transmit, store, retrieve, integrate, and diffuse and use within the six sectors identified.

A big challenge for information specialists, in the area of explicit knowledge, to map out who the stakeholders of the respective sectors are, identify the existing information and knowledge resources and repositories, the gaps which exist in these repositories, knowledge sharing and communication capabilities, and recommend how the existing IKS can be strengthened and improved to support social change and the transformation of the respective sectors. Each one of the sectors below would benefit from such an approach.

5.1 POVERTY ERADICATION AND WEALTH GENERATION

Poverty is a problem that requires deep reflection because poverty affects many people in Africa and most of the previous policies have not worked well. It is estimated that 45% of people in Sub-Saharan Africa live in extreme poverty while 30 percent live in moderate poverty thus making it

an average of 75% of the population who are poor. Further recent data show that poverty has grown since the 1980s. The vision of MDG is to end extreme poverty by 2015 (UNDP website). There is a real possibility that by applying knowledge management, Africa could make a major impact on combating both extreme poverty and moderate poverty.

To reduce poverty one needs to address the causes of poverty, hence success of KM would be measured in terms of how it impacts on reducing the causes of poverty. The key causes of poverty are (Sachs 2005; Mkandawire and Saludo 1999):

i) low savings and capital formation. KM should provide ideas on alternative ways of generating savings from poor communities

ii) Low growth in trade for example through agricultural surplus sales to nearby markets to generate more income. KM would have the goal of creating higher production and the introduction of high value crops to replace low value crops

iii) Capacity building through literacy, improved education for children including girls. KM intervention would include information support for education and takes measure to increase flow of technological know how in the community. KM would have the goal of addressing all the human capital issues required in capacity building, literacy acquisition and improved education for all

iv) poor health caused by infectious diseases such as HIV/AIDS, malaria, TB and malnutrition. This calls for KM interventions directed towards behavior change. This is important to prevent such diseases from decimating the most productive members of the community and thus increasing poverty by creating child headed households and many orphans

v) lack of innovation which may become common because of poverty restricting the flow of innovations from outside and within the community thus robbing the community new ideas to increase production, start small business and commercialize their agriculture

to a higher level of production. KM should provide support and diffusion of innovations and transfer of technologies from both outside and better sharing of technology and innovations within the community

vi) population explosion because the poor select to have many children as a form of old age insurance. Such children will not get good education and will in turn want to have many children, ultimately use of resources, overcrowding in cities, etc thus high population leads to deeper poverty and deeper poverty leads to high population and social conflict. The KM intervention would have the goal of family planning and cultural attitude change in favour of smaller families and women's position in society.

The importance of knowledge to development has already been raised by the World Bank (1998), UNDP (2003), international NGOs (Ramalingam 2004) and various other agencies. In the context of urban and rural poverty, we can look at information and knowledge as two distinct components which dovetail into each other. Information refers to the poverty reduction ideas which are disseminated by agencies, the mass media, posters, video, interpersonal sources, and social networks. Knowledge is the information coming from different sources which has been consolidated, processed and internalized by individuals, a community or society in the context of what they know already, and can either add it to their knowledge base or reject it. Thus knowledge is filtered and contextualized information which can be used to take action against poverty.

Poverty reduction in Africa has been very disappointing –inspite of the continuing development of new programmes targeted at the poor, such as Poverty Reduction Strategies (PRSP) of the World Bank, Human Development Index (HDI) of the United Nations Development Programme (UNDP), The Millennium Development Goals (MDG) of the United Nations. Part of the failure of these development programmes comes from a KM failure of the knowledge support structures for the urban and rural poor.

The link of KM to poverty eradication is very weak because of a number of reasons: the first one is the focus on information transfer activities without monitoring and evaluating how effective the information disseminated has been. In most cases the information needs of the urban and rural poor are seldom taken into account when they are supplied with information to solve their problem of poverty. The assumption being that because they know very little they are poor, thus the information and knowledge system of the urban and rural poor is totally ignored when supplying them with external information. Indeed often their very way of life and culture are held responsible for the lack of development. We also have very few information centres which are dedicated to poverty eradication either as part of larger information systems, or stand alone information agencies.

5.2 KM AND DIFFUSION OF INNOVATIONS AND TECHNOLOGIES

Diffusion of innovations can be defined as a process by which a new idea is communicated through certain channels over time among the members of a social system (Rogers1995). Both Rogers and other innovation researchers have pointed out that although the new idea (technical knowledge) is a central matter, social change is brought about as a result of a collective capacity to learn, involving a large number of semi-autonomous actors – individuals, groups, and institutions. Innovativeness can therefore be seen as a social competence based on social interaction among many stakeholders, rather than individual ability (Salomon and Engel 1997). Innovativeness is the key driver of economic growth and productivity of any economy and at the centre of transition to an information and knowledge society. "Without innovation there is no forward movement which means lagging behind, since standing still is neither possible nor an option in a time bound universe, that is in constant motion" (Kaariainen 2005)

A national innovation system needs several things to be in place: an educated population, a functioning financial system and a culture of innovation (Kaarianinen 2005). One should add to this list an information and knowledge system to support the process of innovation and knowledge

production. Partly out of this realization, most advanced countries invest between 2 and 4 percent of the GDP into the research and development process (Sachs 2005) Governments should invest heavily into both the early stages of research and the later stages of development (Sachs 2005) It has been noted that the research needs of the Third World countries are not likely to be on top of the research agenda of developed countries thus they need to prioritise their own research and technology needs and devote resources towards meeting developing new knowledge in these areas. Priority needs for research have been identified in the following areas: (Sachs 2005:283; Brouwers and Khoapa 2005:22)

i) Health – new preventive and diagnostic measures for diseases specific to tropical countries including TB, HIV/AIDS, and malaria and other tropical diseases

ii) Tropical agriculture – new seed varieties (green revolution model), water management techniques, and soil management techniques

iii) Energy systems – special technologies for off grid power, renewable energy sources (for example solar energy, wind energy), improved batteries, and low watt illumination

iv) Climatic changes research - researching and coping with climatic changes, forecasting and seasonal variations, with a view to more accurate predictions and adjustments

v) Water conservation – improved technologies for water harvesting, desalination, small scale irrigation, and improved management of underground water resources. The importance of water management will increase because of increasing population and climatic changes.

vi) Sustainable management of ecosystems: fragile ecosystems around the world (coral reefs, mangrove swamps, fisheries, rain forests, river sources, desertification, biodiversity etc) are being destroyed with dire consequences. Poor communities do not have the technical capacity to monitor changes or to respond in an effective and sustainable manner.

vii) New approaches to socio economic development and the quality of life

viii) Poverty alleviation – an assessment of effectiveness of various strategies to address poverty, and participation of various groups in society in poverty eradication programmes.

ix) Health and behaviour change – monitoring of factors which support behaviour change in relation to health and development issues in society.

x) Education, knowledge management and development – improvement of education in relation to development, evaluating and strengthening education systems, knowledge management, and innovative strategies to create employment.

However most developing countries find it difficult to invest in research and development , at times this means many of their scientists migrate to follow the better opportunities abroad (Sachs 2005). At present poor countries have 37 per cent of the worlds population and 11 percent of the worlds GDP but contribute less than 1 percent of the US registered patents taken out by inventors in 2000. The top 20 countries accounted for 98 per cent of all the patents. This has created the innovation gap which allow the rich countries to move forward to more innovation, while the poor cant get a foothold on the innovation ladder (World Bank 98, Sachs 2005).

Even when countries are not inventors of technology, they can benefit through importation of technology and its diffusion through better knowledge sharing strategies within the country (World Bank 1998). Importation of innovations through: consumer goods, capital imports, FDI, textbooks, reverse engineering, conferences, and of course theft. However if a country is too poor such purchases may be difficult if not impossible. South Asia development was kick started by success in attracting foreign investment of high technology enterprises who served to introduce innovations into the region.

There are other forms of knowledge and innovation transfer which are mainly concerned with organization matters to allow society to better confront problems it faces. Examples of knowledge transfer which fall into this category include: Setting up NGOs which drive the development process forward modeled on those found in other countries which have

worked very well e.g. Bangladesh Rural Advancement Committee (BRAC) an NGO which has done wonders in that country to uplift the state of the urban and rural poor. Bangladesh also offers another interesting innovation which could be adapted in Africa in the form of a micro-finance system for the poor in the form of the Grameen Bank, which has successfully addressed the capital formation for the rural and urban poor so that they can start small scale commercial activities and other micro businesses. The system works by lending a group rather than individuals so that repayment is the responsibility of the group. The Grameen Telecom program is another interesting innovation where a woman or man borrows to buy a cellphone which is used by the whole village and charges a small amount to customers. The Grameen Telecom program has been able to build a customer base of over a million in Rural Bangladesh and introduced good communication to the rural poor. There are many more innovations such as these described here – they need to be written in the local language so that individuals and communities can have access to such information to start similar innovations in their own communities to bring about development.

One aspect of innovation which is not always visible is creativity in society. Creativity based on opportunities provided by knowledge management and technology and new ways of thinking pave the way for an information and knowledge based society (Nonaka 1998). Kaariainen (205) maintains that the creation of a creative information and knowledge economy requires:

> " the creative economy needs investment in education and training. The means, that the quality of basic education must be improved and creative learning environments must be developed at all levels of education and training. In an information society, learning continues through out life, schools should, therefore, not only distribute information but build self-confidence and social skills, and help students to identify their talents and creative passions. The challenge of life long learning in the information society is that people must learn to learn (and unlearn). More attention needs to be paid to matters related to entrepreneurship at all levels of education."

Building inclusive societies should be the aim of an innovation system which has roots in different parts of the country. One of the agenda of the recent World Information Society conference was the digital divide, thus it would be terribly hypocritical if developing countries were to move towards an information society at the same time perpetuating digital divides within the borders of their own states. What is required are explicit policies which include equal access to knowledge and technologies for the whole nation so that the whole population and different parts of the population are part of the transition to a knowledge driven economy.

One source of innovation should be the cultural identity of people and their indigenous knowledge (tacit knowledge). The experience of Finland shows that a strong national cultural identity provides a platform to build technological capacity and develop social experimentation. She concludes that "national and cultural identities are important sources of meaning and value, but only on condition that people and countries are engaged in multicultural dialogue" (Kaariainen 2005:5).

5.3 KNOWLEDGE AND THE EDUCATION SECTOR

KM is quite important to the education sector partly because there are several point of intersection between the two. The strengthening of knowledge management and sharing is dependent on learning at organization and national levels in order to meet the goals of the institutions or the nation. As noted in this website:

> "knowledge and learning also embodies a value system – an orientation of undertaking work that carries a democratic principle that all humans should be valued on their own terms, as should the knowledge they carry and they all should be given the opportunity to realize their potential as individual and as a member of a team or organization (KIT Website, 2004)

When reviewing knowledge management in the context of education, we can categorise the education sector in terms of two levels i.e. the formal education sector, and the non formal/life long learning education sector.

The formal education sector operates at both lower and higher levels. Primary and secondary school, for example, requires access to adequate information resources (school libraries, teacher resource centres, and public libraries) for both the pupils and their teachers. Adequate access to information resources help to ensure that learning is done in a way that is not dominated by rote learning but offers opportunities for genuine independent and creative learning. To be able to cope with the demands of a knowledge society countries need to reform education curriculums, so that there is a balance between science and technological studies and the social and human sciences studies. These two branches of education should be given equal importance on a 50 -50% basis. Such an education system ensures that lopsided systems of education are avoided, and there will be enough technicians and engineers in future. Access to ICT and the Internet can ensure that knowledge sharing takes place between teachers, pupils and education authorities irregardless of where they are, or time of day or night. Dedicated websites can be created which provide content mirroring the curriculum, examples of exercises, syllabi, and text book summaries. Given the digital divide, poorly supported school and public libraries, there is still a lot that needs to be done to make education interesting and exciting for the population of pupils, teachers, life long learners and education administrators.

The problems that affect education at the lower levels are also found in the higher education sector of most African countries. There is a need for educational innovations which are now being practiced in the fast developing countries of East Asia and other continents if Africa is not to be left behind.

As shown in the preceding discussions, countries look towards advancements in technology and science as the source of a breakthrough towards a knowledge economy and in most cases look towards their universities to produce new knowledge through research and development as well as consultancy projects sponsored through both public and private funding (Ryu 1998). Apart from research and consultancy, universities are also active in teaching and curriculum delivery, as well as community service. Access to knowledge is vital for researchers and consultants in

academic institutions to avoid "rediscovering the wheel" which happens when one has no access to the latest knowledge in their specialization.

In the context of knowledge management, some of the issues found in lower levels of education are also present in the higher education sector. Hsiao (2005) writing about Chinese higher education sector noted that it urgently required new teaching methods and reforms to overhaul the curriculum, to replace rote learning, and give students more responsibility for their own education. She calls for a system of education that allows students to put together their courses across the university to reflect their career aspirations rather than a rigid system where everything is prescribed for the student. She argues the focus of education must be creative and inquisitive based to replace rote learning. Rote learning leads to students cramming only to spit the information back on tests and exams. According to her this is the only way to move learning to life long learning mode and to make students learn to make critical decisions and open up to change.

Similar calls have come from India, for example, Josh and Murthy (2004) have called for a qualitative expansion of education and an end to the one way delivery of knowledge to make it more participatory and reciprocal. Both Josh and Murthy (2004) believe that education must consist of "exploratory processes that allow the learner to make full use of his or her own multiple cognitive maps. The students mutually construct their learning environments, which grow in the learning process "

While we can debate the relevance of the type of education advocated by the two authors there are few who will not agree that rote learning, and learning for the short term goal of passing examinations should be reviewed to include more life long and creative learning strategies. Similar problems face our education systems at both lower and higher levels. The role of knowledge management is vital for such education to succeed where the students have a responsibility to learn how to learn rather than cramming a set of facts. Equally important is the role of knowledge transfer for education to flourish so as to create the knowledge base required for countries to improve on the education process. Although there are strong academic libraries in the sub region, we have to be concerned that the state of school libraries and resource centres, and public libraries are not very

strong in the delivery of educational information to the education sector and this is a vital building block for improving the education sectors performance ands life long learning

5.4 KNOWLEDGE FOR IMPROVEMENT OF THE AGRICULTURAL SECTOR

Agriculture plays an important role in development of most African countries. In a country such as Tanzania, for example, according to recent report by the country's Prime Minister, the Government has set out to improve the agriculture sector because "the sector contributes between 45 and 50 per cent to the national gross domestic product (GDP). Tanzania has 94 million hectares of arable land, 44 million hectares of which are good for farming and 50 million hectares suitable for livestock rearing. However, only 10 million hectares are under cultivation. He was concerned; however, that even the 10 million hectares are not exploited fully (Lowassa, Daily News, 2006). The significance of the agriculture sector to development increases further because it also provides a livelihood to between 70 and 80 percent of the population of most African countries.

One Key weakness of the agriculture sector is the poor transfer of knowledge to farmers (and other stakeholders) by research and innovation centres. It is estimated for example that the productivity in agriculture in most of Africa, is 10 times higher for crop production in experimental research centres than the productivity of farmers just outside the gates of the centres. The problem is that the new knowledge being developed is inefficiently delivered because, often, the research centres act as silos for hoarding knowledge rather than sharing their agricultural knowledge with farmers. Mlaki (2005) states that because of the knowledge gap in Tanzania, is shown by high production of 8 tons of maize per hector in a research environment, while a peasant farmer produces only 2 tons of maize per hector. It is clear therefore that to turn around the productivity of the agriculture sector in a way that several African countries are planning to do, requires several KM strategies:

i) Transfer massive innovative knowledge to farmers using the Green Revolution model which was successfully adopted by Mexico and Asian countries e.g. India, Philippines, China to promote high yield staple crop varieties. Such a strategy would ensure that the high yield varieties which grow faster, with the application of fertilizer and irrigation, if need be, can increase the income of farmers to 10 times the present level. The Green revolution provided Asian countries their first break through in economic development and Africa should adapt the same model (World Bank 1998). This strategy would require more funding of agricultural research to adapt knowledge from Asian countries, and a complete overhaul of the information and knowledge sharing system and strategies between farmers, research centres, infomediaries and other supporting institutions in a country to ensure better return to investments made in research and development.

ii) A useful suggestion made on knowledge management application to the agricultural sector is to use knowledge to process agricultural products rather than selling them in a raw or semi raw state. UNIDO has concluded that most developing countries do not pay sufficient attention to the value chain through which agricultural commodities and products reach the final consumers. This neglect leads to enormous losses of value through value added and employment opportunities. It is noted that 98 per cent of agricultural production in developed countries undergoes industrial processing, but barely 30 per cent is processed in developing countries (UNIDO 2004). This is thus another area where the massive transfer of knowledge and technologies to develop an agro-industrial base would lead to employment creation and higher earning though the sale of processed agricultural products rather than the sale of raw materials to overseas and regional markets.

5.5 KNOWLEDGE MANAGEMENT IN SMALL, MEDIUM AND MICRO-ENTERPRISES (SMMES)

SMMEs are essential actors in the development process because they play a leading role in job creation, income generation, and value addition through processing local products in the agricultural and natural resources

sector. UNIDO (2004) concludes that SMMEs provide a seedbed for developing and testing entrepreneurial talent. The later being an important cultural foundation for risk taking, technological and managerial innovations, and the adaptation and diffusion of available technologies. As with other sectors of development, knowledge is an important source of both competitive advantage and survival in SMMEs.

The importance of SMMEs in bringing about equitable development among different regions of country as each Local Government Authority can be charged with the responsibility to promote SMMEs development through the following actions:

i) Provision of information and direct assistance

ii) Bringing local small business together for meetings to discuss the legal and regulatory environment

iii) Acting as a catalyst and facilitator in identifying specific reform proposals and opportunities

iv) Advocating for local entrepreneurs on specific reform proposals

v) Improving reporting and other regulatory procedures that fall under the control of the Local Authority

vi) Developing a local database on small business activity in the area

vii) Introducing specific policies and regulations that promote local small businesses (e.g local purchasing policies) (White 1997:7)

Many of these Regional and Local Authority responsibilities have a clear information and knowledge dimension to them.

Possibly because of the low levels of education among SMMEs operators, the use of information and knowledge as an economic resource is still at a low level in most African countries (Mchombu 2001). Thomas (1995) has elaborated on the need for information and knowledge among the existing SMMEs in Namibia by stating that:

> "the lack of knowledge by SMMEs about market opportunities, prices, quality needs, market trends, the nature of competition etc is at the root of much of what goes through as "lack of market access". One way to address this problem is to improve the dissemination of such information. This can happen through private sector sources, like better newspaper coverage of these issues, a wider network of marketing consultants, stronger emphasis on marketing related topics in training courses aimed as SMMEs, and ……other ways"

Looking at the same issue information and knowledge needs for SMMEs from a different perspective, Levy et al (2003) have analysed the skills required by the SMMEs to be able to manage knowledge and information to gain success and become sustainable in a competitive and globalised world. According to the above mentioned authors, SMMEs are unable to obtain sustainable competitive advantage from knowledge and innovation and they need the following skills in knowledge management: i) they need to have skills in the use of both tacit and explicit knowledge for the purposes of day to day operations so they can invest in an information system rather than simply regard it as a cost ii) how to gather and use customer information for strategic purposes iii) use of information for efficiency and financial control iv) use of information to improve and coordinate on customer care v) to know how to use information to collaborate and exchange information with customers through use of systems such as email, postal mail marketing etc. vi) use of knowledge to manage business growth and identify new opportunities for the SMMEs thus to reposition the business into new areas of operation. Levy et al (2003) concludes that most of the skills that SMMEs have are in the area of using information and knowledge to achieve efficiency through basic record keeping but there are few internal databases to get information needed for their business strategies.

UNIDO (2004) diagnosis indicates that successful SMMEs are those which can apply new knowledge and innovation to improve productivity and facilitate market access. In most developing countries the sector suffers from failures in the provision of business information, which is often

provided by stand alone institutions, and is difficult to access, limited in scope, and not provided in an integrated manner. SMMEs according to UNIDO, need tailor made information solutions, i.e business information services that assess, verify and apply information to a specific business problem.

The recommendation of UNIDO (2004) and White (1997) and others is to set up business information services programme which bring together information from different sources and transform them into solutions including ICT, and e-business support, in integrated networks that link all relevant national and international sources into a "One Stop Shop (OSS)".

The experience of Asian countries, however, show that success in SMMEs for the internal market is just the first step to creating SMMEs which can compete globally. Thus from the cheap assembly shop shoes, textiles, and lower end electronic products, countries such China and India have moved on towards higher end production in SMMEs based on the central role of knowledge based economies: (Hsiao 2005)

> "Now, it is laying the groundwork to become a global power in much more sophisticated, technology-intensive industries that also demand tons of capital. Billions of dollars are flowing into auto, steel, chemical, and high-tech electronics plants. Driving this massive spending push is voracious domestic demand for all manner of goods as well as a big shift by multinationals to manufacture in China. As a result, China is rapidly becoming more self-sufficient in key materials and components, and setting the stage to be a major exporter of high-end products"

These two countries have used other international programmes such as AGOA (the) ACP-EU programmes for developing countries strategically to take off in business development. These two programmes and others like them have produced vast information which needs to be packaged in a simple and integrated manner for the SMMEs to exploit fully.

Given the theme of our meeting, it is possible for public libraries and specialized information centres to work closely with local authorities and chambers of commerce to provide SMMEs information and knowledge support in the respective areas, and network closely with both the relevant Government Ministries and International Organizations to achieve this goal. This new business information services to cater for SMMEs would also include providing tourism information in the local authority area as well as district development information services based on the central government development plans of different ministries. Such a documentation centre at the district level would go some way to address the information gap at district level one finds in most African countries.

5.6 KM IN THE HEALTH SECTOR

KM is as vital to the health sector as it is to other development sectors. Health care information and knowledge is needed to deliver the safest and most effective healthcare possible with available resources (Pakenham-Walsh 2000). It has been pointed out by Powell (2003) that by applying knowledge management, a country can achieve the following goals: i) efficiency – which refers to helping people to quickly find the information they need, thus saving time and avoiding duplicating the efforts of others ii)effectiveness – refers to making people aware of lessons learned from research and experience and enabling them to adapt "best practices" iii) creativity – refers to exposing people to new ideas and approaches iv) empowerment – refers to giving workers and individuals at different levels knowledge and confidence to make well informed decisions on health issues.

When reviewing knowledge management in the context of the health sector we can categorise the sector into two broad target groups i.e. health workers (doctors, researchers, other medical staff, and health managers). Second category is members of the public who have to take responsibility for their health by preventing the spread of infectious and preventable diseases or following closely advice from health personnel.

After reviewing the health information situation in developing countries, Pakenham-Walsh (2000) conclude that health care workers have little or no

access to practical information. She noted that access to health information support the generation of new knowledge and solutions based on the realities of the country, and help in the critical interpretation to new information accessed through ICTs and health information resource centres.

Godlee et al (2004) argue that a knowledge based approach to health care among health workers is hampered by several factors: i) the poor state of ICT infrastructure to access the latest health information in most countries ii) lack of awareness of what information is available iii) lack of relevance of available information (in terms of scope, style, language, and format) iv) lack of time and incentives to use information v) lack of interpretation skills. One could add lack of a knowledge sharing culture among health workers as an important problem preventing a knowledge based approach to health care.

There have been several on going initiatives to address access to health information. The WHO has initiated the HINARI literature service, setting up of electronic and virtual libraries (http://www.bvsalud.org), publishing and distribution of health newsletters (http://www.healthlink.org.uk), and setting up of small scale health libraries, for example, WHOs Blue Trunk Library, for district hospitals and other frontline health workers. The Blue Trunk Library provides selected essential health information materials. Despite these initiatives, there is still a lot that needs to be done to ensure the knowledge based approach to health care in most of Africa.

Turning now to members of the public, health information is equally important to bring about sustainable behaviour change in preventable and infectious diseases. The outbreak of HIV/AIDS has highlighted the fact that members of the public need to also to have access to adequate information to change behaviour which is the best way to prevent the spread of HIV/AIDS which still has no cure. In the fight against HIV/AIDS, knowledge communication is required for improving the knowledge of sexually active members of the population to change attitudes, and develop the ability to protect themselves by adopting new practices e.g. condom use, abstinence, and being faithful to one partner (ABC model). In cases where infection has already taken place,

information and knowledge play a key role to empower the infected and affected individuals to live positively through better nutrition, health regime, and how to take the antiretroviral medication if available. Some of the information comes from health workers, the education system and NGOs. However, there is also considerable tacit knowledge from those who have experienced the pandemic (and other health problems) first hand and can share their experiences and insights through support groups. The fact that information on HIV/AIDS prevention does not flow freely because of stigmatization, cultural barriers to sharing sexual information across age groups, fear, and gender barriers means there is a lot of work still required to be done on how to create and design effective information and knowledge system to address the HIV/AIDS pandemic.

In addition to HIV/AIDS, there other preventable diseases such as malaria, tuberculosis, and various diseases which afflict children such as polio, whooping cough, tetanus, measles, diarrhea, smallpox and others. All these can be controlled or eradicated out right if the immunization plans are followed and the parents of a child use the knowledge that exists on how to bring up children. Sharing this information widely is done through campaigns in the media and interpersonal communication.

Access to basic health information can be improved by designing small scale health information resource centres at the workplace, public, school and other types of libraries. Facilitating knowledge sharing through public discussion forums is also very important to translate information into attitudinal change, action and new health practices. It is also vital to work closely with both international, regional and national organizations such as WHO, Health Net, National AIDS Control Programmes, and organizations which represent the affected and infected.

6. CHALLENGES FOR AFRICAN INFORMATION SCIENCES SPECIALISTS IN THE ERA OF KNOWLEDGE MANAGEMENT

We have discussed Africa's need to harness information and knowledge management in order to make a successful transition to the 21st Century which is regarded as the knowledge revolution era. This section identifies

six key challenges which information science specialists face if they are to reformulate their practices and become part of the transformation process. I believe it can be done if we become part of the change process rather than an obstacle to change.

1) Repositioning of information specialists in the knowledge pyramid. One of the challenge to information specialists lies in the concept of the knowledge pyramid which holds that data is processed to information from which people make their own sense to turn it into knowledge. Libraries, records and other information centers thus need to facilitate the process of converting information to knowledge. This process can be facilitated by providing access to adequate information resources but also by creating an environment which permit face to face forums and network formation to discuss and debate issues of concern to the population. The role of information specialists becomes that of infomediaries managing the process of turning information into knowledge for action. A key challenge is to train trainers in information centres who can train communities and organizations in the use and sharing of knowledge for development to build collective intelligence. The older concepts of information literacy and information retrieval now need to be revisited to include knowledge management literacy so as to keep up with the knowledge revolution. The new revolution calls for the use of knowledge as a strategic resource and behaviour change among people so that hoarding of information is replaced by sharing and communication of both tacit and explicit information to empower organizations and communities to meet development challenges.

2) Knowledge sharing, communication and information delivery. Information sharing is vital to ensure that information does not stay in silos isolated from the day to day problems facing society. Without an active communication programme in place information becomes static and stays in the same place and does not add value to the production processes in society. Thus the role of information centers must also include clear information delivery strategies to deliver information in appropriate formats, languages and subject matter. Delivery strategies should use multiple communication methods (including word of

mouth, visual materials, drama, games and cultural interaction, and networks) to reach out to the whole community without excluding some groups in society such as women, youth, and minorities. An important challenge is to foster a culture of knowledge sharing among the community members to overcome information hoarding tendencies. This would also include addressing the problem of the organizations and communities not knowing what they know, and at other times, not knowing what they do not know. It is normal for disempowered communities (and third world organizations) to undervalue the vast resources of knowledge among its members. The belief among the poor is that those who come from outside the community have superior knowledge.

3) Assessing and mixing technology options. ICTs currently enable one to exchange and communicate information with anyone in the world any time. ICTs are also are developing very fast and every few months internet access, international telephone service (internet telephony or VOIP), wireless communications are becoming better and cheaper. However as stakeholders in technology use, we need to assess technologies, mix and match them to achieve the best results. Other technologies such as cell phones, CD ROM, DVD, radio, video, films, posters in some cases might be more appropriate and more accessible than the latest technologies. Above all the information content use behaviour should drive the revolution and we should not fall to the trap of technology determinism.

4) Designing demand driven information systems. Most information centers were designed to build collections representing the subject profiles of the information collection developers. However the challenge now given scarcity of resources is to design information and knowledge systems that are demand driven and accurately reflect demand for information. Through a combination of user needs studies and national sectoral knowledge needs assessment we should be in much better position to design a national information and knowledge systems that reflects the vision and development aspirations of the country and its organizations. This should include investigating the existing information and knowledge system (IKS) and what exists in

the system so as to identify gaps and ways of strengthening the information and knowledge system that stakeholders already have in place rather than try to replace it with an externally driven system. Ultimately what is needed is also clear systems of monitoring and evaluation to be put in place to demonstrate the impact information and knowledge centers can make in social change.

5) Local content creation. In most cases information centres in Africa are known for the global content they offer rather than the local language content, which is more relevant to the local situation. Certainly one area that needs to be included in the information services reform is inclusion of indigenous knowledge of the community which is the knowledge that is part of the culture and heritage of the community and nation. The challenge here is for information centres to learn how to produce their own information products and repackage information which is rich in local content rather than perpetuating various forms of intellectual and cultural dependence. A related challenge concerns the need to step up digital content creation to offer online services to users 24 hours and seven days a week.

6) Lobbying to influence policy making. Library and Information Associations need to be better organized to influence policy and voice their opinions when policy issues related to information and knowledge management are being tabled in their country or international forums. The recent World Information Society was one such instance. It was dominated by computer and telecommunications specialists and only later did they realize that the driving force of what they were doing was information and knowledge not the ICT gadgets. Even the concept of WIS was a misconception it should have been the World Knowledge Society (WKS) conference. Most countries have formulated ICT policies which masquerade as information and knowledge management policies – such polices need to be challenged and modified and information specialists have a lot of lobbying ahead of them to achieve the goal of policy reformulation.

REFERENCES

Alhassan, Amin (2004) Development Communication Policy and Economic Fundamentalism in Ghana. Tampere (Finland): Tampere University Press (PhD Dissertation)

Annan, Kofi (2001) United Nations Information Technology Task Force. (Press Release SG/SM/8037/DEV/2354 20 November 2001)

Bell, D (1973) The coming post-industrial society. A venture in social forecasting. New York: Basic Books

Blair, Tony, Right Hon.(2000) Speech on Knowledge Economy, 11 September, (http://www.opengov.uk)

Brouwers, R and Khoapa, B (2005) South African Netherlands Research Programme on alternatives in Development. Zakari: Buitenlandse,

Davenport, T and Prusak, L (1998) Working Knowledge: How organizations manage what they know. Boston: Harvard Business School Press

Dick, A (2002) The philosophy, politics and economics of information. Pretoria: UNISA

Drucker, Peter. (1993) Post-capitalist society. New York: Harper and Collins

eknowledgecenter.com website (2005). Introduction to Knowledge Management. (http://www.eknowledgecenter.com accessed 20/1/2006)

Feather ,J and Sturges, P (eds) (2003) International Encyclopedia of Information and Library Science, 2nd edition, London: Routledge

Hsiao, Julia (2005) Making waves in Guangdong. *Business Week Online*, August 2005.

(http://www.businesweek.com/magazine/content/05_34/b3948489.htm) Accessed 30/3/2006

Josh, J and Murthy, I (2004) Effect of ICT on modern education. KIT Website (2004) Http://www. kit.nl (accessed 25/3/2006)

Levy, M et al (2003) SMEs, co-opetition and knowledge sharing: the role of information systems. In: European Journal of Information Systems, vol 12, pp3-17

Lowassa, Edward (2006) Motion to close the 3rd session of Parliament in Dodoma. Daily news, April 8

Kaariainen, M (2005) The Making of an Information Society – The Finnish Experience. Ottawa: IDRC (http://www.idrc.ca/en/ev-93069-201-1-DO_TOPIC.html accessed 27/1/2006)

Marco. D (2003) A meta-data repository is the key to knowledge management. In: http://www.tdan.com/i024fe02.htm (access date 10.3.05)

Mbeki, Thabo (2002) Africa Define yourself. Cape Town: Tafelberg Publishers Ltd.

Mchombu, C. M. (2000) Information needs of women in small. businesses in Botswana. International. Information and Library Review vol. 32 no.1

Menou, M. and Mchombu, K. J. (2004) Os Profissionais da Informacao em comunidades desfavorecidas. Atuacao professional na area de informacao. Sao Paulo: Editora Polis Ltda

Mkandawire, Thandika Saludo, Charles (1999) Our Continent Our Future. Trenton, NJ and Asmara, Eriteria: Africa World Press

Mlaki, T. (2005) Personal communication. 31 December 2005 and 21 April 2006.

Mosimege, Mogege (2005) Indigenous Knowledge Systems. Presentation given at "*Information as a Strategic Resource for Africa's Development*",

Workshop for National Libraries in the Southern African Development Community (SADC), 16-18 March, 2005. Willow Park Conference Centre, Bredell, Johannesburg

Namibian Government *(2003) Namibia Vision (2030*) http://www.npc.gov/vision/vision2030.htm

Nonaka, Ikujiro (1998) The Knowledge Creating Company. In: Harvard Business Review on Knowledge Management. Boson, MA: Harvard Business School Publishing

Powell, M (2003) Information management for development organizations, 2nd ed. Oxford: Oxfam, GB.

Prabhala, Achal (2005) Intellectual property, trade agreements, and WIPO: Access to learning materials in Southern Africa. Presentation given at "*Information as a Strategic Resource for Africa's Development*", Workshop for National Libraries in the Southern African Development Community (SADC), 16-18 March, 2005. Willow Park Conference Centre, Bredell, Johannesburg

Ramalingam, B (2005) Implementing knowledge strategies: Lessons from international agencies. London: Overseas Development Institute

Rogers, E (1995) Diffusion of innovations, 4th edition. New York: The Free Press

Ryu, Mikyung (1998) A muted voice in academe: the Korean version of entrepreneurial scholarship. Higher Education, Vol 35, p. 9-26

Sachs, J (2005) The End of Poverty: How can we make it happen in our lifetime. London: Penguin

Salomon, l. M and Engel, P (1997) Networking for innovation: a participatory actor-oriented methodology. Amsterdam: Royal Tropical Institute (KIT)

Shifflet, Mark (2001) Information Sector Growth in Market and Non Market Economies: A Comparative Case Study. In: *The Information Society*, vol. 17, p165-177

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)

Stiglitz, Joseph, Public Policy for a Knowledge Economy, London, UK, 27 January, 1999,p.4

Thomas, Wolfgang (1995) Promoting Business Linkages to Strengthen Small Business Thomas in Namibia: Lessons from South Africa Windhoek: Friedrich Ebert Stiftung – Namibia Office (SME Development Discussion Paper no.2)

United Nations Development Programme. Millennium Development goals. (http://www.undo.org/mdg accessed 23/5/2005

United Nations Development Organization (2004) Services Module 5: Agro-Industries – over view. http://www.unido.org/doc/5070 (accessed 26/3/2006

Vaagan, R (2004) Climbing the knowledge pyramid: R&D programs at Oslo University College. In: Nord I&D, Knowledge and Change

White, Simon (1997) Strategies for Small Business Development: A Guide for Regional and Local Authorities. Windhoek: Namibia Chamber of Commerce and Industry and Friedrich Ebert Stiftung

Whyte, Anne (2000) Landscape Analysis of Donor Trends in International Development. Human and Institutional Capacity Building. A Rockfeller Foundation Series, Issue no 2, http://www.rockfound/Documents/707/hicb_whyte_donortrends.pdf) accessed 23/3/2005

World Bank (1998) Knowledge for Development. Washington: World Bank (http://www.org/wdr98/contents.htm accessed 8/5/2005)

POLITICS OF INFORMATION AND KNOWLEDGE IN AFRICA: THE STRUGGLE FOR AN INFORMATION INCLUSIVE SOCIETY IN A GLOBALISED WORLD

Shiraz Durrani

Abstract

The article looks at contradictions facing libraries in Africa where the information and developmental needs of workers and peasants remain largely unmet, while libraries tend to meet the needs of a minority.

It maintains that the model of public libraries remains the same as the one introduced by the colonial powers and the opportunity at independence for bringing about a change to a people-orientated service was lost. The profession remains aloof from the political and social struggles of communities, thus alienating itself from the very people it seeks to serve. The article sees opportunities now for change in some positive aspects of globalisation and in developments in information and communications technology. The rise of China can create new possibilities for change.

It calls for information professionals to be activists in information as well as in social and political struggles of people. They need to work with communities in partnership with other service providers. It makes the point that the profession is not neutral if it supports the status quo by remaining silent on social and political issues.

The article calls for action to put ideas and new vision into practice and gives some details about the Progressive African Library and Information Activists' Group (PALIAct) proposal which aims to create an alternative vision, strategy and practice of a people-orientated service in active partnership with communities and service providers.

The article calls upon countries which benefited from African slave trade to support initiatives such as PALIAct as a small way of acknowledging their debt to Africa. It ends by providing elements for an "African activist information programme", including suggestions for leadership development, collection building and "liberating the mind" collections.

INFORMATION IN AFRICA

"Silence in the library"

Perhaps the best way to understand the contradictions facing libraries in Africa today is through a story. It is only when social contradictions are accepted and understood that attempts can be made to resolve them. And resolve them we must, if libraries and information are to play their part in creating a new Africa where there is justice, democracy and development for all. The story is "silence in the library":

> Nyanjiru wakes up at 4 am; a water debe on her head, she walks for an hour and a half to the nearest stream. Then she climbs back from the river to her home, picking dry wood on the way for fire; she arrives home three hours later to start the day's other work: crying children to be calmed with bits of left over food, chicken to be fed and watered; then to start digging her half acre shamba in the hot, burning sun. This is the daily routine for a peasant.
>
> And then there is Kamau. Kamau pats his dogs fondly as they surround his new Volvo. This is his daily ritual. He realises that the gates are not open yet and hoots loudly. Where is Mutua? Does he not know that today is the library board meeting and he has to report early? They are to discuss library regulations. He has prepared a long list of "don'ts". As Mutua opens the gates, Kamau speeds out, the silent sound of the Volvo soothing his mind. He starts thinking about library rules. Yes, users must be controlled. Only last week he found a fellow eating mandazi in the library. How can that be allowed? Kamau had him thrown out. The first rule is going to be about eating in the library. And then of course "Silence: silence in the library"
>
> Kamau feels happy as he enters the library parking. "Silence Please, Silence in the Library"; "No eating in the library"... In such an atmosphere of threats works the modern librarian.

> Inside the stone walls of the library, in total peace and calm among the well preserved volumes, he is oblivious to the ruin and chaos of hunger, starvation and mass exploitation outside. The contrasting lives of Nyanjiru and Kamau can be found anywhere in Africa. Their activities are taking place within miles of each other and on the same day. Yet the two are so removed from each other that they may easily be on different planets or in different historical ages.
>
> The library is a concrete structure inaccessible to Nyanjiru, and Nyanjiru as a library user is unacceptable to the librarians. For Nyanjiru there is no time to waste, no compromises to be made. All her labour and thoughts are to satisfy her family's basic needs: food, clothing and shelter. Anything that helps her in this work, she accepts with open arms and mind. Anything that prevents her from acquiring what she needs, she will fight. Her information needs are clear - she wants information which will help her to support and protect her family.
>
> On the other hand is the library service - set up during colonial days, with a colonial vision, through 'assistance' from a colonial, neo-colonial 'mother' country. A mother whose very touch brings death. "Silence please; please, silence in the library".
>
> Silence, in spite of Nyanjiru's dying children; silence, in spite of Nyanjiru's twenty hour working day; silence, even though Nyanjiru's hard labour fails to fill her family's stomachs.
>
> Nyanjiru knows no library. No library wants to know Nyanjiru.

The story of Nyanjiru and Kamau highlights the key need in Africa today: development – development of people, resources, industries, agriculture, art, culture… But "development" does not take place in a vacuum. In order to develop, people and societies need relevant information and knowledge in a number of fields such as science, history, geography, history, technology. Yet, under capitalism, information and knowledge and the very

process of learning and education have become commodities to be bought and sold on the "open" market. Those without resources to purchase information end up having no access to it. The irony is that even those who produce information often have no access to that information which is taken from them, copyrighted, patented, repackaged, and sold at prices which the original producers cannot afford.

Thus peoples, countries and societies have been forced into "un-development" and inequality by the economic policies and practices of international finance and transnational corporations using the mechanisms of international financial and political control, such as the IMF, WTO and the UN.

But are these issues that should concern the library profession? Some say it is not our "business" to get involved in "politics" as we are professional people, not politicians. But if we accept that Africa needs a second war of liberation – economic liberation this time – then we need to accept that no liberation can be successful without appropriate information vision, strategy and tactics as well as trained information activists. This is the lesson from the major revolutions in the world. This is also the lesson from Africa's long history of wars against colonialism and imperialism. And this is where we find a relevant social role for African librarians and information professionals and activists today.

The first requirement for liberation from an inequality imposed on Africa is access to information about the real reasons for poverty. Yet the information and communication systems created by the departing colonial powers were not expected or equipped to put this information before people. They were merely tools for a small, rich elite to impose its world outlook and culture on the poor and exploited majority of people. Post-independence systems and policies have made no fundamental change in this colonial-inspired information framework. We urgently need to seek a role for information profession that is relevant to the needs of Africa in the 21st century.

An important task for Africa is to document fully the achievements, successes and failures of the anti-colonial struggles in Africa. Information

about these can arm us for current and future struggles. This has not been fully documented. But if the history of African struggle for political and economic liberation is poorly documented, the struggle for African information liberation is even less well documented and understood. It is not a matter of general knowledge, for example, that during the Mau Mau war of liberation in Kenya, the combatants controlled over 50 newspapers and many printing presses; they set up libraries in liberated territories in forests in cities, ran an efficient information collection system, and created their own distribution network, using "traditional" and modern methods available to them. This complex communications system was created and managed by activist librarians and information workers who were active not only in the information field, but in the larger political and social fields as well. Their experience, if fully documented, can help us find a relevant role for the information professional in Africa today.

And yet today, we tend to follow blindly the "Western" model of public library services which actively seeks to remove politics from information theories and practices. This model has not been successful in the "West" itself to provide information to all, particularly to those politely referred to as "socially excluded". Yet we in Africa have not fully challenged this situation. It is only by subjecting our current policies and practices to a vigorous challenge that new and relevant theories, policies and practices can emerge.

Opportunities for information liberation

Just as in the political field, so in the information field, there are major developments when social contradictions are at their sharpest. It is at such key points in history that opportunities arise for making revolutionary changes in the way information and politics are organised. Colonial Africa has had a number of opportunities to change its societies for the better and serve the needs of the majority of people. One such opportunity was in late nineteen fifties and early sixties which saw achievement of political independence in many countries. It was a time when foundations of the old colonial world were being destroyed and those of new free societies were being laid. Many activists had the vision of a society where all would have free access to information and knowledge created by the work of all. It was a

time of immense change and high hopes for a just, equitable future after decades of colonial oppression and exploitation. This was the time when people did influence events in a major way, underscoring what was said at the World Summit for Information Society (2003): it is "people who primarily form and shape societies, and information and communication societies are no exception".

But the opportunity at independence to challenge the very basis of social organisations such as libraries was lost. Library services continued to function on the same basis as under colonialism, targeting their services to the elite, although now this included some more people and became "multiracial". Class divisions, which formed the real divisions in the society, were deliberately played down, and racial, "tribal" and other "divisions" were brought into prominence. An information service operating in the real interest of people would have ensured that this "information blind-spot" was removed and the question of who the library actually serves would have been resolved in favour of the majority of working people. Thus an information service using resources from all but serving a few was developed. This situation has more or less continued until today.

But today, there is another possibility for change. Changes at a global level in the last 25 years now present Africa with another opportunity to make a fundamental shift in the way societies are organised – and in the way information services are organised. If managed correctly, we can make the transition to a people-orientated library service that did not take place at independence. Let us look at two major changes: globalisation and the rise of China.

Globalisation

An intensified corporate globalisation is the current phase of capitalism and imperialism. This has been made possible by rapid changes in information technologies. The collapse of USSR has left only one imperialist world power (USA) with global imperialist ambitions and resources to impose its will on the world. This has major political as well as economic implications for countries around the world, as evidenced by the invasion of Iraq by

USA in pursuit of oil and strategic advantage for profit-driven transnationals.

By its very definition, capitalism divides people along class lines. Working class people as a whole are historically excluded from enjoying wealth created by their labour. Hence capitalism creates a class that is automatically excluded from wealth, power, education and information. There has been a qualitative change in the process of social exclusion in the last quarter of this century on a global level. Castells (1998, p. 1) explains these changes as a "technological revolution, centred around information (which) has transformed the way we think, we produce, we consume, we trade, we manage, we communicate, we live, we die, we make war, and we make love: a dynamic global economy has been constituted around the planet, linking up valuable people and activities from all over the world, while switching off from the networks of the power and wealth, people and territories dubbed as irrelevant from the perspectives of dominant interests."

While this aggressive phase of capitalism resulted in increasing economic growth in some countries and regions, its own logic ensures that millions of people and large parts of the world remain excluded from growth. Many areas have thus experienced a decline in national product as capital moves out of less profitable countries and regions. The social and economic consequences of this global search for profit inevitably leads to marginalising and excluding millions of people around the world. Africa is a prime example of such exclusion.

Castells (1999) explains the essence of corporate globalisation:

> …this is a brand of capitalism that is at the same time very old and fundamentally new. It is old because it appeals to relentless competition in the pursuit of profit, and because individual satisfaction (deferred or immediate) is its driving engine. But it is fundamentally new because it is tooled by new information and communication technologies that are at the root of new productivity sources, new organizational forms, and the construction of a global economy.

Thus, while developments in technologies and science make it possible for rapid changes to be made, Africa lags behind. Yet possibilities exist in the world today, and within Africa, to bring about major changes in the way our societies – and information services - are organised. Possibilities exist in Africa today to put information at the service of people so that they help them meet their real needs, and not for a (mostly foreign) elite to enrich itself on African labour and resources.

There are other aspects of globalisation and development of information technologies which affect the development of Africa.

Information society and knowledge economy in Africa

The term "Information Society" can be used to describe a society in which the "creation, distribution, and manipulation of information has become the most significant economic and cultural activity" (IBM Community Development Foundation, 1997)) which goes on to explain the terms further:

> An Information Society may be contrasted with societies in which the economic underpinning is primarily industrial or agricultural. The tools of the Information Society are computers and telecommunications. Progress in information technologies and communication is changing the way people lead their lives, how they work and do business, how they educate their children, study, carry out research, train themselves and how they are entertained.

Africa needs to make the shift from reliance on agricultural and industrial activities to a society based on knowledge. The term "Knowledge Economy" refers to using the generation and exploitation of knowledge as a predominant player in the creation of wealth. Matsuura (2005) gives a background of the emergence of the knowledge economy and looks at the process of turning information into knowledge:

> The scientific upheavals of the 20th century have brought about a third industrial revolution. This revolution, which has been accompanied by Globalization, has laid down the bases of a knowledge economy. Yet information is not knowledge; and the world information society will only fulfil its potential if it facilitates the emergence of pluralistic knowledge societies that include rather than exclude.
>
> There is a clear awareness today that the development of societies predicated on the sharing of knowledge is the best way of waging effective war on poverty and forestalling major health risks such as pandemics, of reducing the terrible loss of life caused by tsunamis and tropical storms, and of promoting sustainable human development. For new modes of development are today within our grasp: these are no longer based, as in the past, on "blood, sweat and tears", but rather on intelligence, the scientific and technological capacity to address problems, intellectual added value, and the expansion of services in all sectors of the economy.

These “new modes of development” appear to be far away from African shores. Yet it is possible to turn the new potential into reality by using existing visions and commitments as well experiences from other countries. The Vision of the Information Society, as summed up in World Summit on Information Society, Civil Society (2003) is the one that best serves African interests:

> We… declare our common desire and commitment to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights.

> We are aware that ICTs should be regarded as tools and not as an end in themselves. Under favourable conditions, these technologies can be a powerful instrument, increasing productivity, generating economic growth, job creation and employability and improving the quality of life of all. They can also promote dialogue among people, nations and civilizations.
>
> We are also fully aware that the benefits of the information technology revolution are today unevenly distributed between the developed and developing countries and within societies. We are fully committed to turning this digital divide into a digital opportunity for all, particularly for those who risk being left behind and being further marginalized.

The above declaration surely provides a powerful weapon at an ideological level. Other developments at a political level can also support Africa's demand for an equal share in the new information and knowledge world. The political, economic and ethical developments in the "non-Western" world provide a more relevant experience and example for Africa. On the one hand is the rapid rise of the BRIC countries (Brazil, Russia, India and China). On the other hand is the experience from the principled stand taken in Cuba, Venezuela and Bolivia which provides a real chance for improvement in the lives of working people. Both these are relevant models that Africa can use for real development. Changes in the information level cannot take place in a vacuum. It is changes at the economic and political level in these examples that provides the possibilities for change in the information field.

The rise of China

The rise of China as a major international economic and political power is rapidly changing our world today. Already it has become the sixth largest economy in the world and is likely soon to become the fourth. It has enormous potential for the future. The significance of the rise of China is not only at economic and political level, it has the potential for developing an entirely different moral framework for development, international relations and world outlook. Unlike previous super-powers which resorted

to occupation of land and subjugating people in order to satisfy their need for resources, China sets about developing mutually beneficial relations with countries such as Brazil, India and other "developing" countries so that there is mutual benefit. It seeks no colonies nor to enslave or colonise people. As Jacques (2005) explains:

> The past two or three years have marked a new moment in the global perception of China. There is suddenly a new awareness that encompasses both a recognition of China's economic transformation and an understanding that, because of its huge size and cohesive character, it will have a profound impact on the rest of the world, albeit in ways still only dimly understood… China has arrived and will increasingly shape our future, not just its own.

Africa has much to gain from developing relations with China in a way which benefits people of both continents. It will set a new standard of moral, economic and political relations between peoples and countries.

The rise of the BRIC countries (Brazil, Russia, India and China) as a whole provide a totally new global scene which can have tremendous impact on Africa. At an economic level, it challenges the monopoly of Western transnational companies to decide the terms of trade which have historically worked against Africa. Thus the objective condition for positive change has been set. It remains for Africa to take advantage of this positive development. But we do not have to look far for examples of how these global changes can be used in the interest of their people – there is an alternative way which increases social spending and turns away from free-market policies which have been imposed on Africa, causing increased poverty and stifling development.

There is an alternative

This alternative way of developing societies has been shown to work in Cuba, which, in spite of a USA-instigated blockade of over 40 years, is developing today at a highly enviable rate. Its GDP growth in 2005 was 11.8 percent – among the highest in the world. ("New Challenges and

Victories Ahead", 2006). As an example in just one field, Cuba has become a major bio-medical power. Marx, Gary (2006) sums up Cuba's achievements:

> Cuban scientists have produced a hepatitis B vaccine sold in more than 30 countries and streptokinase, a potent enzyme that dissolves blood clots and improves the survival rate of heart attack victims. The country also makes recombinant interferon that strengthens the immune system of cancer patients and a meningitis B vaccine.
>
> In the pipeline are products ranging from an injection that closes ulcers and improves circulation in diabetics to vaccines against cholera and hepatitis C, according to Cuban officials.

Similar changes are taking place in Venezuela which is also following an alternative economic and political path to development of its people, using oil revenues to set up Universities, literacy and health care programmes for working people, and other social projects. Similarly, in Bolivia, major changes are expected once the new President, Evo Morales take office in January, 2006. What is perhaps more significant is that not only are these three countries taking the alternative path, but they are also developing an alternative support and co-operation structure among themselves and with other progressive countries. As O'Keefe (2005) says, "there is an alternative". He sums up the new situation:

> Today, global capitalism is being challenged most directly in Venezuela. Hugo Chavez's own discourse has sharpened dramatically against international capital in recent months and years. The Bolivarian leader has made repeated calls for the building of 'socialism for the 21st century'.
>
> The Bolivarian Revolution is carrying out a transformation of both the reality of Venezuela and of the global alignment of political forces. The gains of *el proceso* are preciously concrete, as seen in rising rates of literacy and education, mass expansion of health care services, land reform, new housing for

> the poor, and an explosion in cooperative worker co-managed enterprises. These reforms are part of a revolutionary process with a continental and global dynamic.

Such positive news about development can provide important examples to people of Africa, but our information services rarely provide such information to working people who need it the most. Such examples of development activities are highly relevant to Africa and perhaps the model of the "Community of South American Nations" may be a good one for Africa to follow.

A key requirement for development of Africa is a redrawing of the "information map" to reassess our information work. We need to assess the relevance of the sources of information we provide to the people and to review whose point of view such information reflects. We need to look afresh at the form and content of information in our libraries and look at what languages they cover. We need to see if the information is targeted correctly and review how outcomes are monitored. Our information needs to reflect Africa in a new perspective and reinterpret its history from the point of view of African working people. The world-view that people are daily presented by the Western media needs to be challenged for African people to see themselves as equal partners in a global context. An alternative vision and view of the world needs to be made available to *every* African. No people can develop under a situation of daily images of their own powerlessness and inadequacy, where facts about their exploitation are hidden and their suffering is shown as resulting from their own fault. In order to build our self-confidence we need to see the world from our own perspective in which the "other" is just that – the other.

Technological developments mentioned earlier already provide a basis for making this alternative position for Africa a reality. An example of this new way of thinking and doing is provided by the pioneering Pambazuka News, Weekly Forum for Social Justice for Africa. ("Pambazuka" means "arise" or "awaken" in Kiswahili). This is "a tool for progressive social change in Africa" and is produced by ***Fahamu***, "an organisation that uses information and communication technologies to serve the needs of

organisations and social movements that aspire to progressive social change".

It is in initiatives such as this that African librarians need to get involved. We need to form new alliance with global movements such as the World Social Forum. Another area in which librarians need to be active is initiatives such as the pan-Latin American TV channel, Telesur, which, as Bruce (2005) reports, aims to "counter cultural imperialism, which the Channel's president, Andres Izaara said had gone unchallenged in the region for 50 years".

But a key requirement for ensuring a meaningful information change is to re-assess the social role of librarians and information workers. Too often we are satisfied with a very limited social role and have shied away from any active involvement in the political reality around us. But our so-called "neutrality" is not real neutral; it is, in effect, siding with the status quo which we reinforce if we do not challenge inequality and injustice
.

SOCIAL ROLE OF LIBRARIANS

"The people's hour has arrived" said Bolivian President-elect Evo Morales while reiterating promises to recover Bolivia's natural resources, including natural gas, for all Bolivians (*Bolivia's Morales, Chavez Pledge to Strengthen Ties*, 2005). Such a programme for Africa is well overdue and needs active participation of information and community activists. Again, we need to work closely with progressive Pan African movements and activists, as the problems facing African can best be resolved on a continental-basis, and in partnership with others whose aims match ours.

Blake (1989) examined the role of librarians in very clear terms:

> There are those who, clinging to the idea that the library profession should be politically neutral, would contend that contributing to social projects is not an appropriate activity for librarians. However, without a clear and vital set of philosophical and political ideals acting as a guiding beacon,

> the library profession will not remain neutral, but will drift aimlessly with the currents of power and privilege.
>
> Librarians must forcefully articulate their commitment to serving the information needs of all segments of society. They must rededicate themselves to assuring the widest and most equitable access to information by opposing fees for services and the commercialization of knowledge. Furthermore, librarians must be willing to enter the political arena and advocate for these principles.

This call for involvement in the political arena is even more urgent in Africa today in view the changes taking place in the context of corporate globalisation and marketisatiion of services.

The rest of this paper looks at one attempt in the African information field to make a positive change in the way information services are managed and delivered.

Progressive African Library and Information Activists' Group

It is perhaps time for information professionals to move away from lamenting the situation to turning their ideas into action. PALIAct initiative is one such attempt. It was set up as a way of taking on board some of the issues raised above. It is being supported by the Department of Applied Social Sciences of the London Metropolitan University. It also has the potential to bring together the African Diaspora with progressive people in the "West" to create a powerful partnership with the information professionals in Africa to develop innovative information services which can help develop people and communities.

PALIAct seeks to develop people-oriented information services decided upon by workers, peasants, pastoralists, fisher people and other marganilised individuals and groups whose needs have not been met. It involves working in partnership with other professionals and service providers. PALIAct operates on principles of equality, democracy and

social justice and encourages a Pan African world outlook among information and community activists.

PALIACT recognises the right to relevant information as a basic human right.

The struggle for a relevant information service is intimately linked with the political struggles of the people to meet their material, social, cultural and political needs. PALIAct believes that the opportunity for creating a people-orientated information service at the time of political independence was lost. Instead of challenging the very basis on which library and information services were built, we allowed ourselves to be manipulated into making merely quantitative changes in library services, but failed to make any qualitative changes. The *classes* who were served by the colonial library service continued to be served and the needs of working people who had always remained outside the remit of such services remained unmet. Their experiences, their cultures, their very language remained outside the walls of impressive library buildings. Thus the advantage gained in the early period of struggle for a society and an information system which served the needs of *all* its people was lost. The struggle for such an information service continues to date.

The PALIAct programme is therefore an activist agenda to ensure that the information rights of African people are recognised in theory as well as in practice. PALIAct will set up pilot projects in a number of countries to develop ideas and practices to develop people-orientated information services.

PALIAct aims relate directly to meeting the Millennium goals for development. One of the challenges identified at the World Summit on the Information Society is to "harness the potential of information and communication technology to promote the development goals of the Millennium Declaration" (World Summit on Information Society, 2003b). PALIAct provides one very practical answer to this challenge.

PALIAct principles[1]

In its commitment to developing a people-orientated information service, PALIAct is committed to:

- The principles of social justice, equality, equity, human welfare, and the development of cultural and social democracy; thus we shall actively address historical inequalities in the information field in Africa;
- Achieving equality of access to and inclusiveness of information services, especially extending such services to the workers, peasants and the poor, the marginalized and those who have been discriminated against;
- The provision of a relevant service to those active in the struggles for social justice and who are working towards the creation of a liberated Africa;
- Supporting the collection, organization, preservation and dissemination of the documents of people's struggles in all forms and languages;
- Making available alternative materials representing a wide range of progressive viewpoints from within Africa and overseas and which are often excluded by traditional libraries, mass media and educational and information systems;
- Encouraging the exploration of alternative models of services; promoting and disseminating critical analysis of information technology's impact on libraries and societies; and support the fundamental democratization of existing institutions of education, culture, communications;
- Undertaking joint, interdisciplinary research into fundamental library issues (e.g. into the political economy of information in the age of

1 Based on theTen point program developed by Mark Rosenzweig for the groups which met at the Vienna Conference of progressive librarians sponsored by KRIBIBIE in 2000. Copyright Progressive Librarians Guild, 2000. http://www.libr.org/PLG/ .

neo-liberalism and corporate globalization) in order to lay the basis for effective action in our spheres of work;

- Investigating and organizing efforts to make the library-as-workplace more democratic and encourage resistance to the managerialism of the present library culture;
- Promoting international solidarity among librarians and cooperation between libraries across borders on the basis of our commitment to the Universal Declaration of Human Rights and related covenants which create a democratic framework for constructive cooperative endeavours;
- Organizing in partnership with other activists in the cultural and educational fields, to help put issues of social responsibility on the agendas of international bodies such as IFLA and UNESCO;
- Opposing corporate globalization which, despite its claims, reinforces existing social, economic, cultural inequalities, and working towards the creation of a democratic globalism and internationalism which respects and cultivates cultural plurality, which recognizes the sovereignty of peoples, which acknowledges the obligations of society to the individual and communities, and which prioritizes human values and needs over profits.

PALIAct is discussing the possibilities of setting up pilot country centres in a number of countries. The experience gained in these pilots will help to develop further centres in other countries or regions of Africa. Such pilots require a committed group of local information professionals willing and able to work with local communities. Discussions are taking place for setting up the first pilots in Ghana and Kenya.

The success of the PALIAct initiative will, in the end, be decided upon by how actively the information professionals in Africa support it. The ideas are ready to be implemented, but whether they will be taken up remains to be seen. They offer a possibility of reconciling the lives of Nyanjiru and Kamau in the story we heard earlier. I hope there will no longer be silence in the library.

A new beginning?

The year 2007 marks the bicentenary of the British Parliamentary abolition of the slave trade in the former British Empire. We hope to formally launch PALIAct at the IFLA Conference in South Africa in 2007. At the same time, it would be appropriate for the library profession in Africa to make it a year of change to rededicate and reorient information services to meet the needs of the majority of its people. It would be appropriate for countries which have benefited from African slave trade to support initiatives such as PALIAct as a small way of acknowledging their debt to Africa.

AN AFRICAN ACTIVIST INFORMATION PROGRAMME

It is not within the scope of this presentation to discuss in detail what an activist information programme for Africa would or should look like. Such a programme will emerge when local information activists engage in the struggles of the people for their material and cultural rights. However, some possible direction for such a programme can be mentioned here:

Leadership development

No country, organisation or profession can expect to achieve its vision without developing its members in areas such as appropriate ideological awareness and orientation, an understanding of historical and current contradictions facing the country or organisation, a clarity about who and what their allies are in terms of achieving their goals, an understanding of organisational change brought about by innovation and creativity. The development of leadership requires that these theories are then reinforced by opportunities for practical work as a way of gaining experience which can give increased confidence to individuals as well as to organisations. It is only through such life-long learning programmes that there can be any hope of ensuring the sustainability required for long-term development.

These points were well understood in Kenya in the early 1960s when Pio Gama Pinto, Bildad Kaggia, Oginga Odinga and others set up the Lumumba Institute for developing political cadres. Those who killed the Institute (and Pinto) did a great disservice to the cause of African

liberation. Today we can learn from this history and develop a thousand Lumumba Institutes as a way of developing our people to lead the war for African's second liberation which starts with liberating our minds.

A number of programmes being delivered or developed at the London Metropolitan University's Department of Applied Social Sciences are suitable for such a leadership programme. All of these are capable of being delivered in partnership with African Universities if there is interest. These include

- the Quality Leaders Project (QLP), "management development through service development" with its "combating racism, managing equality" and other project management modules
- various information management modules and short courses, including "leadership for innovation, equality and change", "information policy", "information and social exclusion", "information services for minority communities". The proposed new module "information for development and social justice" which would be of particular relevance in Africa.

Collection building

An important area that needs to be addressed urgently is the collection policy and practice of African libraries. Again, this is not the forum to go into this in detail, but the following needs to be addressed:

- Material from African liberation struggle. The enormous amount of oral and written material generated during the long history of African struggle against colonialism needs to be collected, documented and made available. Developments in information and communications technologies make this task easier than it was some years back. Part of this process is the need to get back from colonial countries the vast amount of African documents, material culture, and archives stored in London, Paris and other colonial capitals.

- Documents of the Pan African movement need to be included in the above, as do material on slavery whose effects Africa has not recovered from even today.
- Documentation on the policies and activities of organisations and leaders active in the anti-colonial, anti-imperialist movements (before and after independence) need to be made available through every public and University library in Africa. These should include organisations and leaders in every African country. For example, films on Lumumba and other anti-imperialist activists need to be collected or commissioned.
- African libraries seems to be flooded by material from a Western, imperialist point of view. There is a need to actively collect material from an alternative, people's, point of view. This should include material on the World Social Forum (WSF) as well as on the people's anti-globalisation movements. The WSF has already included library events as part of its programme for its meetings in Bamako (2006) and in Nairobi in 2007. Two representatives of the PALIAct Kenya Centre have been sponsored by the Finnish Foreign Ministry to attend the Bamako event.[2] It is important for African library professional to be actively involved in this important initiative. A large number of East, Central, and Southern African librarians need to attend the Nairobi meeting in January 2007.
- Material from a Pan-African and internationalist perspective. African libraries need to collect material from other African countries, organise a translation service to make material available to all, and promote major regional African languages throughout the continent (e.g. Kiswahili, Arabic, and Yoruba).
- Collections on social and economic development. Experiences on development in other parts of the world needs to be made available to African planners, teachers, lecturers, extension workers and others as a way of disseminating it to people. Thus experiences from China, Cuba, Venezuela and India should be actively collected.

2 Details about these events are available from the WSF website mentioned in the Bibliography.

The "liberating the mind" /"kuvunja minyororo"[3] *collections*

As a practical way of putting some of these ideas into action, I would like to suggest that a new information partnership be set up in interested countries, under the name "Liberating the mind" /"kuvunja minyororo" partnership.

Key partners would include the local PALIAct country centre, a local University and the public library service. Other organisations such as Museums, Archives, and relevant Government ministries would also be able to join the partnership. International organisations such as IFLA, the African Union, UNESCO etc could be invited as partners. The national partnerships would have representation in a continent-wide partnership.

The "liberating the mind" service would collect and disseminate the material mentioned above. It should include "audience development"[4]

3 "Kuvunja minyororo" – Kiswahili for "to break the chains".

4 The QLP approach identifies 2 aspects under the term "audience development":

- The first aspect is to increase the reach of libraries and youth services to meet the needs of all young people, particularly refugees and asylum seekers and those who have not been reached before.
- The second aspect expands on what has come to be known as "reader development". However, the term "audience development" is preferred to "reader development". "Audience development" is a more inclusive term: it includes people who may have visual impairment and meets the needs of disabled people generally. It includes people who may not be literate either in English or in their own languages. It also allows for connecting people to the "reading experience" through non print media, such as arts, cinema, music, drama and other cultural activities. It involves all the senses, rather than being restricted to the use of just one.

The "audience development" approach to library and youth work develops new areas of service provision which a "traditional" library may not have provided as mainstream activities. Over a period of time, this approach will help to develop a new model of joined-up library-youth service.

Audience development workshops: These workshop sessions are perhaps the most innovative part of the programme. The sessions are programmed to reflect the specific aspects that the young people themselves decide meet their needs. They thus need to be flexible in order to be tailored to local requirements. They will also enable young people themselves to be the providers of such sessions, rather than being merely passive recipients of a service provided by an "outsider". At the same time, the programme will enable outside skills, ideas and expertise to be brought into the local youth communities, thereby injecting new and different ideas on the local scene.

approach taken by the Quality Leaders project and develop activities in areas such as film, radio, music, drama all of which can be developed in partnership with other professionals. As a start, each country should have at least one library designated as a "liberating the mind" centre. A start can be made, for example, by making available material recommended by the World Social Forum as relevant for Africa. It would be in a language appropriate to the country and be in paper as well as electronic format.

This Conference can set up a working party to take these ideas forward, if there is sufficient interest. This proposed partnership can set the African librarian free from the colonial shackle and can finally re-emerge with a new, socially-responsible role. The future is ours to make.

The QLP-Y programme will provide regular workshop sessions in each of the 2 years of the life of the Project. This will enable activities such as:

- presentations from writers, poets, film makers, media and other professionals
- music workshops, book and newsletter production sessions, broadcast workshops, film making modules
- various informal learning experiences
- ICT-related activities
- guest speakers from different fields as a way of enabling the young people to meet potential role models from diverse communities and from different fields.

Until the project requirements are worked out in some detail in consultation with the youth themselves, it is not possible to be any more specific than this. It is expected that these sessions will attract young people, who may never have used library or youth services, to be active participants in new service which they themselves help design and deliver.

The Workshops are incorporated in the QLP-Y on the basis that the learning and social needs of young people can be met more meaningfully as part of a cultural and social programme so as to avoid a feeling of "school out of school". The crucial element will be the empowerment of young people so that it is they who decide on the type of activity they are comfortable with.

REFERENCES

Henry Blanke (1989): "Librarianship and political values: neutrality or commitment" *Library Journal*, July 1989, pp. 39-42.

Bruce, Iain (2005): "First broadcast for Latin channel". BBC News. 24 July. Retrieved 04 January, 2005 from: http://news.bbc.co.uk/1/hi/world/americas/4713361.stm.

Castells, Manuel (1998): The *power of identity*. Oxford, Blackwell.

Castells, Manuel (1999): Information Technology, Globalization and Social Development. UNRISD Discussion Paper No. 114, September 1999. The United Nations Research Institute for Social Development (UNRISD). Retrieved 26 October, 2005 from http://www.unrisd.org/80256B3C005BCCF9/(httpPublications)/F270E0C066F3DE7780256B67005B728C?OpenDocument&panel=seriespapers.

Durrani, Shiraz (1997): "The other Kenya: underground and alternative literature. *Collection Building*. 16(2) 80-87.

Durrani, Shiraz (1998): "Independence in Kenya and the lost opportunity to build a people-orientated Library Service". *Library Review*. 47: 388-394 (8) 1998; Link-*up* (1998); *Alternative Library Literature* (1998/99).

Durrani, Shiraz (2002) *Kenyan libraries and information in times of social protest, 1960-1970*. *Swedish Library Research (Svensk Biblioteksforskning)* Vol. 14(3) 2002, pp.20-32.

Ideas and Issues (2005), "an irregular current awareness service which alerts you to new ideas, experiences, reports and developments of relevance to the module". Ten issues were prepared as part of the "Information Policy" module (2005-06) at the Department of Applied Social Sciences Department of the London Metropolitan University. Copies available from the author.

IBM Community Development Foundation. (1997). *The Net Result: Report of the National Working Party for Social Inclusion*. London: Authors.

Jacques, Martin (2005): "China is well on its way to being the other superpower". The Guardian, December 8. Retrieved 02 January, 2006 from: http://www.guardian.co.uk/china/story/0,,1661736,00.html.

Marx, Gary (2006): "Cuba cits [sic] 'world class' trail in biotech research". The Chicago Tribune. Retrieved 02 January, 2006 from thesouthern.com. www.thesouthern.com/articles/2006/01/01/business/doc43b6e887be9f4564996873.txt.

Matsuura, Koïchiro (2005): "Towards knowledge societies". Retrieved 13 November, 2005 from http://www.kantipuronline.com/kolnews.php?&nid=56661.

Bolivia's Morales, Chavez Pledge to Strengthen Ties (2005, update2). Retrieved 04 January, 2005 from Bloomberg.com http://www.bloomberg.com/apps/news?pid=10000086&sid=amUh3706gyHU&refer=latin_america.

"New Challenges and Victories Ahead" (2006). Havana, Prensa Latina. 1 Jan 2006 (Prensa Latina). Retrieved 02 January, 2006 from *http://www.plenglish.com/article.asp?ID=%7B10EC2ABE-BE6D-486C-BF15-6728B96D2070%7D)&language=EN*.

O'Keefe, Derrick (2005): "There is an alternative: Bolivia, Venezuela, and the struggle against neo-liberalism". December 27, 2005. Retrieved 29 December, 2005 from Seven Oaks http://sevenoaksmag.com/commentary/91_comm3.html.

Open to all? The public library and social exclusion. (2000) Vol.1 *Overview and conclusions;* Vol. 2*: Survey, case studies and methods;* Vol. 3*: Working Papers.* London: Resource, the Council for Museum, Archives, and Libraries. ISBN 1-902394-49-6. ISSN 1466-2949. (see: http://www.mla.gov.uk/documents/lic084.pdf for

Vol. 1; and <http://www.seapn.org.uk/publication.html> for Vol. 3).

Pambazuka News, weekly forum for justice in Africa. Retrieved 03 January from: http://www.pambazuka.org/.

Quality Leaders Project. Details available from: http://www.seapn.org.uk/qlp.html.

UNESCO (2005): Towards knowledge societies. Paris: UNESCO Publishing. (UNESCO World Report). Retrieved 13 November, 2005 from http://unesdoc.unesco.org/images/0014/001418/141843e.pdf.

World Social Movement. Library events. See: http://www.nigd.org/libraries/bamako-nairobi.

World Summit on the Information Society (2003a): "Building the Information Society: a global challenge in the new Millennium". Retrieved 04 January, 2006 from: http://www.itu.int/wsis/index.html. More recent documents from the Tunic WSIS Conference (2005) are available from: http://www.itu.int/wsis/tunis/index.html.

World Summit on Information Society (2003b): "Declaration of principles; building the Information Society, a global challenge in the new Millennium". Document WSIS-03/GENEVA/DOC/4-E. Retrieved 17 November, 2005 from http://www.itu.int/wsis/docs/geneva/official/dop.html.

World Summit on Information Society, Civil Society (2003): "Shaping Information Societies for Human Needs; Civil Society Declaration to the World Summit on the Information Society". World Summit on the Information Society (WSIS) Plenary. Geneva, 8 December. Retrieved 21 December, 2005 from http: //wsis.ecommons.ca/book/print/218.

THE ROLE OF THE INFORMATION PROFESSIONAL IN THE AGE OF UNCERTAINTY: COMPLICATED OR COMPLEX?

Deonie Botha

Abstract

The role of the information professional is and will remain the provision of information or explicit knowledge. However, due to the uncertain nature of the environment in which individuals or clients find themselves they are confronted with a situation of "not knowing what they need to know". Information professionals therefore have to "interpret" the information needs of clients (which are expressed as a research question) in terms of the known, knowable, complex and chaotic categories of the research question. This places new demands on the role of the information professional and requires a paradigm shift in terms of service provision. It necessitates a new type of engagement with clients.

Information professionals need to become co-researchers and take active ownership of the research process. This requires of them the ability to make sense of the information and take critical decisions on the manner in which he/she is going to approach, conduct and conclude the research process. This necessitates the active involvement and participation of information professionals in terms of three critical phases of the research process, namely:

***Planning phase:** The information professional should determine whether the research problem is discussed from a known, knowable, complex and chaotic category. He/she should question whether this is the best perspective and discuss alternative approaches with the client.*

***Monitoring phase:** The information professional should develop a thorough knowledge of printed, electronic as well as human information sources. This will enable him/her to create attractors and study patterns that emerge in the literature with regards to the research question.*

***Concluding phase:** The information professional should make suggestions regarding the incorporation of the research within the existing field of knowledge as well as the manner in which the research findings could contribute to the existing field of knowledge regarding the research topic.*

In order to develop an understanding of the role of the information professional in the age of uncertainty this paper will address the following issues:

- *The role of the information professional in sense-and decision making;*
- *The information professional and the known, knowable, complex and chaotic domains;*
- *Challenges facing the information professional in the age of uncertainty;*
- *The role of the information professional in the age of uncertainty;*
- *An enhanced model of service delivery to support research in the age of uncertainty;*
- *The contribution of the information professional in terms of creating and supporting research networks.*

During this paper a "snapshot" of the future in terms of service delivery by information professionals is provided. However, it also indicates the prominent role that information professionals will have to play in future to continue to assist the client in terms of his/her more complex information needs.

INTRODUCTION

"We had to develop the ability to say "no" and then empower clients to fulfill their own information needs. This is the manner in which an information specialist at a large South African mining organization describes the situation in their organization after a process of rationalization. I am convinced that this is a reflection of the current situation in many information centers around South African organizations affected by mergers, acquisitions, downsizing and other kinds of changes in the strategic intent of the organization.

However, it is not only the nature of service provision that has changed but also the expectation of clients and as well as their information needs. Clients expect of information professionals to deliver information that are ready for use i.e. it must be contextualized, interpreted and packaged. The

information needs of clients are complicated and complex because it changes constantly according to the strategic intent of the organization. A complicated information need consists of a large number of aspects or components but they can be adequately analyzed (Cilliers, 1998). A complex information need consists of an intricate set of non-linear relationships and feedback loops and only certain aspects or components can be analyzed at a time (Cilliers, 1998). The nature of the information needs or the research question of the client requires of information professionals to contextualize, interpret and package a "product" for a client which constantly changes its demand for a certain type of "product" as determined by the environment in which he/she find themselves.

This situation requires the ability of information professionals to make sense of information and to make decision on the relevancy of the information for a particular client or the context as well as the relevancy of the information in terms of the research question or the content.

It is therefore not always sufficient for the information professional to merely enable the client by teaching him/her information skills. It requires the information professional to engage in a "different manner" with the client, the information as well as the research question.

The questions that affect service delivery in an information centre are:

- What constitutes the extent and nature of information provision?
- What does the activities of sense and decision making entails?
- What is the nature of the environment in which the client exists?
- What should the nature of service provision be within this environment?

One should however take cognizance of the fact that in some – or even most situations it might suffice to take the "enabling" approach and simply empower clients by means of training to fulfill their own information needs. The information professional must develop the skill to be able to differentiate between the empowering approach and a more in-depth

involvement in the research question and act accordingly in terms of service provision.

THE INFORMATION PROFESSION

From the definition provided by Borko in 1968 it is clear that the information profession has always been involved in the "interpretation" of information. Borko (cited in Lester and Koehler, 2003) describes the information profession as follow: "the information profession investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability. It is concerned with that body of knowledge relating to the origination, collection, organization, storage, retrieval, interpretation, transmission, transformation, and utilization of information.

Although Borko's definition (cited in Lester and Koehler, 2003) is still relevant the current nature of the client and his research question necessitate the information professional to not merely interpret information in terms of the research question but also to make sense thereof and to base decision thereupon.

THE INFORMATION PROFESSIONAL AND SENSE MAKING

Weick (1995) defines the concept of sense making as follow: sense making involves placing stimuli into some kind of framework. The well-known phrase "frame of reference" has traditionally meant a generalized point of view that directs interpretations. When people put stimuli into frameworks, this enables them "to comprehend, understand, explain, attribute, extrapolate, and predict. This implies that information professionals has to "put stimuli or information into frameworks or perspective and comprehend, understand, explain, attribute, extrapolate, and make predictions" on information before a decision are made on the relevancy of the information in terms of context (or client) and content or (research question) (Starbuck & Milliken cited in Weick, 1995). Frameworks are created by the past experiences, insights, situations etc. which would provide cues to the information professional on how he/she should go about in making sense of information.

In trying to make sense of the context and content of information the seven attributes of sense-making should be kept in mind. These attributes as identified by Weick (1995).

Identity construction: The information professional has to construct an identity as the person responsible for providing a service to the client and to see to it that the right information is accessible to the right client.

Retrospective: The information professional needs to synthesize the meaning of the context and content of information in order to deal with equivocality and confusion. They should not provide more (i.e. quantity) information but rather try to make sense (values, priorities and preferences) of the available information (Weick, 1995).

Enactive of sensible environments: The information professional must make sense of information by using the "environment" of the client as a framework. He will therefore make sense of information from "within" the internal and/or external environment of the client. In making sense of information the information professional will contribute and "help shape" the environment or the organization. Follett states: "People create their environments as those environments create them." The environment of the client is therefore not in totality but are becoming (Weick, 1995).

Social: Service provision is not possible without interaction between the information professional and the client and during which a common language is shared. The information professional has to take cognizance of the fact that making sense of the content of information should take place on a variety of levels in the environment of the client. Weick (1995) states that sense making should take on the intersubjective, generic and extra subjective levels.

Ongoing: Information professionals are continually in the process of making sense of the content of information. However from time to time it would be required of the information professional to consciously make sense of a particular piece of information. This phenomenon is known as automatic arousal.

Focused on and by extracted cues: Information professionals have to rely on knowledge, insights and experiences (i.e. cues and frames) from the past to be able to make sense of current information.

Driven by plausibility rather than accuracy: Information professionals can never be absolutely certain about the accuracy of the sense they make of the context and content of information. This is due to the fact that we can only know what we think till we see what we say - information are shrouded by ambiguity, uncertainty and plausibility. It is only in retrospect that we can make a judgment on the correctness of the sense that we have made.

It is thus clear that sense making requires synergy between a context (the client) and content (the information) and an activity (taking cues and frames from the past and applying them to current problems and situations).

THE INFORMATION PROFESSIONAL AND DECISION MAKING

Drummond (2001) states that the art of decision making necessitate an understanding of the manner in which information leads the client closer to reality. She warns however, that information can easily lead the information professional away from reality and that he/she should rather focus on what information conceal than on what it reveal. This statement means that the information professional must develop the ability to "read between the lines" in terms of the context and content of the information. The information professional should guard against bounded rationality and should strive to enter a shared space for emerging relationship also known as a "*ba*". According to Nonaka and Konno (1998) as well as Takeuchi and Nonaka (2004) "*ba*" the platform for the resource concentration of the organization's knowledge assets and the intellectualizing capabilities within the knowledge creation processes. To participate in a *ba* mean to get involved and transcend one's own limited perspective or boundary.

Once sense has been made of the context and content of the information the information professional must make a decision on a certain course of action for example should this information be retained, discarded or disseminated

to a particular client within the enterprise. It is also the responsibility of the information professional to indicate the relevancy of the content of the information which was disseminated to a particular client.

The dilemma with regards to making a decision on a particular course of action resides in the fact that the information professional are confronted with uncertainty and ambivalence. He/she will never know if he had made a correct decision on a particular course of action because we think by acting. This implies that only when the information is used can one determine whether the correct decision was taken. Retrospection is a crucial dimension of sense and decision making.

The information professional should however, take cognizance of the fact that we often "read" in information what we want to read in it. One should therefore exercise caution to remain as objective as possible when making decisions on the context and content of information.

The information professional can try to simplify the act of decision making by making use of metaphors and myths. However, this may create further uncertainty due to the fact that metaphors and myths reveals but also conceal to a large extent. He/she should have to ensure that he/she is as objective as possible and try and find information on all possible solutions to the research question. The information professional should be careful not to "read" into the information what we want or expect to find in it and be satisfied with an initial decision on the context and content of the information. This situation is further complicated by the fact that the more information we have the more uncertain we become.

The challenge for the information professional resides in finding a balance between the amounts of information required and the correctness of a decision on the relevancy of the context and content of the collected information.

DOMAINS OF SENSE- AND DECISION MAKING

Individuals such as executives, managers and information professionals tend to make sense of and take decisions on strategic and operational issues from the domains of the known and knowable. These domains are briefly explained by means of the Cynefin framework for sense making developed by the IBM Cynefin Centre for Organisational Sensemaking (2003). The Cynefin framework consists of four domains, namely the known, the knowable, the complex and the chaotic (IBM, 2003).

The four domains of sense and decision making are:

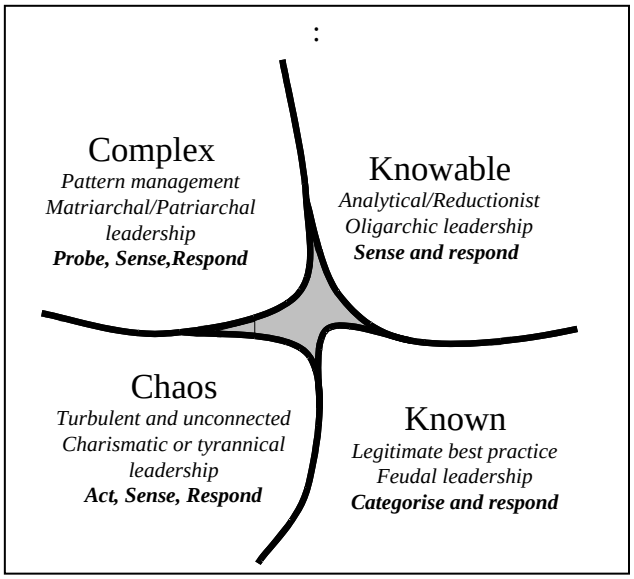
***Known or the bureaucratic domain*:** According to Snowden (2002) this is the "formal organisation, the realm of company policy, procedures and controls. The language in this environment is known, explicit and open. It is the legitimate domain of the corporate intranet and its shared context is the lowest common denominator of its target audience's shared context." In this domain the decision model is to "sense incoming data, categorize that data, and then respond in accordance with predetermined practice i.e. sense-categorise-respond. The focus in this domain is on best-practices.

***Knowable or the professional domain*:** This domain is characterized by professional individuals, who through defined training programs, acquire a specialist terminology; codified in textbooks. In this domain the decision making model is to "sense incoming data, and then respond in accordance with expert advice or interpretation of that analysis" i.e. sense – analyse – respond (Kurtz & Snowden, 2003). The focus in this domain is on good practices (Snowden, 2002)

***Complex, informal and interdependent domain*:** In this domain the decision model is to "create probes to make the patterns or potential patterns more visible before we take any action or respond". Kurtz and Snowden (2003) explain: "This is the time to "stand still" (but pay attention) and gain new perspective on the situation rather than "run for your life," relying on the entrained patterns of past experience to determine our response." In this domain we see the sharing of shared experiences, values and beliefs. This is the domain of the shadow or informal

organisation, that complex network of obligations, experiences and mutual commitments without which an organisation could not survive. Trust in this domain is a naturally occurring phenomenon as all collaboration is voluntary in nature. In this domain we find worst practices (Snowden, 2002).

Chaotic, uncharted and innovative domain: Snowden (2002) explains that in the chaotic domain we have neither the experience, not the expertise because the situation is new, the ultimate learning environment. The organisation will tend to look at such problems through the filters of past experience. The history of business is littered with companies who failed to realise that the world had changed. In hindsight such foolishness is easy to identify, but at the time the dominant language and belief systems of the organisation concerned make it far from obvious. This is particularly true where the cost of knowledge creation within the organisation is high as this tends to knowledge hoarding and secrecy that in turn can blind the organisation to new and changed circumstances. Here we act to create context to enable action, through individuals or communities who have either developed specific understanding, or who are comfortable in conditions of extreme uncertainty. Such individuals or communities impose patterns on chaos to make it both comprehensible and manageable. In this domain the decision making model "is to act, quickly and decisively, to reduce the turbulence; and then to sense immediately the reaction to that intervention". This is the domain of novel practice.



Source: The Cynefin model (Snowden, 2002)

From the above discussion it is clear that the nature of the environment in which the information needs of the client originate and in which the information professional must make sense and take decisions on the context and content of information necessitates an in-depth involvement between information professional and client.

A MODEL OF SERVICE PROVISION

An enhanced model of service provision is suggested. This model can be used in support of or in addition to existing models of service provision.

Identification phase: During the planning phase the information professional and the client need to clarify the exact nature of the research question. It is important that the client inform the information professional about his perspective on the research problem. He/she must also be informed on the existing level of knowledge of the client in terms of the research question.

During this phase the information professional should determine whether the client interprets the research question from a known, knowable, complex and chaotic perspective. The information professional should question whether this is the best perspective and discuss alternative approaches with the client. Different perspectives on the research problem necessitate different interactions between the information professional, the client and the research question.

These interactions can be explained in the following manner:

- Known: The information professional provide information to the client which is available from within the organization or in near proximity to the organization.
- Knowable: The information professional actively pursue less traditional sources of information in order to address the research question. This entails the creation of multidisciplinary research networks. Research networks can be facilitated in an electronic form as a discussion group or could be in the form of conventional group discussions. It is however, important that researchers from various disciplines are consulted in order to be able to view the research question from different settings and by means of different "languages".
- Complex: The information professional needs to interact by means of studying patterns or creating attractors in terms of the research question.
- Chaotic: The information professional interact by following an alternative approach towards the research question as suggested by the client. The purpose of this is to act, sense and respond. The results of the approach followed by the information professional are presented to the client in order to ascertain whether the research question is addressed in the correct and in a sufficient manner.

As soon as the research question are categorized and interpreted from the perspective of the relevant category the monitoring phase can commence.

Monitoring phase: During the monitoring phase the information professional should develop a thorough understanding of the literature and other sources of information regarding the research question and study patterns or trends that emerge in the literature regarding the research question or certain aspects of the research question. It is the responsibility of the information professional to monitor existing and new developments in terms of the research question and to inform the client of these developments. It is also important that the information professional develop the necessary skills and confidence to create attractors in terms of the research question. An attractor are defined as: "A idea, object or person used to coalesce activity" (IBM Centre for Organizational Complexity, 2004:3) In terms of providing a service to the client the creation of an attractor entail that certain ideas, objectives or the behavior of persons are identified and monitored in terms of the research question. While patterns in the literature provide the information professional with a general overview of developments in terms of the research question an attractor focus specifically on a certain aspect of the research question. Patterns can therefore emerge as a result of the creation of an attractor.

The monitoring phase necessitates a thorough understanding of the research question and knowledge of relevant information sources on the side of the information professional.

Concluding phase: The information professional should make suggestions regarding the incorporation of the results of the research question within the existing field of knowledge. It is also necessary that the information professional discuss suggestions for further research related to the research question with the client. During the conclusion phase the research network that was established during the research process are informed of the findings and advised on suggestions for future research.

CONCLUSION

The information needs of clients within the knowledge economy requires of information professional to engage with clients in a complex and ongoing manner. This interaction necessitates an enhanced model of service provision and more importantly require the information

professional to regard himself as co-researcher rather than a mere provider of information.

REFERENCES

Cilliers, P. (1998). Complexity and postmodernism. London: Routledge.

Drummond, H. (2001). The art of decision making: mirrors of imagination, masks of fate. New York: John Wiley & Sons.

IBM Cynefin Centre for Organisational Complexity. (2003). The Cynefin model. London: IBM.

IBM Cynefin Centre for Organisational Complexity. (2004). Cynefin vocabulary. London: IBM.

Kurtz, C.F. & Snowden, D.J. (2003). The new dynamics of strategy: sense-making in a complex-complicated world. *IBM Systems Journal*. 42(3):462-483.

Lester, J. & Koehler, W.C. (2003). Fundamentals of information studies. New York: Neal-Schuman.

Nonaka, I, & Konno, N. (1998). The concept of "*Ba*": building a foundation for knowledge creation. *California Management Review*. 40 (3): 40-54.

Snowden, D. (2002). Complex acts of knowing: paradox and descriptive self-awareness. Journal of knowledge management, 6(2):1-14.

Takeuchi, H. & Nonaka, I. (2004). Hitotsubashi on knowledge management. Singapore: John Wiley & Sons.

Weick, K. E. (1995). Sensemaking in organizations. Thousand Oaks, CA: Sage Publications.

LIBRARIES AND DEMOCRACY

Mohammed M. Aman

Abstract

Africa and the African people are struggling for human decency, freedom, and dignity. Extremist ideas and ideologies thrive when millions of peoples are deprived of their basic rights and dignity and hope for a better future. The majority of Africans are young; millions are under age 20 years of age. These young people, are unlike their forefathers, are not fighting for independence from colonial and oppressive foreign powers. They are fighting unemployment, boredom, ignorance and health epidemic like AIDS and Malaria. They wish to have better lives than their fathers and they have dreams of becoming contributing members to their society. Libraries can play a role in the improvement of these young lives, through the promotion of reading, job training, access to the Internet and the promotion of e-government, e-commerce and Webcentric education.

In his paper, Professor Aman will describe strategies that have developed in other countries to advance the standard of living for Africans, to promote freedom of expression, dialogue and a civil society. When we look back at the experiences of other countries, we find that public libraries, like those established by Carnegie, have promoted a free market economy, as well as freedom of expression and beliefs. In today's technological environment much can be done by libraries, media and other information outlets to promote the principles of free and democratic societies in Africa.

Members of the international community have a deep-rooted interest to work with fellow African educators, information professionals and decision-makers to achieve genuine democracy and to ensure that libraries will play a major role in the process as they have done in Europe in recent and Asia in the recent history.

INTRODUCTION

Democracy has come to be acknowledged as the best way of respecting human rights and guaranteeing dignity and freedom for all.

Democracies are political systems characterized by popular participation, genuine competition for executive office, and institutional checks on

power. Democracy recognizes that each citizen's vote is of equal value, that each citizen's voice has an equal right to be heard. This puts into practical effect the proclamation by the framers and signatories of the Universal Declaration of Human Rights that "recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, just and peace in the world." (United Nations, 1948). It adds that they have declared their "faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedoms."

Democracy is not a perfect system of government but it is the best available because it is based on the fundamental principle of human equity and operates via the mechanism of community decision making through individual choice. It seeks to balance the differing interests of individuals and, by extension, communal interests. Its growing acceptance internationally since the nineteenth century, especially since WWII, has demonstrated a broad international consensus that it offers the best available means of governing a state in order to ensure fair treatment for all of its members (Inglehart and Norris, 2003). In the present global environment, democracies are consistently outperforming autocracies and many of the latter know that they are standing on their last leg.

CIVIL SOCIETY AS THE FUEL FOR DEMOCRACY

The establishment of library associations or syndicates and the support of libraries to civil societies in their communities are part and parcel of the civil society movement that serves as the fuel for the engine of democracy. The civil society thesis presumes that through the collective force of its demands and interests, the associational sector can compel unwilling authoritarian governments to instigate periods of democratization. In most African and other developing societies, the absence of significant multiparty political competition, most anti-state political activity is routed through non-regime spaces and groups rather than the hopelessly outgunned opposition parties, where they exist. Yet, it does not follow that civil society can cure the autocratic ills of African societies.

The concept of civil society emerged in Western social science as the Cold War ended, when comparative social scientists borrowed the concept from European history in order to explain the ongoing wave of democratic transitions across the world. According to Tocqueville, civil society must maintain autonomy from the state and especially from "the control of the administration," whose influence could be seen in the state's monopoly of public instruction, health care, and provision of support for the unemployed" (Keane, 1988). In this sentiment, Tocqueville articulates a republican understanding of civil society that remains influential today. Keane summarizes Tocqueville vision of civil society as follows:

> Tocqueville never tired of repeating the point that "independent eye of society"…an eye comprising a popularity of interacting, self-organized and constantly vigilant civil associations-is necessary for consolidating the democratic revolution. In contrast to political forms of involvement (such as participation in elections or jury services, which are concerned with the wider, more general community interests, civil associations consist of combinations of citizens preoccupied with "small affairs."

A cadre of neo-Tocquevillian scholars has since repeated a simple casual claim: no civil society, no democratization. Most Western political scientists define civil society as the place where a mélange of groups, associations, clubs, guilds, syndicates, federations, unions, parties and groups come together to provide a buffer between state and citizen. Thus CSOs must be secular in ideology, civil in their behavior, legally recognized, and supportive of democratic reform.

Though the civil society thesis encapsulates several distinct hypotheses, the relevant one here entails that under conditions of authoritarian rule, an energetic associational life-comprising independent, voluntary organizations distinct from the state, economy, and family-can trigger democratic transitions by challenging autocratic leaders and forcing the state to accept liberal reforms.

In some African and North African countries, civil society facilitated democratization by restraining state coercion, inflating the overt cost of repression, and marshalling international support for reforms. By the mid-1990s, the Western academic and policy-making consensus was that the emergence of a dynamic civil society represented the sin qua non of democracy. According to one report, civil society resistance played a vital role in driving 50 out of 67 modern transitions from authoritarian rule. The United Nations Development Program (UNDP) portrays civil society as a vital pillar in sustaining human development and fostering transparent political governance. The World Bank and European Commission (EC) employ a broad portfolio of aid to support civil society. US foundations like the Ford Foundation and National Endowment for Democracy run numerous grant competitions for CSOs in developing countries, rewarding them with liquid funds, training workshops, and exchange programs. Between 1991 and 2001, the US Agency for International Development (USAID) allocated $150 million to projects classified as "civil society strengthening," Political donors, bilateral aid agencies, and multilateral financial institutions in the democracy promotion industry have clinched civil society as the magic bullet against African autocracy-empowering associational forces and stimulate would-be democratizes and impel authoritarian rulers to accept compromises regarding political rights, fair elections, and civil liberties.

THE ROLE OF LIBRARIES AND LIBRARIANS IN PROMOTING DEMOCRACY

Historically, librarians have been ranked among nations' intellectuals and wise men and women. Librarians were the guardians of knowledge and the heritage of mankind. Because of their status and stature as wise intellectuals, they were also victims of brutal authorities of kings and emperors. We have seen examples of persecution and prosecution of librarians in the China, the former Soviet Union, Cuba, and being the subject of ridicule by some of arch conservatives in the Bush administration, including the former Attorney General Ashcroft, when librarians and the American Library Association voiced their opposition to the Patriot Act and its infringement on intellectual freedom.

Libraries and librarians have also been used as forums for government propaganda as was the case during the Cold War when the Soviet Union and the West competed to establish libraries and distribute books in third world countries attacking each other and promoting their own policies, cultures and way of life as better than the others. I remember the years of my youth in Egyptian cities like Cairo and Alexandria where young people frequented the USIA Library, Goethe House, the British Council Library, the Russian and the Czech embassies in search of books to read and gifts of books to take home.

Throughout the past two centuries, libraries became essential institutions of democracies in countries which have been fortunate to enjoy this system of government. As early as 1815, Jesse Torrey spoke of "universal dissemination of knowledge and virtue by means of free public libraries" as a cause consecrated by religion and enjoined by patriotism." (Torrey 1815).

> As "arsenal of democracy", the institution of libraries became the protectors of the written heritage of mankind and provided a gateway to the ideals of democracy. Writing at the onset of World War II, when book burning was a tradition in some European countries and a possibility in the United States, Archibald McLeish, then Librarian of Congress, spoke of the book as a "construction spirit" and librarians not only as 'keepers of the word" but also its partisans and advocates. He states that it is upon American libraries that the burden of his education must fall. He claims that education is not an altogether adequate answer to those who ask for a chance to work usefully and creatively.

The American President Franklin Delano Roosevelt best articulated the role of the library in a democratic society. During the darkest days of WWII, when the future of democracy was very much in question, he told the nation:

> Libraries are directly and immediately involved in the conflict which divides our world, and for two reasons; first because they are essential to the functioning of a democratic society; second,

> because the contemporary conflict touches the integrity of scholarship, the freedom of the mind, and even the survival of culture, and libraries are the great tools of scholarship, the great repositories of culture, and the great symbols of the freedom of the mind. (Ditzion)

The former Librarian of Congress Daniel Boorstin observed that today's libraries continue to function as "meccas of self-help...the most open of open universities…where there are no entrance examinations and no diplomas, and where one can enter at any age." For Boorstin, libraries are "full partners in a dynamic Learning Society." He added:

> As citizens of the world's longest-lasting democracy, we must have easy access to libraries more than ever before. How well we govern, how intelligently we think through on difficult issues after another, how rationally we perform at center stage on the planet, will depend on our taking advantage of those resources.

In today's information environment, the Internet, Cybercafés and television broadcasts directed at African, Asian, South American and Middle Eastern countries have surpassed libraries as sources of information, education as well as propaganda and misinformation by some.

Since libraries were not a European or American invention, people in the Third World countries should take pride in the fact that in their classic and ancient civilizations libraries flourished in such African countries as Egypt, Timbuktu, Mombassa, and as well as in China, Mesopotamia, Persia and other centers of ancient civilizations.

Just as libraries are not an American or Western invention neither is democracy. The Greeks gave it its new meaning; yet, it has been practiced in Africa at the tribal level where the councils of elders made the final decisions and were always consulted by the tribal chiefs.

It is these two institutions that we should emphasize today as we strive to push for a revival of two old traditions: democracy and libraries.

There is no doubt in my mind that that these two institutions, once forgotten under authoritarian regimes and the yoke of colonialism, will rise again and play a major role in the economic development of our African, Asian and Middle Eastern countries. However, we must be able to resist the arguments that advance the notion that without economic development there can be no democracy and freedom for the masses. The argument is colonial in its historic premise and condescending in its psychological impact. Does one have to wait to be a rich person to enjoy freedom and democracy in his own native land? Does one have to sacrifice his liberty for a decent living, employment, and health care? It is true that development can be measured by social indicators such as life expectancy, access to clean drinking water, literacy rates, agricultural yields, and the quality of public-health services. On nearly all of these quality of life measures, low-income democracies dramatically outdo their autocratic counterparts. (Siegle, et al, 1994, p. 59). The development-first thesis has persisted in the post-Cold War world, despite the abysmal economic record of Latin American military governments, the "strongman" rulers in Africa, and the communist states in Eastern Europe and the former Soviet Union. Countries often remain poor because they retain autocratic political structures and subscribe to the notion that development-first strategy perpetuates a deadly cycle of poverty, conflict, and oppression. (Siegle, et al 1994). The development-first thesis rests on a commonsense notion, put forward by political sociologist Seymour Martin Lipset and others some 45 years ago, that economic growth creates the necessary preconditions for democracy by expanding literacy, creating a secure middle class, and nurturing cosmopolitan attitudes. Second, it fits comfortably with the demands of the era of its origin, the Cold War, when about a third of countries qualified as democracies and very few of them were poor.

I dare say that the majority of our African, Asian and Middle Eastern brothers and sisters would rather enjoy their freedom today rather than waiting for the unfulfilled promises of prosperity for tomorrow. Our people have been lied to for a long time and the prosperous tomorrow that was promised to them under British, French, Italian, or Portuguese occupation never came and their independence and freedom were never granted, but fought for with our ancestor's blood and sweat.

Today, libraries have proven themselves to be one of the basic corners of a democracy, in more ways than we can enumerate in the short time we have. Nonetheless, librarians can take pride in acknowledging the following facts:

- Libraries are frequently described as the "cornerstones of liberty"
- Libraries should continue to resist censorship and collection development
- The library is the center for community problem-solving
- Libraries, as educational institutions, and their managers who are also educators, can make a major contribution to the promotion and strengthening of democracy
- Public libraries should promote themselves as the "Peoples' University" and enlist independent learners in the ranks of politicians, business and industry, trade unions, places of worship, women's movement, and others
- Article 26 on the right to education, the Universal Declaration provides a powerful mission for those engaged in providing access to information, the libraries and information services of the world. It states the right to education "shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms… [and] promote understanding, tolerance, and friendship among all nations, social or religious, and shall further the activities of the United Nations for the maintenance of peace." These principles have been elaborated in regard to library and information services through a variety of professional statements on intellectual freedom, ethics and guidelines for services, of which many examples have been gathered on the IFLA/FAIFE Web site (IFLA/FAIFE, 1998)
- The most influential international statement has been UNESCO *Public Library Manifesto*. Through that *Manifesto* and other statements, UNESCO and IFLA have expressed the strong relationship between good libraries and healthy democracies. It has

built on a tradition which has gathered force since the ALA's adoption of the Library Bill of Rights on the eve of WWII. (ALA, 1939). It is of interest to us in this gathering to note that the release of the *Public Library Manifesto* by the UNESCO coincided with the South African shift to democracy. This timely document emphasized the principles of democracy and its relationship to public libraries. The *Manifesto* states:

> Freedom, prosperity and the development of society and individuals are fundamental human values. They will only be attained through the ability of well-informed citizens to exercise their democratic rights and to play an active role in society. Constructive participation and the development of democracy depend on satisfactory education as well as on free and unlimited access to knowledge, thought, culture and information. (UNESCO 1994)

- In this tradition, the 1973 IFLA Standards for Public libraries posits:
  - A democratic institution for education, culture and information;
  - The public library is a practical demonstration of democracy's faith in universal education as a continuing and life-long process in the appreciation of the achievement of humanity in knowledge and culture;
  - The public library is the principal means, whereby the record of man's thoughts and ideas and the expression of his creative imagination are made freely available to all (IFLA Section on Public Libraries, 1973, pp. 13-14).
  - Such statements give the public library an instrumental role in the strengthening of civil society through building social capital. The explicit inclusion of this role was one of the significant changes in the 1994 version of the *Public Library Manifesto* when compared to the 1972 revision and the 1949

original (Niegaard, 1994). It was later incorporated into the IFLA/UNESCO *School Library Manifesto* (IFLA Section on Libraries and Resource Centers and UNESCO, 2000).

- Equally important to IFLA's *Manifesto* is Article 19 of the Declaration of Human Rights which states that everyone has the right to freedom of opinion and expression, this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media.

- Like the IFLA *Manifest I* and *Article 19, The Glasgow Declaration* declares that the role of libraries and information services as "democratic institutions" impose certain responsibilities starting from a professional commitment to intellectual freedom as a core responsibility. That commitment is expressed through codes of ethics and demonstrated through individual and organizational practices including the promotion of its principles.

LIBRARY ACTIVITIES IN SUPPORT OF DEMOCRACY

Among the activities that libraries can engage in their efforts to promote and sustain democracy are the following:

- Library resources should be presented in many formats including those accessible to the visually disabled and increasingly in digital forms. Collections, access arrangements, document delivery services-the whole interconnected network of library operations seek to respond to that right.

- Access to information can be inhibited by conditions such as lack of resources or the capacities to access them, or contractual or technological limitations, or it can also be limited by active measures such as censorship

- Library services should provide access to the widest variety of materials, reflecting the plurality and diversity of society

- The commitment to anticipating and meeting community needs flows from the right to be informed
- Access to information should include programs for the house-bound, children and teenagers, women and various ethnic and religious groups. It could include programs in a variety of languages and those meeting the needs of indigenous peoples.
- Protection of each user's right to privacy and confidentiality with respect to information sought or received and resources consulted, borrowed, acquired or transmitted. Democracy implies the right to free speech. Libraries can play an important role by encouraging debates and establishing and hosting debating clubs. Programs can center on issues affecting people's livelihood such as sex and sexually transmitted disease. The important thing is to encourage people to debate, respect each others' opinion, learn the facts about issues by reading, listening, encourage and assist people with the use of the Internet to debate with others beyond the library's borders.

OUR COMMITMENT

Our professional commitment to freedom of access to information puts us in direct opposition to restrictive measures. We might not demonstrate publicly against them or place our lives at risk by outright opposition but we should do all in our power to resist rate restrictions on responsible intellectual freedom and freedom of expression.

Intellectual repression is an inevitable result of censorship. It can be imposed by others or be the result of self censorship, which might be adopted for fear of the consequences of expressing one's thoughts, or in response to pernicious danger of political correctness. (Lessing, 2001). Either way, it stultifies the imagination and imprisons the human sprit. (Byrne, A, 2004, p. 4). The responsibility of the library and its management is not to impose or allow political, moral, or religious views to dominate.

There should be no discrimination for any reason including race, national or ethnic region, gender or sexual preference age, disability, religious, or

political beliefs. Librarians should protect each user's right to privacy and confidentiality with respect to information sought or received and resources consulted, borrowed, acquired or transmitted.

Libraries should involve themselves in civic literacy; formal and informal (independent) learning as well as being a reference, research and information center to the community and its citizens.

By fulfilling all of these responsibilities, managers not only "help safeguard democratic values and universal civil rights," but also are expected to offer "essential support for independent decision-making, cultural development, research and lifelong learning by both individuals and groups."

Libraries are indispensable elements in an informed democracy

To play this important role in Africa, libraries must have the financial resources to develop collections that are viable both in their quality and quantity.

The print materials should be supplemented by electronic materials and by providing easy, free and unlimited access to the Internet.

Democracy depends both on freedom and accessibility of information and on an informed public.

Libraries must play a role with education to develop a public that is receptive, open, questioning, and discriminating. Reformed education and libraries can and must play a major part in developing such minds.

Libraries and librarians hold a key role in forming the lives of African children, the future citizens of a hopefully democratic society. Treat them with respect, trust them, and make them love books, knowledge, enrich their imagination, and help them live a dream.

International and NGOs should provide special technical and financial assistance to libraries and information systems in countries which have opted to democratic systems of government and civil societies.

BARRIERS TO THE FLOW OF INFORMATION INCLUDE:

- Language difficulties
- Information pollution from within and without
- Legal and administrative barriers hindering the flow of information between the Arab countries and the West, and among themselves
- Lack of trust. Democracy and freedom rely on trusting people. Unfortunately, many libraries in Africa and Third World countries don't trust their own people with library books and other materials
- Library decision-makers must give effect to their commitment in the context of budgetary, staffing and resource limitations, legal and policy constraints and the daily exigencies of running service organizations.
- Too much emphasis on religious education
- Separation of the sexes results in duplication or restriction of services
- Too much decentralization at the macro levels
- Little or non-existent library cooperation
- Absence of formally established librarians societies or associations

IMPEDIMENTS TO DEMOCRATIZATION IN LIBRARIES

- No board of trustees, or advisory boards, or committees
- No national policy for networking
- Poor preparation of staff
- Poor education for librarians
- Poor compensation
- Poor working conditions
- Lack of national standards

- Archaic policies
- Poor technology
- Lack of commitment at various levels of government

REFERENCES

Block, Marylane (June/July 2001). "Keepers of the flame," *American Libraries*, 32(6): 64-67.

Boorstin, Daniel J. *Alliance for Excellence, The Librarians Response to A Nation at Risk*, as quoted in Dickinson, Paul, *The Library in America: A Celebration in Words and Pictures*. New York: Facts on File Publications, 1986. p. 236.

Byrne, Alex (2004)." Library management," *Bradford* 25(1&2): 11.

Brown, Nicole E. (2004). "The Shift from Apartheid to Democracy: Issues and Impacts on Public Libraries in Cape Tow, South Africa," *Libri* 54: 169-178.

Ditzion, Sydney (1947). *Arsenals of a Democratic Culture*. Chicago: ALA.

Mind Extension University (1991). *Equal Access for All: Democracy and the Public Library.* Englewood, CO: Mind Extension University.

Hafner, Arthur W., ed. (1993). *Democracy and the Public Library: essays on Fundamental Issues*. Westport, CT: Greenwood Press. (*Contributions in Librarianship and Information Science*, no. 78*)*

Keane, John (1988). "Despotism and Democracy: The Origins and Distinction Between Civil Society and the State 1750-1850." Pp.35-71, in *Civil Society and the State: New European Perspectives*, edited by J. Keane. New York: Verso.

Karnich, Nancy (2001). *Libraries and Democracy: The Cornerstones of Liberty*. Chicago: American Library Association.

McLeish, Archibald (1991). "Libraries in the Contemporary Crisis," *Library Journal,* 116(11): 10-13.

Palm Beach Community College and Southeast Florida Library Information Network (1997). *Democracy in the Information Age, Who Should Govern the Web*. Lake Worth, Fl.: Palm Beach Community College. 4 videocassettes (170 min.); sd., col.; ¾ in

Pinnel-Stephens, June and Barbara Jones (June/July, 1999). 'Libraries a Misunderstood American Value, *American Libraries*, 30(6): pp76-79.

Schechter, Stephen (Spring 1990). "The Library as a Source of Civic Literacy," *The Bookmark*, pp. 176-182.

Siegle, Joseph, Micheal M. Weisntein, and Morton H. Halperin (Sept.-Oct. 1994). "Why Democracies Excel," *Foreign Affairs*, 83(2): 57-85,

Torrey, Jesse. *The Intellectual Torch* (1815); reprinted Woodstock VT, Elmtree Press, 1912), as quoted in Ditzion, Sidney H., *Arsenals of a Democratic Culture*. Chicago: ALA, 1947. p. 58.

Turfan, Barbara, et al. (1995). Emerging Democracies and Freedom of Information; proceedings of a Conference of the International Group of the Library Association (IGLA), Oxford, September 1994. London: library Association. 174p.

Tyckoson, David A. (April 2000). "Of the People for the People: Public Libraries Serve Democracy," *American Libraries*, 31(4): 40-42.

UNESCO Public Library Manifesto (1994). International Federation of Library Associations and Institutions (IFLA) http://www.ifla.org/VII/s8/unesco/eng.htm. [viewed March 4, 2006]

KNOWLEDGE MANAGEMENT: THE EMERGING CHALLENGES FOR THE LIBRARY AND INFORMATION PROFESSIONALS

S.C. Otenya and C.M. Nyamboga

Introduction

The concept of knowledge-based economy has established its firm roots in the global market. The growth of interest in knowledge management (KM) has essentially been contemporary with that of increasing use of the Internet, intranets, teleconferencing and videoconferencing. The Internet is a huge repository of information, largely illustrated. The ease and flexibility with which information is available from the Internet is most commonly described as "information overload". A library, of whatever type and size, it may be- is the first place for organizing knowledge. The pace, at which the non-print media are producing documents, is a matter of concern to library professionals. Each library model has its pivotal role towards organizing knowledge and disseminating it. For instance, the material library has a responsibility towards preserving the information of national importance and heritage and disseminating it. Academic library models are expected to support substantially the information supply to students, academicians and researchers, to achieve their academic goals.

The corporate library models provide information support to the organizations to withstand the global competition. Thus, the hitherto "organization of knowledge" has rapidly moved to the stage of "information and knowledge management" and has established itself as a key issue libraries. While putting in place Knowledge strategy, the traditional variety of collection is extended to include information from non-print and online media. This has made the attention to focus on the quality of seamless flow of information. Users of the 21st century expect information they need, right at the desks, whether from online databases, multimedia, distributed web resources or the intranets. Rightful use of KM practices would ensure efficiency, accuracy and consistency in disseminating information because it enables distributed teams to search, apply, share and publish information across the geographic boundaries.

Library and information centres (LICs) have the noble mission of imparting education to all the people of the nation irrespective of caste, sex, age, educational level. With the use of the preserved rich national heritage of intellectual capital in all forms (books, three-dimensional objects, maps, charts, floppies, CD-ROMS, cassettes, etc) and other sources of information, the library is in a position to provide a link within the society and thus reshape the future society. This paper aims to contribute to knowledge management (KM) in libraries as a strategy of getting the right knowledge to the right people at the right time in general and specifically to Kenya.

CONCEPTS, IMPORTANCE AND CHALLENGES OF KM

There is no uniform thinking about or a precise definition of KM in the published literature. However, the literature is equivocal on the fact that KM has no unanimously accepted definition. KM like many buzzwords, defies a crisp definition. In other words, definition depends on who states it. While for some, it is…. adding value to the information available inside an organization, for others it is a … strategic initiative to stay ahead in competition. (Bock, Wally)

The term "knowledge management" has been borrowed from the corporate world, which was used as a strategy to seek as well as capture the knowledge that resides in people's heads and consciousness to help business remain in the progressive path within a competitive environment. The main target of application of KM in profit-seeking organization is to gain competitive advantage and increase turnover to make a profit by enhancing and improving operations systems.

Today's practice in KM attracts some significant demerits. Following are some of these significant demerits:

- The existing knowledge is captured and capitalized only to a low degree because knowledge is messy in character.
- Time factor- many employees are willing to document and use existing knowledge but pressure of work in enterprise never permits them.

- Each and every employee should be allowed to participate in management but not in real practice and as a result, that un captured knowledge can't be utilized for knowledge management purposes.

Knowledge management is therefore a conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organizational performance. Apart from being aimed at cupping knowledge, KM should be shared across any working systems and beyond, putting aside levels of the employees. KM can also help to evaluate the overall performance of the organization not at present but in future. However, KM principles should be applied to non-profit seeking organizations such as government bodies and statutory boards to achieve different objectives within the setup. It can also be used to LICs simultaneously for communicating knowledge between different levels of management and those who are directly involved to improve work processes as well as in service sectors. For all types of sectors in organizations, there are many challenges to address in adapting to this shift. They include:

- The very essence of doing business in changing- collaboration becomes the way for enabling organizations to share and utilize the knowledge.
- Organizational structures need to change it. Hierarchies need to be broken down and networked organizations be developed.
- Values of the organizations/institutions need to change to reflect reliance on people, knowledge, and information.
- Nearly emerging information and communication technology needs to be harnessed with a clear focus on improving knowledge and information flows.
- In any knowledge-based economy, speed is also a factor that cannot be avoided. Thus the capability to reduce product /service time, to make quick decisions, to use new technologies, etc are some of the key factors that have impacted success in organizations.

APPLICATION OF KM IN LICS IN KENYA

Basically, an overview on knowledge management in the Kenyan scenario has been narrowed to Academic libraries and research institutions. Academic institutions extend to middle level colleges..

The core elements of library and information centres are building, equipment, furniture, documents, professional staff and customers. All these have been integrated in such a manner that no user is deprived of his /her legitimate demand of knowledge provided by the library staff.

The University Libraries surveyed in Kenya include Egerton, Jomo Kenyatta, Moi (All public) and United States International University (USIU) and Catholic University of East Africa libraries (Private). Middle level college libraries investigated included Rift Valley Institute of Technology and Kenya Medical Training College (KMTC) Nakuru. Kenya School of Monetary Studies, ICIPE and the World Agro Forestry Centre (ICRAF) are among the research-oriented libraries investigated.

According to the authors, these averagely correct analysis was reached through what they call impromptu interviews administered to the users randomly on issues like library building, equipment, furniture, documents, professional staff and the customers of the library are viewed in terms of fulfilling KM that is in place in the relevant institutional libraries. These results are illustrated on the table and diagrams below:

Table 1. Grades 1-5 indicates the level of KM on the institutional libraries mentioned below; 5- standard, 4- Good, 3- Medium, 2- in Progress, 1-Un decided

Institutions	**Equipment**			**Furniture**		**Documents**		**Level of Skills**	
	Internet/e-mail	OPAC/CD-ROM	Computers/Cd-roms	Tables-modern	Chairs-modern	Books-Up-to date	Journals/ Periodicals-Up -to date	Professional-staff- Search & retrieval	Users-Search & retrieval
E.Univ.	2	2	4	4	2	3	3	3	3
J.K.Univ.	3	3	4	4	4	4	3	4	3
Moi Univ	4	5	5	4	4	3	3	5	3
UoN	4	4	5	4	5	4	4	4	3
USIU Un	5	4	5	4	4	4	5	5	4
Catholic Un	4	4	5	4	4	5	4	4	4
R.V.I.S.T	3	2	3	3	2	3	2	3	2
KMTC	2	3	3	3	3	3	3	2	2
KSMS	4	4	5	5	5	4	3	3	4
ICRAF	5	3	4	5	5	4	4	5	5

KEY:

1. E. Univ.- Egerton University 2.J.K.Univ. – Jomo Kenyatta University
3. Moi Univ.- Moi University 4. UoN.- University of Nairobi
5. USIU Un - United States International University
6. Catholic Un. – Catholic University of East Africa
7. R.V.I.S & T - Rift Valley Institute of Science & Technology
8. KMTC - Kenya Medical Training College (Nakuru)
9. KSMS - Kenya School of Monetary Studies
10. ICIPE - international centre of insect physiology & ecology
11. ICRAF - International Centre for research In Agro-forestry (World Agro Forestry Centre)

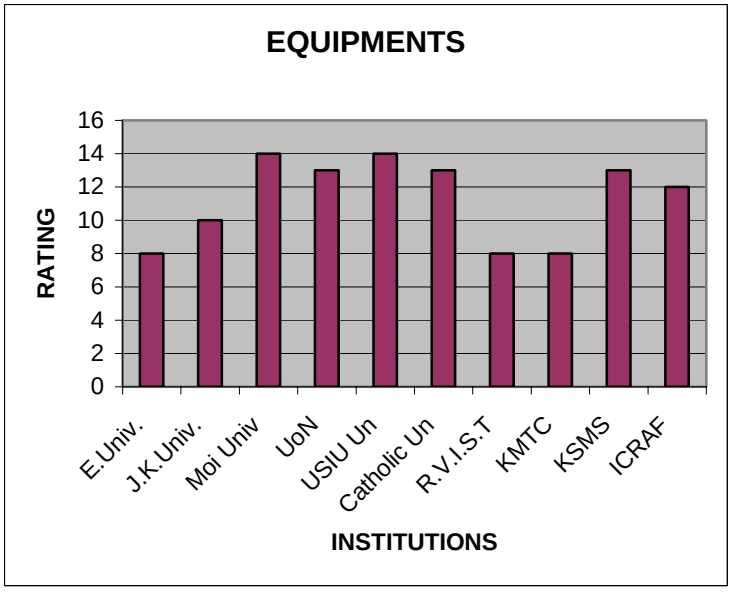


Figure 1: level of equipments

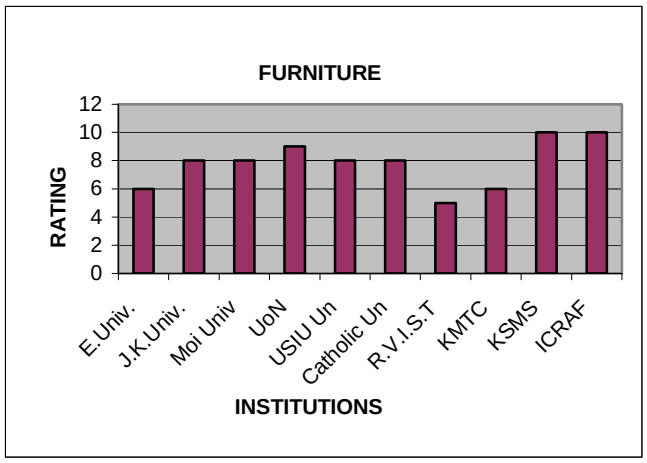


Figure 2:Furniture

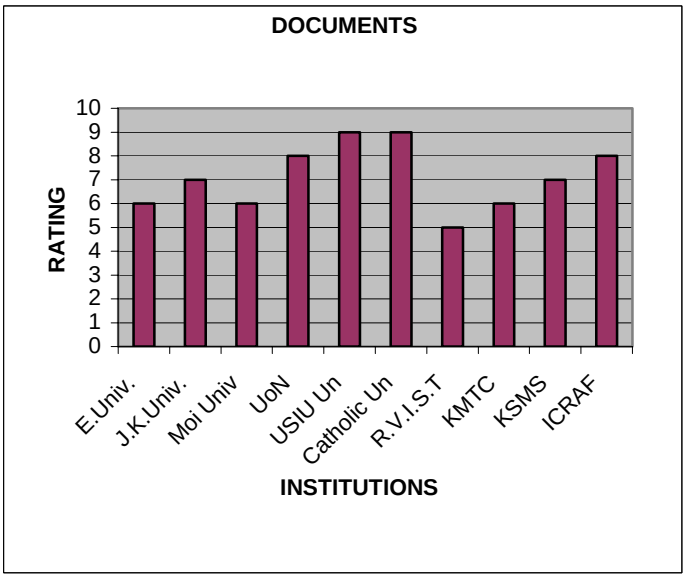


Figure 3: Documents

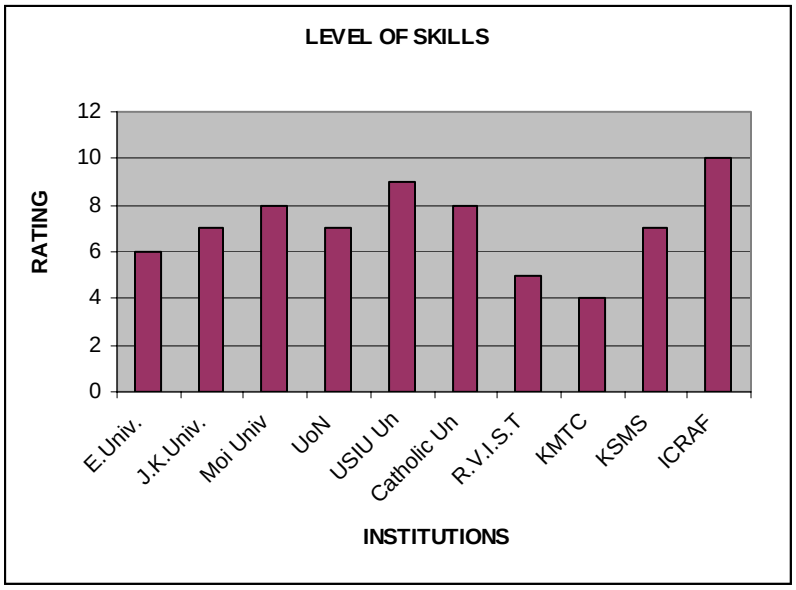


Figure 4: Level of skills

The table and diagrams above indicates that the libraries of United States International University and catholic Universities are managing the indicators provided on KM well than their counter parts in the Public. The two are privately funded universities. This is also the case to Kenya school of Monetary studies (sponsored by Central Bank of Kenya) and ICRAF (A world Forestry Research Centre). In other words there is consistency in funding these libraries thus users satisfaction is handled well ranging from the Equipments to User skills. It may also be observed that the most poorly funded libraries are those of middle level institutions as solely they depend on Government coppers hence managing knowledge is a difficult hurdle.

Based on the above table and diagrams, the authors observe and agree that aims of any library and information centres at what level is to maximize the use of limited resources and optimum satisfaction of users by knowledge management and by improving efficiency of functioning. However, it is also observed that the library's collection management could be fruitful

when the top management is able to practice current knowledge management in the organization/institution for deriving its goal. Apart from a few of these institutions which are still far behind in terms of managing knowledge, many of them are no longer functioning as repositories of information materials but cruising at the right pace with the changing technologies. The objectives of such institutions /organization are to nurture a reading culture/ society (reading society depends on the library systems, i.e. publicity, academic library or special library) and also intend to provide information free of cost or with minimum cost so long as it promotes reading and knowledge. With the rapid information explosion globally and need to remain library competitive, it is very essential to restructure the traditional library function to meet the needs of the users in the 21st century.

The aforementioned LICs and the rest should spearhead the formulation of new policies, strategies and implementation of KM for rendering qualitative services to its customers for increasing users' faith in the organizations/institutions. The authors recommend the that following be performed by the library and information professionals within and beyond:

- Establish an adaptive library system
- Create a network among the library and information centres within and beyond an individual library system and link them with each other for providing information services through computer networking.
- Offer quality service as per users' demand.
- Initiate symbiotic linking with Government, Company and the Users as per library system.
- Make LICs, a global knowledge hub for offering information.

BARRIERS TO IMPLEMENTATION OF PROPER KM SYSTEM

Knowledge management is a difficult process to implement particularly for an organization whose employees have been conditioned to understand that knowledge and power are synonymous. In such scenarios, sharing of knowledge and information is likely not to materialize whether in

departments or even among colleagues. This is because the staff tends to hoard information, practice secrecy and unnecessary confidentiality prevails as it prevents the so-called privileges, and hence the "superiority" of there enlightened file and rank positions, from being taken away from them. In his study, Tarapanoff (1999) found that there are some barriers to the implementation of KM in any organization/institutions that include:

- Ignorance- not knowing who has the right information required for the job;
- Lack of time to find out and absorb the best practices recommended;
- Lack of a relationship between the source and recipient of knowledge
- Time lag taken to implement best practices recommended across departments

To overcome the above barriers while implementing KM in both local institutions observed and those of elsewhere, the authors have suggested as follows:

- Setting and placing up the right team in the right areas of work at the right time without biases.
- Developing professionals by training, introducing new technologies and being literate on use and users' point of view.
- Establishing the sharing of knowledge system between units as well as among organizations as a whole through cooperation of professionals.

NEW ROLE OF LIBRARY AND INFORMATION PROFESSIONALS IN KM

Agreeably, all organizations/institutions of learning and research are changing their strategies/policies in terms of managing and delivering information to their clients. This is due to the global competition as well as retaining prosperous, enhancing and improving operation methods, quality control and ultimately increasing profits. Hence, it is at the strategic/policy making level-in KM planning team where the chief knowledge officer (CKO) is found to be very rare in any organization/institution. Suffice it to observe that most of the information professionals are not fully aware of

the strategic understandings about the organizations/institutions they are working for.

At present all organizations/institutions of learning and research are gearing towards building an infrastructure that enables people share explicit knowledge- be it through meetings and Discussion groups (DG), documents, e-mail, seminars and project files. Information professionals have began to broaden their horizons, change their attitude to obtain opportunities of KM initiatives in the organization/institutions. However, to succeed as information professional in any knowledge environment, following should be taken into consideration:

- Apply own skills and experience confidentially, in unfavorable and critical situations to tackle the hurdles.
- Take note of the goals and objectives of institutions/organizational strategic plans, challenges, products and services where knowledge and information can add value.
- Re-engineer existing skills and experiences of the information professionals for capturing individual knowledge and information that may be shared with others to get better services and results than before.
- Create knowledge culture within the organization/institution to achieve the objectives successfully in a competitive environment.

CONCLUSION

In business circles, the term KM is not a new concept as it is in institutions of higher learning and research. In Africa and more so Kenya, this concept is quite new. KM aims to capture knowledge that resides in the abilities of people, records and gathers the intellect of its employees. In this context, it also disseminates knowledge and information among employees of these institutions/organizations for the best practices that have been enhanced while gaining more profits or providing better services.

Notwithstanding, library and information professionals need to consider strengthening the library systems (Academic to Special) and also while

improving the services, the principles of KM should be accommodated in LICs. Meaningful infrastructure, adequate budgets, fair remuneration, latest ICTs training for information professionals/document list and users, sharing of knowledge among the staff are some of the prerequisites of KM. The role of the library and information professionals has to be redefined in view of suiting into KM. These professionals must acquire skills and knowledge that would facilitate them cope intelligently and objectively with KM applicable and controllable at Library and information centres (LICs).

REFERENCES

1. Bock, Wally. Knowledge Management.http://www.competie.com

2. Tarapanoff, A. (1999). The knowledge society and information professional: challenges and opportunities. FID review.1, 1; 28-36.

3. Teng, S. and Hawamdeh 2000, S. Knowledge Management in public libraries. Adlib Proceedings.54, 3; 2002; 188-197.

4. http://www.knowledgebridge.com.

FACILITATING KNOWLEDGE MANAGEMENT: OPPORTUNITIES FOR LIBRARIANS IN A CHANGING WORLD

Retha (MMM) Snyman and Hazel van Rooi

Abstract

In the knowledge economy the competitive edge of individuals and organisations has increasingly become dependent on their ability to apply knowledge and to leverage it in a continuous way. Librarians by nature of their training, focus and information backgrounds are among the most able to facilitate the management of knowledge in organisations.

By means of a content analysis of the literature, knowledge management opportunities for librarians were identified. In order to determine to what extent librarians utilise these knowledge management opportunities an evaluative analysis of the results of two empirical studies was conducted. It was concluded that the primary function of librarians within the context of knowledge management is still the provision of access to information. This signifies a lack of promotion of the skills and values of librarians to the management of organisations.

INTRODUCTION

Knowledge has always been at the heart of work and action of people and organisations. However, in the new economy (known as the knowledge economy) land, capital, and machinery is no longer decisive in a worldwide market of products and ideas. The competitive edge of individuals, organisations, and even nations has increasingly become dependent on their ability to apply knowledge and to leverage it in a continuous way. Bahra (2001:8) refers to knowledge as a "thermonuclear weapon of the 21st century", asserting that it is more valuable and more powerful than natural resources, big factories and fat bankrolls" Therefore, it is important that knowledge and the sharing thereof be managed effectively within organisations.

Davenport *et al.* (cited by Rowley, 1999: 418) states that "Knowledge management is concerned with the exploitation and development of the knowledge assets of an organisation with a view of furthering the organisation's objectives" Knowledge assets include employees' expertise and experience, which need to be captured; information services and sources; and information technology facilities. Therefore, knowledge management has become important in organisations as it leads to improvement in the use of information and knowledge to achieve organisational goals and contributes to organisational success, creativity, speed of decision-making, and quality of services.

"Knowledge management is perceived to offer a significant enhancement in the role of the librarian" (Southon and Todd, 2001: 259). Librarians by nature of their training, focus and information backgrounds are among the most able to facilitate the management of knowledge in organisations. "Not only are they skilled at selecting and searching information sources, they also have the know-how to articulate and analyse information needs, evaluate the quality of information, extract and summarise important information, and relate and package the information found for a specific project or problem" (Choo, 2000:397). However, to play an important role in knowledge management they should offer more than just information handling abilities. They need to move beyond the traditional roles of the librarian, thus improving their image and enhancing their role.

A body of literature has emerged that explicitly addresses the opportunities for librarians within the context of knowledge management. The aim of this paper is to address the opportunities identified in the literature, to determine who identified these opportunities (researchers[5] or practitioners[6]) as well as to what extent librarians utilise these opportunities in order to enhance their role in organisations.

---

[5] Researchers: Faculty members in schools or departments of Library and Information Science or other disciplines

[6] Practitioners: Librarians or information service workers or managers, either currently employed or retired.

RESEARCH METHODOLOGY

The method utilised to identify the knowledge management opportunities for librarians, was content analysis, which is defined by Powell (1997: 50) as "a systematic analysis of the occurrence of words, phrases, concepts etc. in books, films, and other kinds of materials." Content analysis has been used in this study to determine how frequently certain phrases appear in the journal articles.

The unit of analysis to identify the opportunities for librarians in the literature were journal articles indexed by *Library Literature* under the descriptors "knowledge management" and "librarian*" and "opportunit*" or "challenge*", and published between 1994 and 2004. Twenty-eight full-length journal articles written in English only, in addition to those which were 70-80% relevant (as indicated by the database), were selected. Book reviews, editorials, letters to the editor, personal and conference news, and advertisements were excluded.

The second part of the research consists of what Mouton (2001:158) calls implementation evaluation research. The sources of data to determine to what extent librarians utilise the knowledge management opportunities identified in the literature, were the results of two empirical studies – one conducted in South African law firms, lawyers' associations and institutions and other organisations with law departments or divisions (Du Plessis, 2004) and the other one conducted in the academic libraries of three South African universities (Stieger, 2005).

RESULTS OF LITERATURE STUDY

Opportunities for librarians as identified in the literature

For the purpose of the paper opportunities identified by the sample (28 journal articles) are divided into the following five broad categories:

Facilitating an environment conducive to knowledge sharing

Facilitating an environment conducive to knowledge sharing was identified by Abell (2000), Abram (1997), Cates (2001), Choo (2000), Hayes (2004), Marshall (1997), Perez (2002), Rowley (2003), Schwarzwalder (1999), Todd and Southon (2001), and Townley (2001).

This opportunity aims to establish an environment that ensures that information and knowledge within and about the organisation is identified, captured, shared and used. Such a climate allows easy access to information for everyone in the organisation and encourages the open sharing of tacit knowledge (experiences and expertise in people's heads) among employees. This type of situation leads to the creation of new knowledge and voluntary contributions to knowledge sharing activities intended for organisational benefits. Various tools and techniques enable the creation of an environment conducive to knowledge sharing. These include *inter alia* Communities of Practice, best practice databases, expert directories/yellow pages, knowledge maps, the intranet and portals.

Responsibilities acknowledged for librarians include: to create awareness about the benefits of knowledge sharing, encourage teamwork, establish platforms which are conducive to informal discussions and interactions (e.g. development of Communities of Practice), build and maintain expert and best practice databases, become active in the design and development of the organisational intranet and portals, and to take the lead in developing and/or enhancing a knowledge sharing culture in the organisation. Facilitating this kind of environment involves social interaction and collaboration with different experts for example senior management and technology professionals. The challenge for librarians lies in obtaining top management's buy-in for support and approval of knowledge management initiatives and changing employees' attitudes and behaviour towards knowledge sharing.

Managing the corporate memory

Abram (1997), Breen, et al (2002), Butler (2000), Cates (2001), Choo (2000), Dillon (1999), Gulati and Raina (2000), Hayes (2004), Henczel

(2000), Holt (2002), Kim (2000), Koina (2003), Marshall (1997), Perez (2002), Todd and Southon (2001), and Townley (2001) identified managing the corporate memory[7] as a key function and opportunity for librarians.

The librarian's responsibilities in managing the corporate memory include:

- Conducting an information and knowledge audit which includes:
  - Identification of information and knowledge needs of the organisation and the resources and services currently provided to meet these needs
  - Mapping of information flows within the organisation and between an organisation and its external environment;
  - Analysis of gaps, duplications, inefficiencies and over-provision which enables the identification of areas where changes are needed
- Developing information and knowledge databases, e.g. expert databases or knowledge repositories
- Utilising a combination of technologies such as the intranet and groupware for speedy information access and dissemination.

From the above-mentioned it is clear that librarians need to get involved in issues that have not been part of their tasks previously, and change and adapt their duties from gatekeepers to gateways of information to fulfil the role of knowledge manager successfully. Rather than performing administrative work or acquiring, organising and providing information on request, they should perform intellectual work such as the management of contributions to knowledge repositories by evaluating and filtering information. In addition, librarians should ensure that control measures are in place for the use of organisational knowledge and that intelligence strategies are marketed.

[7]Corporate memory refers to the collective tacit and explicit knowledge (processes and products) within the organisation, which are worth sharing and preserving for later re-use.

Transfer of information management and related skills to a new context linked to business processes and core operations

Transfer of information management and related skills to a new context linked to business processes and core operations, was identified by Abell (2000), Abram (1997), Barron (2000), Butler (2000), Cates (2001), Chapman and Abell (2000), Choo (2000), Gulati and Raina (2000), Hayes (2004), Kim (2000), Marshall (1997), Newton and Dixon (1999), Perez (1999 & 2002), Rowley (2003), Southon and Todd (2001), Todd and Southon (2001), Townley (2001), Webb (1999), and Wittwer (2001).

Traditional information management principles include organising, retrieving, repackaging and utilising information, which are important for effective knowledge management applications. Librarians thus have the opportunity to play an important role in knowledge management based on their training and experience, developed and used for many years. However, they need to extend and renew these principles and skills and link it with the processes and core operations of the business in order to be successful in knowledge management activities. For this reason, it becomes imperative for librarians to understand the nature of the organisation, its processes, clients and the role of information and knowledge.

The duties of a librarian is to select and use information that is most critical to achieving organisational goals, and process such information in order to make an impact on the service of the business - for example process and provide information to managers to make informed and intelligent decisions that will benefit the organisation. Librarians can further demonstrate their relevance in achieving organisational goals through taking on the roles of facilitator and consultant who supply specialised advice and assistance in evaluating, selecting and improving the use of information resources.

Librarians should therefore understand and express the value of their skills in terms of organisational goals, transfer them to the organisational environment instead of hiding and protecting them. In other words they should have the ability to change and adapt their traditional style of work and move from the background to the center of the organisation.

Additionally, they need to become guides and navigators for the exploration of the masses of information available i.e. develop new services and products to improve information services and achieve organisational objectives. All of the above-mentioned examples indicate that librarians should ensure their own professional development in order to cope with a continuously changing working environment.

The challenge for librarians is to think more broadly, contextually and strategically, in terms that are more likely to advance their roles, image and status in the organisation rather than delivering a support service. They need to gain management skills and business knowledge, since a lack thereof has been found in literature to be one of the main causes for the librarian's low status and image by employers. This perception will change if librarians equip themselves with professional competencies i.e. lateral thinking skills, strategic planning abilities, marketing capacity, etc. and obtain a deeper and more complete understanding of how the organisation creates, shares and uses knowledge. They should align the goals of the library with those of the organisation and focus on adding value to services to ensure more time is spent turning information into knowledge and less on seeking information.

Development of corporate information literacy

Abell (2000), Abram (1997), Angeles (2003), Barron (2000), Chapman and Abell (2000), Choo (2000), Gulati and Raina (2000), Hayes (2004), Newton and Dixon (1999), and Wittwer (2001) identified the development of corporate information literacy as an opportunity for librarians in knowledge management.

The concept corporate information literacy includes computer literacy but also refers to the ability of all employees within an organisation to create, access, organise, store, share, use and understand information. Employees should be able to understand and use the systems and tools that are available to create and evaluate information in order to build knowledge that will lead to the enhancement of organisational performance.

Librarians have the potential to have a significant impact on developing corporate information literacy by assisting employees and users to:

- Access, gather, organise and communicate information.
- Navigate and integrate information sources, including electronic resources, more meaningfully.
- Assess and evaluate information found or knowledge shared.
- Create, record, store and archive information.
- Identify the potential value that relevant information can add to business processes.
- Properly use information technology facilities.
- Filter and discard irrelevant information.
- Make decisions based on validated information.
- Define organisations' information needs and provide suggestions on how to satisfy these needs.

Librarians should be involved in the provision of information literacy training, educate users to become computer literate and to make effective use of networked resources. This opportunity requires that librarians have enough technical skills to train others. Additionally, they should be aware of the enabling technologies (e.g. knowledge management tools) and how to apply them to promote knowledge creation and sharing in the organisation.

Management of information in a digital/electronic environment

Management of information in a digital/electronic environment was identified by Adams (2000), Angeles (2003), Breen et al. (2002), Chapman and Abell (2000), Choo (2000), Dillon (1999), Hayes (2004), Marshall (1997), Newton and Dixon (1999), Perez (1999), Rowley (2003), and Wittwer (2001).

Librarians can demonstrate their potential to distinguish themselves as experts in the organisation of information mediated by technology through this opportunity. Their training, skills, knowledge and experience of cataloguing, classification and indexing make them most skilled for

managing information in a digital environment. Additionally, librarians understand the information seeking behaviour of users, which give them an advantage over those people who deal exclusively with the technology of information because they add human value to information. All of the above-mentioned conditions are beneficial in organising and managing online information such as creating intranet and Internet sites or assisting in database design.

Information technology is acknowledged as an important enabler for effective knowledge management initiatives. The focus of this opportunity therefore is on adopting the enabling technologies and facilities and applying them in order to promote improvements to knowledge creation and sharing activities in the organisation. This generates the need for librarians to develop skills in handling Internet hardware and software to facilitate end-user access to online information. Librarians' responsibilities in managing information in an electronic environment include: setting standards for the overall information architecture, selecting and packaging information in a way that maximizes its usefulness (e.g. add index terms or cross-references), informing users about free, full-text online journals, providing training on how to conduct online research (best practices in Internet searching), constructing thesauri to classify and structure information, training staff to efficiently and cost-effectively use online databases, and publishing knowledge through the various available channels.

Based on the literature study the following knowledge and skills are required for the above-mentioned knowledge management opportunities: leadership skills, group facilitation skills, communication skills, management skills, business knowledge, lateral thinking skills, strategic planning abilities, marketing skills, technical skills and knowledge of enabling technologies. It is also expected of librarians to be ambitious, creative, flexible, pro-active and risk-taking.

AUTHOR TYPE

In acknowledging the author type, only the first author was considered in cases where more than one author wrote the article. Practitioners comprised 68% (19) and researchers 32% (9) of the sample. The table below displays results found regarding opportunities identified and the author type.

Table 1: Opportunities for librarians (n=28)

Opportunities for librarians	**Author type**	
	Practitioner (n=19)	**Researcher (n=9)**
Facilitating an environment conducive to knowledge sharing	37% (7)	44%(4)
Managing the corporate memory	53%(10)	67%(6)
Transfer of information management and related skills to a new context linked to business processes and core operations	63%(12)	78%(7)
Development of corporate information literacy	32%(6)	33%(3)
Management of information in a digital / electronic environment	47%(9)	33%(3)

Both researchers and practitioners identified opportunities for librarians in the five broad categories. However, except for the category *Management of information in a digital/electronic environment*, researchers are pro rata more aware of opportunities than practitioners. This can be based on the fact that they mostly utilised literature reviews and publish theoretically grounded articles. This is how they obtain a broader perspective of opportunities that exist in comparison to practitioners who are trapped in their work situation and as a result base findings on what they experience in the work environment.

RESULTS OF THE EVALUATION RESEARCH

The extent to which law librarians utilise the knowledge management opportunities

The objective of Du Plessis' (2004) study was *inter alia* to observe what librarians regard as their knowledge management role and competencies in a legal environment. Eighty questionnaires were mailed to a random sample of law librarians employed by law firms, lawyers' associations and institutions and other organisations with law departments or divisions. As the size of law firms could have an impact on the results, a random stratified sample was selected. The sample was generated from the Hortors electronic directory of law firms in South Africa, which gave the facility to select certain-sized firms – thus a balanced representation of small, medium and large sized law firms was ensured. Every effort was taken to ensure that the sample covered a wide area of the Republic of South Africa so that the figures would not be biased with regard to urban versus rural practices. A total of 66 responses were received resulting in an excellent response rate of 82%.

Participants' responses on a sub-set of questions aimed at determining the services offered by the organisation's library indicate that conducting information searches and research on behalf of individuals as well as providing local network access to electronic databases constitute the primary services offered (83%-100%). In the second category (ranging from 64-71%) responses indicate services include computer literacy training, remote network access to electronic databases, and legal research skills training. The third category, (49%-57%), represents the borderline services, including information literacy training, Internet search training, and services such as the selective dissemination of information (SDI). Thirty-seven percent of participants indicate the synthesis of research material as a library service, and 22% of participants indicate that the library does provide competitive intelligence searching.

The questionnaire also required of participants to give an indication of the extent to which their organisations view it the library's responsibility to perform the following tasks: Internet searches; electronic database

searches; web design, development and maintenance; intranet management; information literacy training; and legal research skills training.

From the results it was clear that organisations mainly expect librarians to perform information searches, e.g. Internet and electronic database searches, either to a large extent, 68%-70%, or to a moderate extent, 25%-30%. Training (legal research skills training and Information literacy training (35%-43%)) also seems to be the responsibility of the library, but it is not the main responsibility. A somewhat substantial number of participants indicated some responsibility (19%-21%) or moderate responsibility (14%-19%) to participate in or manage the organisation's web site or intranet.

In the questions focusing on the organisation's views on the role and value of the library and the legal information professional, participants were asked to indicate the value that management place on specific knowledge management roles or contributions of librarians. The role perceived to be most valued by management is that of legal research[8] support (79%). Their roles as contributor to the strategic goals of the organisation (some value: 40%; Valuable: 21%) as well as the development of intellectual assets (Some value: 29%; Valuable: 36%) are less valued by management.

The extent to which university librarians utilise the knowledge management opportunities

The empirical information was obtained by means of 35 semi-structured interviews and three focus group discussions with librarians in academic libraries of three South African universities. The purposive sampling method was used for the selection of the universities as well as the participants.

In addition to traditional roles (such as structuring and standardising tools to provide access to information, training in the use of the tools,

[8] Legal research implies researching the law as found in the primary and secondary sources of law

repackaging of information and selective dissemination of information) the librarians who were interviewed also identified a number of new roles within their libraries

- Creation of an awareness of the importance of knowledge sharing by setting the example and communicating the advantages of knowledge sharing.
- The provision of opportunities for knowledge sharing, e.g. the arrangement of meetings, informal discussions/conversation, in-house training sessions; the use of instructional web pages, e-mail, list serves, portals and intranets; and establishment of Communities of Practice
- Assistance in data base design.

In the execution of the above-mentioned activities (to create an environment conducive to knowledge sharing) the focus was still only on their specific library. In the process they missed the opportunity to establish a knowledge-sharing environment within the broader university structure.

The librarians are involved in information literacy training of students and academic staff. However, the training is limited to people visiting the library and utilising its facilities. In this way they do not contribute to enhancing the ability of all employees of the universities to create, capture, organise, store, access, share, use, publish and understand information.

Although the librarians are aware of the goals of the university and they have the potential to distinguish themselves as experts in the organisation of information, they are not involved in the selection and processing of information that is most critical to achieving the universities' goals. They also do not recognise their role in identifying the information and knowledge needs of the university; the mapping of information flows within the university and between the university and its external environment. The analysis of information and knowledge gaps, duplications, inefficiencies and over provision of information; and the management of contributions to knowledge repositories by evaluating and filtering information, adding index terms or cross-references are also not

regarded as their responsibility. Therefore they do not contribute to the management of the corporate memory of the university.

CONCLUSION

The analysis of the knowledge management roles and activities of the two groups of librarians revealed that the primary function of law and university librarians is still limited to the provision of access to information (be it the organisation of information and/or conducting of information searches and/or training of people to access information). In the process these librarians do not contribute to the management of the corporate memory of the organisation. The lack of transfer of knowledge management skills to broader business processes and core activities of the organisation signifies a lack of promotion of the skills and values of librarians to management and the organisation. Furthermore, librarians do not equip themselves properly with professional competencies such as leadership skills, marketing skills, lateral thinking skills, strategic planning abilities, etc. They should align the goals of the library with the goals of the organisation and obtain a deeper and more complete understanding of how the organisation creates, shares and uses knowledge.

For librarians to play a role as facilitators of knowledge management, they must keep in mind that although traditional skills are invaluable, they need to apply these skills in a new and broader context. Considering the knowledge and skills identified during the literature study, they also need to extent their existing knowledge and skills and develop and implement tools and techniques that ensure that less time is spent on the search for information and knowledge and more time is available for employees to share knowledge. Abell (2000:41) states that librarians "have a unique opportunity to participate in the field of knowledge management provided that they

- Understand the environment in which they are working, with its drivers and processes.
- Understand and articulate the value of their skills to that environment.
- Grasp the opportunity to transfer their skills to their environment – rather than hoard and protect them".

Finally, librarians should also pay attention to studies conducted by researchers in order to become aware of opportunities they were not able to identify themselves.

REFERENCES

Abell, A. (2000). "Skills for knowledge environments". *Information Management Journal*, 34 (3), 10-12.

Abram, S. (1997). "Post information age positioning for special librarians: is knowledge management the answer?" *Information Outlook*, 1 (6), 18-23.

Adams, K.C. (2000). "My secret life as an ontologist". *American Libraries*, 31 (9), 40.

Angeles, M. (2003)."K-logging: supporting KM with web logs: Michael Angeles explains how K-loggers can advance knowledge management with the support of librarians". *Library Journal*, 128 (7), 20-22.

Barron, D.D. et al. (2000). "Knowledge management for the new millennium: the next step for school library media specialists". *School library media activities monthly*, 16 (5), 48-51.

Breen, C. et al. (2002). "New information management opportunities in a changing world". *Library Review*, 51 (3/4), 127-138.

Butler, Y. (2000). "Knowledge management: if only you knew what you knew". *Australian Library Journal*, 49 (1), 31-42.

Cates, J. (2001). "CKO wanted". *Business & Finance Division Bulletin*, 118, 25-28.

Chapman, D. & Abell, A. (2000). *Raising expectations: information professionals in the knowledge economy.* Retrieved June 13, 2003, from http://www.tfpl.com/assets/applets/LAR_Oct_2000.pdf

Choo, C.W. (2000).“Working with knowledge: how information professionals help organisations manage what they know”. *Library Management,* 21 (8), 395-403.

Dillon, M. (1999). “Knowledge management opportunities for libraries and universities”. *Library and Information Science Annual,* 7, 3-11.

Du Plessis, T. (2004). *Information and knowledge management in support of legal research in a digital information environment* (D Litt et Phil thesis, University of Johannesburg) (Unpublished).

Gulati, A. & Raina, R.L. (2000). “Professional competencies among librarians and information professionals in the knowledge era”. *World Libraries,* 10 (1/2), 11-18.

Hayes, H. (2004). “The role of libraries in the knowledge economy”. *Serials*, 17 (3), 231-238.

Henczel, S. (2000). “The information audit as a first step towards effective knowledge management: an opportunity for the special librarian”. *Inspel,* 34 (3/4), 210-226.

Holt, G.A. (2002). “A way to the future: reorganizing library work (so librarians become knowledge managers)”. *The Bottom Line,* 15 (1), 29-31.

Kim, S. (2000). “The roles of knowledge professionals for knowledge management”. *Inspel,* 34 (1), 1-8.

Koina, C. (2003). “Librarians are the ultimate knowledge managers?”. *The Australian Library Journal,* 52 (3), 269-272.

Marshall, L. (1997). “Facilitating knowledge management and knowledge sharing: new opportunities for information professionals”. *Online,* 21 (5), 92-98.

Mouton, J. (2001). *How to succeed in your master’s and doctoral studies: a South African guide and resource book.* Pretoria: Van Schaik.

Newton, R. & Dixon, D. (1999). "New roles for information professionals: user education as a core professional competency within the new information environment". *Journal of Education for Library and Information Science,* 40 (3), 151-160.

Perez, E. (2002). "A second shot at the knowledge management challenge". *Online,* 26(6), 25-29.

Perez, E. (1999). "Knowledge management in the library – not". *Database Magazine,* 22 (2), 75-78.

Powell, R. (1997). *Basic research methods for librarians.* 3rd ed. London: Ablex Publishing Corporation.

Rowley, J. (1999). "What is knowledge management?". *Library Management,* 20 (8), 416-420.

Rowley, J. (2003). "Knowledge management – the new librarianship? From custodians of history to gatekeepers to the future". *Library Management,* 24 (8), 433-440.

Schwarzwalder, R. (1999). "Librarians as knowledge management agents". *EContent,* 22 (4), 63-66.

Southon, G. & Todd, R. (2001). "Library and information professionals and knowledge management: conceptions, challenges and conflicts". *The Australian Library Journal,* 50 (3), 259-282.

Stieger, L. (2005). *Facilitation of knowledge sharing: opportunities for information specialists.* (M.IS mini-dissertation, University of Pretoria) (Unpublished)

Todd, R.J. & Southon, G. (2001). "Educating for a knowledge management future: perceptions of library and information professionals". *The Australian Library Journal,* 50 (4), 313-327.

Townley, C.T. (2001). "Knowledge management and academic libraries". *College and Research Libraries,* 62 (1), 44-54.

Webb, S.P. (1999). "Knowledge management opportunities in a climate of change". *The Law Librarian,* 30 (3), 180-182.

Wittwer, R. (2001). "Special libraries: how to survive in the twenty-first century". *The Electronic Library,* 19 (4), 221-224.

TOWARDS EFFECTIVE KNOWLEDGE MANAGEMENT PRACTICES FOR AGRICULTURAL INFORMATION SPECIALISTS IN TANZANIA

Wanyenda L. Chilimo and C. Sanga

Abstract

Given the importance of the agricultural sector in Tanzania as the main pillar of the economy and recent developments in knowledge management and the importance attached to knowledge as the driving force for development and economic growth, the link between these two concepts is provided.

This paper discusses the potential benefits of applying (KM) practices in the daily operations of the information specialists in the agricultural sector and the importance of making KM as one of the components of the collaboration between different players in the agricultural sector. Effective KM will ensure that not only explicit knowledge is shared but also farmers' indigenous knowledge and tacit knowledge which includes researchers and extension workers' experiences and personal knowledge.

Knowledge Management practices within the agricultural information system in Tanzania is also assessed to see the extent to which the subject is given priority. Lastly the paper discusses challenges of applying KM within the agricultural system of Tanzania proposes strategies which can be used to make KM effective in the agricultural sector in order to improve the performance of this sector.

INTRODUCTION AND BACKGROUND INFORMATION

In the recent years knowledge has joined the ranks as one of the drivers of economic growth. The current knowledge-based economy places great importance on the use of information and knowledge, as well as its creation and sharing as an indispensable factor of production and a significant driver of productivity (Nonaka and Takeuchi, 1995; Barton, 1995; Davenport and Pruask, 1998). Therefore Knowledge Management (KM) has gained importance in almost all sectors of the economy and effective application of KM is hoped to provide a competitive edge and hence economic growth.

KM can also be applied in the Tanzanian agricultural sector so as to improve the performance of this important sector which employs the majority of Tanzanians and accounts for the largest proportion of exports earnings yet its performance has not yet being satisfactory. KM can help the different players in this sector such as farmers, researchers, trainers; extension agents, policy makers and the information specialist to collaborate and share knowledge and apply that knowledge so as to improve the performance of this sector.

The agricultural information specialists from various institutions dealing with agriculture in the Tanzania have a major role to play to ensure that agricultural knowledge is effectively generated, shared and utilized by the various players in the sector to improve the performance of this sector. These professionals are available in the various agricultural institutions, ministries, agricultural universities, NGOs, farmer organizations, and research institutes. Professionals from all these institutions collaborate in some ways and share information and knowledge. Therefore the major purpose of this paper is to introduce the concept of KM in this collaboration.

AGRICULTURE IN TANZANIA

Tanzania's main economic pillar is embedded in the agricultural sector, which supports over 35 million people and contributes 60% of country's GDP, 61% to export earnings and provides 84% of rural employment. The Tanzania Development Vision has set a target of achieving a level of general standards of living typical of medium-income countries by the year 2025. For the agricultural sector to fully contribute towards the sustainable development target, it should grow annually by 7%, implying more than doubling the current annual growth rate of 3.3% (URT 2000).

The performance of the agricultural sector in Tanzania, as for many other developing countries, is hampered by a combination of constraints such as the over dependence on rain-fed agriculture; poor research-extension-farmer linkages; low participation of farmers in decision making; inefficient network of physical infrastructure; low status of agro-processing industry; poor post-harvesting systems; poor policies and the increasing

prevalence of HIV/AIDS and other diseases. Studies in agricultural information have also shown that the impacts of these constraints are often aggravated by a serious lack of access to reliable and timely agricultural information by all stakeholders in agriculture (Chaila, 2001).

FLOW OF AGRICULTURAL INFORMATION IN TANZANIA – THE CURRENT SITUATION

The agricultural information system in Tanzanian mainly involves agricultural researchers, extension agents, and farmers. At the top of the system there are National Agricultural Research Centers (NARS) for which the Department of Research and Development of the Ministry of Agriculture & Food Security is the lead institution with the role of conducting, coordinating, and directing agricultural research in the country. For operational purposes, agricultural research under the NARS is organized into seven agro-ecological zones managed under the DRD. Other institutions involved in this system include Tropical Pesticides Research Institute (TPRI), universities, and Tanzania forestry Research Institute (TAFORI) and private research institutes. Other institutions that participate include COSTECH, National Environment Management Council, universities, local government councils, NGOs, etc.

The DRD and the NARS also collaborate with the research and extension counterpart of the ministry of Agriculture in Tanzania. At the national level research and extension department have strong informal linkages in sharing and exchanging of information through their respective Information & Documentation Unit (IDU) and Farmers' Education & Publicity Unit wings which have the function of repackaging research and other agricultural information for end users.

At the zones there are Zonal Communication Centers (ZCC), which serve the broad array of agricultural research information consumers with new scientific and technical innovations. They have vans, video/audio systems, and editing equipment, and are capable of making informative publications and leaflets for distribution to farmers. The Zonal Research Extension Liaison officer works to strengthen research-extension- farmer linkages at the zones. There are quarterly and monthly training sessions at the district

level whereby farmers send their research and extension needs through Village Extension Officers who attend the sessions. Agricultural shows, public demonstrations, and the fact that Swahili is one language spoken by all in Tanzania add up to broad user outreach.

However the conventional delivery of agricultural information to rural farmers by extension services has been criticized widely. Weak linkages between researchers, extension workers and farmers have resulted in new innovations not being utilized. While farmers are most seriously constrained, intermediaries such as extension workers lack the necessary capacity to disseminate agricultural information. Consequently, research institutions are increasingly criticized for not disseminating their research findings (Mkapa, 2005). In such a scenario the application of KM is very essential as it will facilitate collaboration and information sharing among all the players in the agricultural sector. KM will also ensure that within the sector knowledge is generated, shared, effectively disseminated and utilized so as to improve the performance of this sector.

KNOWLEDGE MANAGEMENT (KM)

Knowledge management is the process of systematically and actively managing and leveraging the stores of knowledge in an organization. It is the process of transforming information and intellectual assets into enduring value. According to Rashed, *et al* (2005) KM is the efficient utilization of the existing intangible, knowledge-related resources available in every sector of the economy to enhance and complement the productivity and the quality of all conventional factors of production. KM includes activities that go beyond just managing information flows to include systems that are designed to capture much of the tacit capabilities of an organization such as skills, experience and expertise of its employees.

KM involves the management of explicit knowledge i.e. knowledge that has been codified in documents, databases, web pages, etc. as well as the provision of an enabling environment for the development, nurturing, utilization and sharing of tacit knowledge. Tacit knowledge includes peoples know how; skills, expertise; thinking, experiences talents, thoughts, ideas, intuitions etc. It is the knowledge which is kept in human

minds and skills and shown through behaviors or performances. Tacit knowledge is present in a person or an organization, but it is not written down or documented, and it is often difficult to express or describe (Branin 2003). Effective KM practices mainly aim to draw out the tacit knowledge people have, what they carry around with them, what they observe and learn from experience, rather than what is usually explicitly stated.

POTENTIAL BENEFITS OF APPLYING KM IN THE AGRICULTURAL SECTOR

Effective application of KM practice in the daily operation of all the players in the agricultural sector will have a number of benefits which ultimately will increase the productivity of this sector in Tanzania. For instance KM can be applied in the following specific activities in the agricultural sector.

MANAGING INDIGENOUS KNOWLEDGE (IK)

KM will enable the management of locally available knowledge or sometime called indigenous knowledge. This is the knowledge of specific place, people and time and that which can be locally adapted. Indigenous knowledge (IK) is unique to a given culture or society and 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. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. (Warren 1991)

According to Gomez and Melesse, (1998) the capacity of a society to effectively position itself as a consumer and producer of local knowledge is important to its social and economic development. This also applies for the agricultural sector development. The development of this sector will not be possible if it will only depend on the knowledge from other countries while there is a worth of untapped locally available knowledge and expertise which can be used to improve the performance of the sector. Agricultural sector in developing countries and in a country like Tanzania has been identified as one of the areas in which local knowledge or the indigenous

knowledge is very rich. However for the information professionals in Africa the indigenous information system has remained invisible to them due to the fact that the theoretical basis of their training has assumed a total absence of local information sources and information transfer systems (Reseroka, 2002). The information specialists need to take an active role in the management of IK. This can be done by applying KM strategies strategically designed to capture this type of knowledge so as to ensure that it is accessible. Ngulube, (2002 suggest the following strategies for the management of indigenous knowledge: Preparing inventories of traditional knowledge systems; Making IK accessible to the community; Compiling bibliographies and databases for IK.

OTHER BENEFITS OF KM IN THE AGRICULTURAL SECTOR

Application of KM in the agricultural sector in Tanzania will also facilitate the following:

- Enhance decision making within the sector as decision making will be based on reliable data and information
- It will aid the public and all the stake holders to participate effectively in decision making
- It will help to build competitive societal intellectual capital capabilities
- It will help to develop a knowledge management work force in the agricultural sector.

With an increasing concern by the government of Tanzania and all over the world to create a knowledgeable society, it is critically important to understand the nature of knowledge that is already embedded in the agricultural sector processes, and how that knowledge is used as an important component source of competitive advantage.

INFORMATION AND KM ACTIVITIES AMONG THE AGRICULTURAL INFORMATION SPECIALIST IN TANZANIA – THE CURRENT SITUATION

Following two consecutive and successful stakeholders' workshop for the agricultural information specialists in Tanzania which were held in April 2005, there has been an encouraging development in the sharing of knowledge and information among the agricultural institutions in Tanzania. Consequently there is great hope that such collaboration will not only help to solve the problem of lack of access to reliable and timely agricultural information but also lack of relevant and locally available information on the internet and other International agricultural databases like Web Agris database. The workshops brought together information actors in the country from both the public and private sector including ministries, universities, NGOs, farmer organizations, and research institutes.

Furthermore these workshops had a networking element where Tanzanian institutions gave presentations on their information and communication goals and functions, resources, ICT infrastructures, etc. The workshops also had a strategic element in which participants examined information resources and tools for different users, discussed their publishing strategies and approaches, looked at different experiences and ideas and strategies on the 'utilization' of information, discussed the role of agricultural information professionals in information provision to rural communities, and identified some of the gaps in agricultural information management and dissemination.

These workshops were organized by Sokoine National Agricultural Library, Department of Research and Development of the Tanzania Ministry of Agriculture and Food Security, in collaboration with CAB International, Technical Center for Agricultural and Rural Cooperation (CTA), International Association of Agricultural Information Specialists (IAALD), International Network for Availability of Scientific Information (INASP) and Regional Agricultural Information Network Rain (RAIN).

As a result of these workshops the agricultural information specialists in Tanzania are currently involved with the following activities:

PARTICIPATION IN A DISCUSSION GROUP

The agricultural information specialists in Tanzania have formed a dissuasion group which is called Aginfo-tz and can be accessed at www.dgroups.org/groups/aginfo-tz/. The group is an e-space that enables members to communicated, share information, exchange ideas and hence provides a basis for further collaboration between the different players in the agricultural sector.

MAINTAINING WEB BLOGS

The workshops introduced the idea of web blogs to the agricultural information specialist and currently a number of these specialists maintain their own glogs. Web logs are easy to use software which let anyone with a Web browser and some easy-to-use software to publish a personalized diary online. Blogs are personal Web sites that serve as sources of commentary, opinion and sources of information on a variety of topics. Web blogs can help to capture tacit and explicit knowledge and they have started to emerge as valuable knowledge management and communication tools in companies, organizations and institutions.

INPUTTING DATA ON THE WEB AGRIS DATA BASE

Web Agris is a complete multilingual web based system for distributed data input, processing and dissemination. The Agris database is an International initiative pioneered by Food and Agriculture Organization of the United Nations (FAO). The aim of this initiative is to build a common information system for science and technology in agriculture and related subjects, based on a collaborative network of institutions and to facilitate information exchange and to bring together world literature dealing with all aspects of agriculture. AGRIS is a cooperative system in which participating countries input references to the literature produced within their boundaries and, in return, draw on the information provided by the other participants. About 240 national, international and intergovernmental centers participate including agricultural research centers, institutions and NGO in Tanzania. Inputting Tanzanian based agricultural information on this database will help to ensure wider accessibility of this information. It

will also help to solve the problem of local content in such International databases hence make them more relevant to Tanzanian users.

INTERNATIONAL COLLABORATION

Some of these professional are also members of the International Association of Agricultural Information Specialists (IAALD) these are also involved with the IAALD discussion group where by sharing agricultural knowledge takes place at the International level.

Institutional based knowledge management activities

Apart from the above mentioned activities the agricultural information specialists in Tanzania are also engaged with a number of activities which are geared toward managing knowledge in their own institutions some of these include.

- Maintaining institutional online catalogues and databases
- Participating in various informal groups or communities of practice in their places of work where by knowledge is normally created and shared in such groups
- Knowledge creation and sharing

Challenges for KM application in the agricultural sector

A General investigation of KM activities in the agricultural sector in Tanzania reveals that there is little KM activities within the sector especially in the management of tacit knowledge and efficient utilization of the existing knowledge resources. Much of the activities (as the ones mentioned above) are mainly based on the management of the documents and mainly focus on explicit knowledge and therefore they are not entirely KM practices since KM involves more that just management of documents. There are number of challenges that hinder effective application of KM practices in the agricultural sector. Such challenges include technological challenges, policy related challenges, financial constrains lack of awareness on KM, and lack of the culture of sharing knowledge within the

sector. The following section provides a way forward and strategies which can be use to overcome the challenges so as to enable effective application of KM practices in the agricultural sector.

Way forward and strategies which can be adopted to make KM effective in the Agricultural sector in Tanzania

Capitalize KM in the existing activities

The activities that the agricultural information specialist are currently involved with and which are mainly facilitated by the developments in Information and Communication Technologies (ICTs), enable sharing of information, connect people and make sharing of documents easy. These activities provide a basis for wider and intensive application of KM practices and strategies in the agricultural sector in Tanzania. However these professionals need to capitalize more on KM in these activities. This is because KM goes beyond sharing of information and documents and involves efficient utilization of the existing knowledge-related resources available in the sector to enhance its productivity. According to Rashed *et al* (2005) much of the value of KM comes from getting beyond document management and understanding how to identify and employ the knowledge and expertise within the organization/sector and its partners. A report from World Bank (1999) states that Developing countries have been lagging behind most other nations in the world in terms of utilizing existing resources to advance their socio-economic and political status. These countries need to develop an appropriate strategy to manage knowledge as a factor of production in order to attain acceptable levels of economic growth and also utilize their existing knowledge and develop strategies to acquire new knowledge. Rashed *et a*l (2005) also said Developing countries are endowed with under-utilized human capital with diverse cultural, intellectual, and linguistic inheritance. Many of these countries have the necessary but untapped variables to acquire and produce the needed knowledge in order to position them in the global knowledge economy. Therefore the information professionals in these countries should capitalize of KM strategies so as to ensure that tacit and explicit knowledge is well capture, shared and utilized.

INFORMATION SPECIALISTS SHOULD PLAY A LEADING ROLE IN KM

Information professional in the agricultural sector should play a leading role in the adoption of KM in their institution hence make it possible for agricultural knowledge to be shared between experts, researchers, farmers extension agents and other players in the whole sector. These professional can act as knowledge managers in their individual institution and then through them the whole of the sector will be connected and share knowledge. Branin, (2003) urged that to capture useful information in different formats and from various formats is really a tough work. However the information professional can utilize their expertise to create and use knowledge capturing techniques and organize knowledge for users to use, this is because knowledge from different sources needs reorganization. Davenport and Prusak (1998) identified areas where by information professionals can work on so as apply KM in their institutions. These include the following.

- Managing knowledge repositories: This involves evaluation, filtering, signposting, structuring, facilitating access, packaging and presenting knowledge in their institutions.
- Facilitating knowledge flow. This involves both the technological and social aspects that facilitate knowledge flow. It involves ensuring the availability of tools, and user training to ensure that users find tools easy to use. It also involve removing barriers to knowledge sharing, and create systems and cultures that embed knowledge sharing seamlessly into normal working life
- Valuing knowledge as an asset: Information professionals are required to take an active role in helping others to develop behavior, actions and cultures that optimize knowledge and value it as an asset.

AGRICULTURAL INFORMATION SPECIALIST SHOULD TAKE ADVANTAGES OF THE CURRENT DEVELOPMENTS IN ICT

ICT are now recognized as important tools that can facilitate communication and access to information for agricultural and rural

development in Tanzania. These technologies are now used in research, in teaching and learning, in extension and increasingly by farmers and producer communities. Other developments with regard to ICT in Tanzania include increasing connectivity to the Internet of agricultural research institutes, the rural telecentres pioneered by COSTECH, increasing numbers of Internet cafes across the country, as well as the expanding growth of mobile networks. Such developments if effective utilized can have a major contribution for agricultural knowledge sharing so as to enhance the development of the agricultural sector. ICT facilities which are currently available in most agricultural libraries and research centers in Tanzania can be used to tap both explicit and tacit knowledge and make the sharing possible. Tapping these knowledge types on ICTs will also help to narrow the content divide and make ICTs such as the Internet more relevant to the local people and farmers hence contributing towards the formation of a knowledge society. Lesser & Prusak, (1999) Said that technology can play an important role in supporting knowledge management activities. Tools such as personal web pages, directories of expertise and knowledge maps can help individuals locate others with similar interests and experiences and fostering the network component of social capital. Same-time collaborative tools such as chat rooms and videoconferences can help members maintain connections, and foster interactions that lead to increased trust and context sharing. However it is important to note that in order to have effective KM strategies there is a need to carefully design the learning environment by considering all the technical, pedagogical, and organizational issues. Studies show that the correlation between KM and the use of IT is not necessarily positive. Hence, high use of IT does not necessarily make effective KM strategies (Hara and Kling, 2002).

ENCOURAGE SHARING CULTURE AMONG AGRICULTURAL SCIENTISTS AND OTHER PLAYERS IN THE SECTOR

Current with the exceptional of few NGO dealing with agriculture much of the agricultural system is embedded within the public sector which includes the ministry of agriculture, agricultural institution and national agricultural research centers. According to Liebowitz and Chen (2003) knowledge sharing in government and the public sector possesses some

unique challenges. This is because government agencies are typically hierarchical and bureaucratic organizations that make sharing of knowledge difficult. Liebowitz and Chen further argued that in the public sector most people seem reluctant to share knowledge because they "keep knowledge close to their heart as they move through the ranks by the knowledge is power paradigm. A study on knowledge management practices in the public sector reveal that knowledge and information initiatives are inherently political and have an uneven impact on different civil servants and on different client groups and members of the public. In order to effectively apply KM in this sector effort need to be made to overcome this challenge by raising awareness on this concept. There is also a need to promote the culture of sharing information and provide incentive for knowledge sharing. Getting the experts to agree to share their expertise with others is a big challenge except it is part of their regular job. Employees who have spent a career lifetime enhancing their value because they “know” something others don’t are logically reluctant to give away their valuable expertise and, in that process, loose some or all of their value. Therefore plans to implement KM management often require prior exercises in changing corporate culture, moving employees from a gatekeeper culture, where knowledge is kept hidden and produced only when it can enhance the employee’s value, to a sharing culture, where knowledge sharing is encouraged and rewarded.

KM SHOULD BE INCLUDED AS A SUBJECT IN THE INFORMATION PROFESSIONALS TRAINING

KM is a new subject where by many people are still not aware about it. For instance the information professional themselves who are supposed to take a leading role in the efforts to implement KM in originations most of them are not aware of this new concept. Therefore in order for this concept to bring the required benefit is high time that this subject be included in the curriculums for library schools. For the case of Tanzania KM is not taught anywhere in all the available library school such the school of Library, Achieve and Documentation studies SLAD, Tumaini University and University of Dar Es Salaam. The information professional also need to keep them selves up to date, informed, and adopt the strategy of life long

leaning about this kind of new subject through reading, attending seminars and workshop and take advantage of the available e-leaning opportunities.

CONCLUSION

The information specialist in the agricultural sector in Tanzania have slowly started to embrace KM strategies in their daily operation. These strategies among other things facilitate sharing of agricultural information among the different players in the agricultural sector. However there is a need to capitalize more on effective KM strategies in the agricultural sector in Tanzania so as to improve the performance of this sector**.**

REFERENCES

Barton, L. D. (1995) Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation, Harvard Business School Press, Cambridge, MA.

Branin, J. J. 2003. Knowledge Management in Academic Libraries: Building the Knowledge Bank at the Ohio State University. Retrieved November 2005, from https://kb.osu.edu/dspace/bitstream/1811/187/1/KBJAL.pdf.

Chaila, A.M. (2001). Implementation of policies and strategies for agricultural information access and use in Tanzania. PhD Thesis. University of Natal, South Africa,

Davenport, T. and Prusak, L. (1998) Working Knowledge: How Organizations Manage What They Know, Harvard Business School Press, Cambridge, MA.

Davenport, T. and Prusak, L. (1998) "Successful knowledge management projects", Sloan Management Review, 39, 2, 43-57. (Quoted in Rowley, J. (2003), Knowledge management is the new librarianship? From custodians of history to gatekeepers to the

future Library Management; Volume 24 Number 8/9 2003 pp. 433-440

Gomez, M. D. and Melesse, M. (1998) 'Utilizing information and communication

Technologies for development: the social dimensions', Information Technology for Development, Vol. 8, No. 1, pp.3–14, Retrieved November 2005, from, http://www.sdpgroup.com/docs/ICTs.pdf

Hara, N. and Kling, R. (2002). IT Supports for Communities of Practice: An Empirically-based Framework. Center for Social Informatics SLIS, 10th street & Jordan Ave. Indiana University, Bloomington, Retrieved November 2005, from
http: //rkcsi.indiana.edu/archive/CSI/WP/WP02-02B.html

Lesser, E. and Prusak, L. 1999. Communities of Practice, Social Capital and Organizational Knowledge. Retrieved November 2005, from
http://www.providersedge.com/docs/km_articles/Cop_-Social_Capital_-_Org_K.pdf

Liebowitz, J. and Chen, Y. (2003). Knowledge sharing proficiencies: The key to Knowledge Management: Holsapple, C.W. Handbook on Knowledge Management 1: Knowledge matters, Springer-verlag, Berlin 409-24

Mkapa, W. (2005). The tenth Sokoine memorial lecture - Sokoine university of agriculture, Morogoro, Tanzania. Retrieved November 2005,
From:
http://www.tanzania.go.tz/hotuba/hotuba/050412_Sokoine_Memorial_Lecture.htm

Nonaka, I. and Takeuchi, H. (1995) The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation, Oxford University Press, and Oxford, UK.

Ngulube, P. (2002). Strategies for managing and preserving indigenous knowledge in the knowledge management era. Proceedings of the 15th Standing conference of Eastern, Central and Southern African Library and Information Associations. 15-19 April 2002 Caesars Gauteng Conference Center, South Africa

Raseroka, K, H. (2002). From Africa to the world – the globalization of indigenous knowledge systems: Setting the scene. Proceedings of the 15th Standing conference of Eastern, Central and Southern African Library and Information Associations. 15-19 April 2002 Caesars Gauteng Conference Center, South Africa

Rashed, J. A., Bertaux, N. and Okunoye, A. (2005). Knowledge management and economic development in developing countries: an examination of the main enablers.

Global Business and Economics Review, Vol. 7, No. 1, 2005, Retrieved November 2005,
From:
http://www.inderscience.com/storage/f732125941110186.pdf

URT (2000). United Republic of Tanzania Development Vision 2025, Retrieved October 2005, from
http://www.tanzania.go.tz/vision.htmhttp://www.tanzania.go.tz/vision.htm

Warren, D. M. 1991 "Using Indigenous Knowledge in Agricultural Development"; World Bank Discussion Paper No.127. Washington, D.C.: The World Bank.

World Bank Group (1999) World Bank Report 1998/99: Knowledge for Development Retrieved October 2005, from
http://www.worldbank.org/ks/html/pubs_pres.html, 3rd April 2000.

FROM COLLECTION MANAGEMENT TO KNOWLEDGE MANAGEMENT PRACTICES: CONSIDERATIONS FOR THE SOKOINE NATIONAL AGRICULTURAL LIBRARY IN TANZANIA

Edda T. Lwoga and Alfred S. Sife

Abstract

In the last few decades there has been a shift from "collection development" to "collection management" to present day "knowledge management". Developments in ICTs are mainly responsible to the shift. This paper discusses how university libraries in developing countries can transform from collection management to knowledge management practices, focusing on the Sokoine National Agricultural Library in Tanzania. Challenges for implementing KM practices in the universities are also discussed. Recommendations are also made on how libraries including SNAL can implement KM practices, and move beyond the inherent collection management practices.

1. INTRODUCTION

In the last few decades there has been a movement from "collection development," to "collection management," to present day "knowledge management" (Branin, 2003). However, many libraries especially in developing world are still tied up with the collection management practices for information acquisition, organization, dissemination and preservation. With the complexity nature of knowledge being categorized in both explicit and tacit, the collection management practices can not handle all these types of knowledge needed at the universities. So, libraries have no option, instead they are supposed to shift their roles from collection management to knowledge management practices.

Knowledge management involves the discovery and capture of knowledge, the filtering and arrangement of this knowledge, and the value derived from sharing and using this knowledge throughout the organization. With the developments of information and communication technologies (ICTs), knowledge management practices have been enhanced and improved in

terms of, creation of knowledge repositories; the improvement of knowledge access; enhancement of the knowledge environment; and management of knowledge as an asset.

This paper discusses the shift from collections to knowledge management and how university libraries in developing countries can to transform from collection management to knowledge management practices, focusing on the Sokoine National Agricultural Library. Challenges for implementing KM practices in the universities are also discussed.

2. FROM COLLECTION DEVELOPMENT TO COLLECTION MANAGEMENT

Studies indicate that the years between 1950 and 1975 was the "collection development period" where most libraries used to acquire material to build their collections as quickly as they could manage. Print material, in the form of books, journals, and manuscripts was the predominant medium for library acquisitions (Branin, 2003). The major concern of libraries in this period was to build their collections as quickly as possible depending on their budgets.

Between 1975 and 2000, the conditions and nature of collection development changed for many libraries, leading to shift of emphasis from building to managing collections (Mosher, 1981). During this "collection management period" librarians concentrated on selection and acquisition of new resources, conducting user studies, preservation, and development of collection management policies. According to Brenin (2003), three factors were primarily responsible for the evolution from collection development to collection management:

- The decreasing budget which inhibited building collections indiscriminately.
- The changing environment of research and use of library collections which led to the need to match library user needs to library acquisitions and services.

- Developments in information technology that led to creation of online library catalogs and the automation of circulation and technical services, automation of reference services, e-journals and e-books.

In sum, collection development involves the selection and acquisition of library materials while collection management is much more than that. It involves managing the use of the collection, its storage, its organization and making it accessible to users (Singh, 2004).

3. FROM COLLECTION MANAGEMENT TO KNOWLEDGE MANAGEMENT

The evolution of "collection development" and "collection management" to the current "knowledge management" is a result of many challenges in the 21st century. One major challenge is the presence of multiple formats of information resulted from the rapid advancements in ICTs. Library collections are no longer comprised almost entirely of printed materials but information materials in multiple formats and media (Budd, 1998). ICTs such as computers, Internet, the WWW, multimedia and CD-ROMs have presented unprecedented abilities for libraries to manage and provide services to the community.

However, literature indicates that KM has its roots in the business organizations (Wiig, 1999). This is mainly because in today's information economy, knowledge is considered the most important economic resource. It is advocated that those organizations which can identify, value, create and evolve their knowledge assets will survive in the knowledge-based society (Rowley, 2000). Universities like many other organizations are being forced to adopt KM practices in order to improve the quality of their activities.

4. WHAT IS KNOWLEDGE MANAGEMENT?

Defining Knowledge Management (KM) starts with the understanding of three related concepts – knowledge, information and data. Attempts to define these concepts are numerous and produce slightly different results,

depending on discipline or field. For Mitchell (2000), data is raw numbers and facts, information is data made meaningful by being put into a context, and knowledge is data made meaningful through a set of beliefs about the causal relationships between actions and their probable consequences, gained through either inference or experience. Thus, many conceptual overlaps exist between all these terms.

Furthermore, knowledge is distinguished between explicit and tacit. According to Nonaka (1991), explicit knowledge is knowledge that is easily expressed, captured, stored and reused. It can be transmitted as data and is found in databases, books, manuals and messages. In contrast tacit knowledge is:

> "...highly personal. It is hard to formalize and therefore difficult to communicate to others ...tacit knowledge is deeply rooted in action and in an individual's commitment to a specific context ...tacit knowledge consists partly of technical skills [and partly] of mental models, beliefs and perspectives so ingrained that we take them for granted and cannot easily articulate them." (Nonaka, 1991)

Attempts to define KM are also numerous. The Web defines KM as the process of systematically and actively managing and leveraging the stores of knowledge in an organization. According to Fahey and Prusak (1998), KM processes involve the acquisition, creation, dissemination and application or reuse of knowledge. Managing knowledge goes much further than capturing data and manipulating them to obtain information. The implication is that knowledge management is not only about managing the knowledge asset but also managing the processes that act upon the asset.

Most importantly is the nature of tacit knowledge which brings challenges when managing it. Thus, the major concern of KM practices has been to capture and share the tacit knowledge. Those challenges associated with tacit knowledge include - it is invisible and hard to express; epitomes of tacit knowledge in the working environment are fuzzy things like intuition, rule-of-thumb, gut feeling and personal skill; tacit knowledge cannot be

given in lectures, found in databases, textbooks, manuals nor internal newsletters for diffusion; and that tacit knowledge is deeply rooted in action and individual commitment aspects that are rather difficult to transfer (Nonaka 1991). Therefore, librarians are challenged either to convert tacit knowledge into explicit or at least to put a mechanism for the university community to share it.

4.1 Knowledge Management Objectives

In a study to assess the challenges that higher education institutions face in implementing knowledge management, Rowley (2000) examined the characteristics and features of successful knowledge management projects and suggested that universities need to address four key KM objectives adopted from Davenport *et al*. (1998), which include the following:

(i) Creation of knowledge repositories – Knowledge repositories can fall into three categories:

- those which include external knowledge, such as competitive intelligence;
- those that include structured internal knowledge, such as research reports;
- Those that embrace informal, internal or tacit knowledge, such as discussion databases which store "know how".

(ii) The improvement of knowledge access - This is about providing access to knowledge or to facilitate its transfer amongst individuals. Here the emphasis is on connectivity, access and transfer, and technologies such as video conferencing systems, document scanning and sharing tools and telecommunications networks are central.

(iii) Enhancement of the knowledge environment - This involves the creation of conducive environment to more effective knowledge creation, transfer and use. It is mostly concerned with tackling the organizational norms and values as they relate to knowledge. Most importantly, the challenge is on how to encourage knowledge sharing amongst professionals within the university community.

Thus, knowledge sharing always needs rewards, whether these are in terms of recognition, career advancement, social acceptance, absence of penalties or monetary rewards.

(iv) Management of knowledge as an asset - Valuing knowledge is concerned with viewing knowledge as an asset. If established, this can have two outcomes: enhanced and shared understanding of the role of knowledge in the university, and the opportunity to monitor the increases and decreases in the knowledge assets embedded in the organization. The libraries have to take a lead in promoting the concept of valuing knowledge as an asset within the university community in order to realize the mentioned outcome.

5. KNOWLEDGE MANAGEMENT PRACTICES AT SOKOINE NATIONAL AGRICULTURAL LIBRARY

The Sokoine National Agricultural Library (SNAL) is both the university library for Sokoine University of Agriculture (SUA) as well as a national agricultural library for Tanzania. Thus, SNAL serves not only the university community but also other agricultural information users throughout the country and outside.

It is important for academic libraries to determine and manage their knowledge assets to avoid duplication of efforts. However, it should be noted that universities, including their libraries do have a significant level of KM activities, and it is important to recognize these, and use them as foundations for further development, rather than to invent a whole new paradigm (Rowley, 2000). The four types of KM objectives by (Davenport *et al*., 1998) were used to assess KM practices at SNAL, with a view of setting an agenda for the future.

5.1 Creations of knowledge repositories

Like many other libraries in developing countries, SNAL does not have an integrated collection of knowledge repository. The libraries concentrates more on creating to explicit knowledge repositories in terms of full text databases via CD-ROMs and networked servers, and online catalogues for

books, journals, research projects and grey literatures. Not much attention is given by the library to manage tacit knowledge at SUA. The university has email discussion group for academic staff, however, observations show that the generated knowledge is neither captured nor stored for future use. Much effort is needed to ensure the tacit knowledge to make it explicit. This is can be achieved by formation of knowledge repository which captures both types of knowledge by the libraries in order to effectively meet their users' knowledge needs.

5.2 Knowledge access

Through the use of ICTs, SNAL has developed and organized a number of services that contribute to sharing explicit knowledge in the university. The services include web pages; access to e-resources such as e-journals, CD-ROMs, online catalogue; information literacy training and awareness programs; and question and answer services. Although such services were mainly for increasing access to the library resources, in a way they contribute to sharing explicit knowledge. Thus, SNAL needs to be more proactive by creating a means of either providing access of tacit knowledge or convert it to explicit and facilitate its sharing.

5.3 Knowledge environment

Observations show that although there are several mechanisms (e.g. promotion) for rewarding academicians at SUA, these mechanisms are not sufficient to motivate them to create, share and use knowledge within the university community. Efforts are needed to create a knowledge environment that reflects both technological and social aspects in terms of ensuring the availability of knowledge tools (i.e. expert databases; have network knowledge ("know who knows"), and user training to ensure that users find tools easy to use (Rowley, 2003). SNAL has to take a lead in this. Branin (2003) provides an example where the Ohio university library has taken a lead in creating the Knowledge Bank which comprises the digital institutional repository – an interdisciplinary, multi-media storehouse of knowledge capital.

5.4 Valuing knowledge

Like many other university libraries, currently SUA does not have a proper method of valuing the university knowledge as an asset. Therefore, SNAL can take a lead to promote the culture of valuing knowledge as assets in the university.

6. CHALLENGES AND RECOMMENDATION

The following are the challenges that SNAL and other libraries encounter when implementing KM practices.

6.1 The Nature of Knowledge

The main aim of any KM practices is to capture and share the tacit knowledge. Since tacit knowledge is embedded in people's minds, it is difficult to record and document it in such a way that others can benefit from it. Locating knowledge by finding out who has knowledge about what is also difficult. Another challenge is when determining who needs what knowledge, and when. All these problems are particularly difficult when dealing with large organizations like universities. However, developments in ICTs have made it possible to turn tacit knowledge into explicit knowledge. The advancements of artificial intelligences (AI) and ICTs increase abilities and offer new possibilities, such as codification to videos or animations, transmissions across distances, and communications via videoconferences. Academic libraries can explore the potential benefits of these new technologies to improve KM practices in universities.

6.2 The Nature of People

Universities have large numbers of staff and students that differ from their disciplines, personalities, values and culture etc. This implies that there are also variations in the ability of people to create and share knowledge. Again, people’s decisions depend on their viewpoints, attitudes and values which make it difficult to influence them. Passing one's knowledge to others would mean enabling them to perform the same tasks, thus making the originator more easily replaceable. Universities should create a

supporting environment to motivate their staff to share their knowledge by changing their reward systems, while academic libraries should promote the trust and enthusiasm among the academicians and use ICTs to create applications that will motivate and stimulate the level of participation among staff members.

6.3 Organizational culture

Universities consist of many people connected to each other in different ways - faculties, departments, hierarchies etc. The willingness of individuals to share their knowledge depends on the organizational culture of a university. The university management need to significantly change their culture, values, structures and reward systems in order to facilitate, support and encourage knowledge creation, sharing and utilization among members in the university community. It should be made clear that change in organizational culture will maximize the competitive advantage realized from any knowledge management process.

The resulting "knowledge culture" within an organization as noted by Walczak (2005) first, it supports the decision making of knowledge workers through collaboration in knowledge teams (real or virtual). Second, it facilitates the exchange of tacit knowledge through interaction in knowledge teams with other knowledge workers (Nonaka and Konno's (1998) socialization process). Horizontal knowledge transfer is also facilitated as knowledge workers migrate to new knowledge teams working on new business opportunities or needs and through the maintenance of communities of practice organized along functional lines of business. This implies that the academic libraries need to play a greater role in educating, convincing and advocating the university community and top management about the importance of changing the organizational culture in order to realize the benefits led by the "knowledge culture".

6.4 Institutional and administrative commitment

Ongoing commitment and involvement of the management and other stakeholders is required once knowledge management practices is integrated into the universities in order to nurture, support and create the

knowledge environment and value it as an asset. Unfortunately, this is not always the case for many universities in developing countries. This is attributed due to the lack of awareness, policies and strategies about KM practices. For instance, observations made at SUA show that many university members think that knowledge management practices are equivalent to information management inventions or other IT/change initiatives, which is not true.

The effective development of policies and strategies which focus on KM implementation and evaluation will enable the top management to be committed towards the implementation of KM practices since they will understand what values can be derived from it. Gupta *et al* (2000) further explains that measures for KM enables the top management to realize if KM is working for an organization, to determine what value is being added to its processes and products, and to determine what implications there are for competition by enhanced sharing and collaboration.

The education and advocacy programs about KM practices from the information/knowledge professionals will also enable the university top management to understand what values can be derived from KM practices. In return, this will enable the top management as well as the universities communities to be committed and participate in KM practices.

6.5 Technology

The power to exploit technology to develop the KM system limit the implementation of the KM practices within many university including SUA. This is mainly due to low salaries provided to technical experts who are generally attracted to work in the so-called “greener pastures”. In addition, observations show that there is not enough collaboration between the library and the university ICT unit (the Computer Centre) as far as technical expertise is concerned. The application of ICTs to improve KM practices requires the combination of experience from librarians and technical assistance from the ICT units. Further, like most universities in developing world, SUA has inadequate ICT infrastructure in terms of computer hardware and software, telecommunications networks, low

bandwidth etc. Strong ICT infrastructure is necessary for knowledge creation, sharing and utilization in the university.

7. AN INTEGRATIVE FRAMEWORK FOR STRATEGIC KNOWLEDGE MANAGEMENT

Since KM is a multi-disciplinary field, a number of conceptual frameworks have been proposed, and all add value to the challenges that face many organizations when implementing KM practices (Davenport et al., 1998). KM strategies as proposed by (McCann and Buckner, 2004) can be used to overcome the above mentioned barriers:

7.1 Assessing and valuing knowledge challenges

The libraries need to assess and value the university's knowledge against challenges posed by its larger environment, such questions can be asked: does the university need to change its organization culture or redefine its organizational vision? In assessing and valuing the knowledge challenges, the academic libraries can:

- systematically engages with the university community (i.e. top management, academicians) in sense-making and appreciative exercises to identify critical knowledge challenges; and
- supports and engages in an active dialogue about the resulting knowledge challenges that are identified.

7.2 Expressing learning goals and strategies

How well the organization frames those challenges and expresses them in specific learning goals and strategies are critical KM issues (de Geus, 1997). The universities and libraries must value knowledge acquisition and express its importance through the core learning goals and strategies if it is to effectively respond to its knowledge challenges (McCann and Buckner, 2004). Operationally, this framework is concerned with how well the academic libraries together with the universities management:

- develop and deploys meaningful measures of the university current intellectual capital or knowledge assets, and benchmarks these against the knowledge challenges;
- defines achievable learning goals and strategies consistent with the mission of the university; and
- recognize learning barriers and obstacles to those goals and strategies, and provides adequate resources and support for overcoming them.

7.3 Acquiring and building knowledge repositories

This involves the development of knowledge repository by the academic libraries in or order to acquire both external and internal knowledge of the university. Operationally, this framework dimension is concerned with how the academic libraries:

- create essential roles to advocate for KM and assures that key units, particularly university community, adopt a strategic KM perspective for their activities;
- develop knowledge acquisition and building strategies linked to university goals
- monitor and track through appropriate benchmark and measures the net impact of those acquisition and building strategies.

7.4 Sharing and retaining knowledge

This deals with how the academic libraries together with the university management can create and maintain structures, systems, and processes for sharing knowledge across the university community, and for retaining knowledge within the organization. This can includes the following:

- an organization design that encourages interactions and relationships and impacts how knowledge is structured and flows (Nadler and Tushman, 1998);
- systems for capturing knowledge, making it accessible, and facilitating its movement, particularly through IS/IT investments, but

also through communications channels and network development (Davenport and Prusak, 1998; Zuboff, 1989);

- human resource processes that encourages an organization culture that values and rewards learning and knowledge sharing (Soliman and Spooner, 2000); and
- Systems for rewarding, developing, and evaluating individual and group performance based upon their knowledge building, sharing, and retention (Stewart, 1997).

7.5 Applying knowledge

This deals with how the knowledge can be translated into tangible, valued forms and also be applied to achieving the university's larger learning goals and strategies while responding to the university's basic knowledge challenges. This framework dimension is therefore critically concerned with:

- how effectively the libraries embeds knowledge in the universities services; and
- how well the library continually learns and improves itself in each of the other strategic KM dimensions – assessment and valuing, learning goals and strategies expression, acquisition and building, sharing and retention

8. CONCLUSION

The developments of information and communication technologies (ICTs) have transformed the collection development and management practices to cover more new and emerging forms and arrangements of information and knowledge resources in the digital age. However, many academic libraries settings in developing countries including Tanzania do not have a systematic approach of managing the knowledge of the University, and making it available to the university community in order to improve the core functions of the universities which are research, teaching and learning. Many of them are still stack to the old ways (i.e. collection management) of

managing these emerging types of knowledge and information. The surveyed library, Sokoine National Agricultural Library (SNAL) shows that it is more concentrated in managing explicit knowledge, rather than managing both types of knowledge (i.e. explicit and tacit). Basing on that, this paper discussed the challenges that face academic libraries when they want to implement KM practices. An integrative framework for the implementation of knowledge management practices by the academic libraries including SNAL is also proposed.

REFERENCES

Branin Joseph J. (2003). "Knowledge Management in Academic Libraries: Building the Knowledge Bank at the Ohio State University", Retrieved November 27, 2005, from https://kb.osu.edu/dspace/bitstream/1811/187/1/KBJAL.pdf

Budd, John M. (2000). *The Academic Library: Its Context, Its Purpose, and Its Operation,* Englewood, Colo: Libraries Unlimited

Davenport, T.H, DeLong, D.W, Beers, M.C, (1998). *Successful knowledge management projects,* Sloan Management Review, 39, 2, 43-57.

Davenport, T.H., Prusak, L. (1998). *Working Knowledge: How Organizations Manage What They Know*, Boston: Harvard Business School Press,

de Geus, A. (1997). *The Living Company*, Boston: Harvard Business School Press.

Gupta AK, *et al* (2000). "Knowledge flows within multinational corporations", *Strategic Management Journal*, 21, no. 4

McCann, Joseph E., Buckner, Marilyn (2004). "Strategically integrating knowledge management initiatives", *Journal of Knowledge*

Management; 8 (1), Retrieved September 19, 2005, from www.emeraldinsight.com/ft/

Mosher, Paul H. (1981). "Fighting back: From collection development to collection management." IN: Branin Joseph J. (2003). "Knowledge Management in Academic Libraries: Building the Knowledge Bank at the Ohio State University", Retrieved November 27, 2005, from https://kb.osu.edu/dspace/bitstream/1811/187/1/KBJAL.pdf

Mitchell, K D. (2000). "Knowledge management: the next big thing" *Public Manager*, 29 (2), 57-60.

Nadler, D.A., Tushman, M.L. (1997). *Competing by Design: The Power of Organizational Architecture*, New York: Oxford University Press

Nonaka, I., Takeuchi, H. (1996). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*, New York: Oxford University Press

Nonaka, I. (1991). "The knowledge-creating company", Harvard Business Review November - December, 96-104

Rowley, Jennifer (2000). "Is higher education ready for knowledge management?" *International Journal of Educational Management*, 14 (7), Retrieved September 27, 2005, from www.emeraldinsight.com/ft/

Rowley, J. (2003). "Knowledge management – the new librarianship? From custodians of history to gatekeepers to the future", *Library Management*, 24 (8/9), 433-440, Retrieved September 7, 2005, from www.emeraldinsight.com/ft/

Singh S.P. (2004). "Collection management in the electronic environment", *The Bottom Line: Managing Library Finances*, 17 (2), Retrieved October 17, 2005, from www.emeraldinsight.com/ft

Stewart, T.A. (1997), *Intellectual Capital: The New Wealth of Organizations*, New York: Currency Doubleday

Walczak Steven, (2005). "Organizational knowledge management structure", *The Learning Organization*, 12 (4), Retrieved September 7, 2005, from www.emeraldinsight.com/ft

Wiig K.M. (1999). "Knowledge Management: An Emerging Discipline Rooted in a Long History", Retrieved September 7, 2005 http://www.krii.com/downloads/km_emerg_discipl.pdf.

Zuboff, S. (1989), *In the Age of the Smart Machine*, New York: Basic Books

THE ROLE OF KNOWLEDGE MANAGEMENT IN HEALTH LIBRARIES IN UGANDA: A CASE STUDY OF ALBERT COOK LIBRARY, MAKERERE UNIVERSITY

Didace M Agaba and Alison A. Kinengyere

Abstract

The development of knowledge management in recent years has become a key concern for librarians and libraries. Although Knowledge Management is an old concept, we need to recognize the fact that it has been with us but not in its infancy especially in the health libraries. It therefore calls for major change in institutional thinking and acceptance by the librarians that their service must also be subject to continuous improvement.

This paper examines important issues in the development of KM, and how health libraries can become more effective and efficient as information intermediaries. It will also examine the role that KM has played in the Makerere University medical school. The paper concludes that institutional policy, new technologies and the push towards the use of electronic information resources are forcing changes throughout health libraries.

INTRODUCTION

As a sub discipline of the knowledge economy, knowledge management is a new concept that has appeared world wide in recent years. However, proponents of knowledge management argue otherwise, that organizations have been managing their knowledge since dawn of time. Knowledge management requires linkage of information with information, information with activities and information with man so as to realize the sharing of knowledge (Shanhong, 2005). Knowledge Management, from the librarian's perspective refers to effectively identify, acquire, develop, resolve, use, store and share knowledge, to create an approach to transforming and sharing of tacit and explicit knowledge, and to raise the emergency and innovation capability by utilizing the wisdom of the team (ibid, 2005). Knowledge management makes it possible to get the right information into the hands of the appropriate people at the time they need it to make decisions.

Knowledge management is one, but by no means the only, set of concepts concerned with how organizations make the most of their knowledge assets. It can also be seen as a set of techniques and practices that facilitate the flow of knowledge into and within an organization. Since the knowledge management concept is as old as knowledge itself, its important to look at its framework. According to (Machlup, 1980) there are five categories of knowledge which include; practical knowledge, intellectual, small time and pastime, spiritual and unwanted knowledge. One of the major objectives of knowledge management should therefore be to extract the knowledge that exists tacitly in the librarians' minds, increase the sharing of that knowledge and expedite its flow (Parker, 2005).

According to Birkinshaw, 2001, in practical terms, there are three elements to knowledge management. Firstly, the organization should encourage individuals to interact or to share ideas on an informal basis. Secondly, systems are needed to codify the knowledge so that it can be used by others. Most valuable knowledge is tacit (or held so deeply by the individual) that it is so hard to express or write down. The third element is that organizations need to get access to new knowledge from outside boundaries, as a means of updating and renewing their knowledge base. For knowledge management to succeed organizations must consider it as zero-based i.e. to make it work, you need to recognize that you are already doing it both formally and informally through social networks. Knowledge management should focus on generating enough new knowledge than focusing too much on recycling existing knowledge. Organizations should also avoid using managing techniques that end up looking like traditional techniques that have been used for a number of years.

LIBRARIES AND KNOWLEDGE MANAGEMENT IN THE DIGITAL AGE

As libraries struggle with the fall out of the digital age, they must find a creative way to remain relevant to the twenty first century user who has the ability and means of finding vast amounts of information without visiting libraries. The Internet and the introduction of computers will continue to lessen the need to visit libraries. This free information on the web in addition to the escalating costs of library materials, threatens the traditional

mission of libraries, to create and sustain large, self-sufficient collections for their patrons (Troll, 2002). While all organizations (libraries inclusive) require information to guide their strategic decision making, they must provide a service to fill the gap that is developing as a result of the digital age.

There is therefore the need to reposition or enhance libraries to continue acting as knowledge management centers. It should be noted that information technology tools should not be substitutes for social interaction. Most people would prefer to talk to colleagues or reference librarians about latest ideas than to find something written.

Knowledge Management promotes an integrated approach to identifying, capturing, retrieving, sharing, and evaluating enterprises information assets. These information assets may include databases, documents, policies, procedures, as well as the uncaptured tacit expertise and experience stored in individual's heads" (www.gartner.com).

LIBRARIES AS CENTERS OF KNOWLEDGE MANAGEMENT

As libraries of all sizes and types today continue to embrace digital collections, most of them will continue to offer both print and digital collections for many years to come. The role of knowledge management in libraries therefore will become more important since the development of knowledge economy continues. Human resource management is the core of knowledge management in libraries. In the knowledge economy era libraries must attach importance to training and life long education of library staff, to raise their scientific knowledge levels and ability to acquire knowledge. Knowledge management requires not only knowledgeable employees but also specialized knowledge workers.

The major role of knowledge management in libraries is to promote knowledge innovation, which is the core of knowledge economy society. Therefore, as bases for collection, processing, storage and dissemination of knowledge, they represent a link in the scientific system chain. A number of libraries take part in scientific research processes; they should act as bridges for turning results of knowledge innovation into realistic

productive forces. This can further be promoted through relationships between libraries and users, which can strengthen knowledge internetworking and enhance knowledge flow. Libraries as bases of knowledge innovation should carry out researches on development and application of information resources.

Information technology as a tool for knowledge management is indispensable in the application and exchange of knowledge in libraries. Since knowledge acquisition is the starting point of knowledge management in libraries, the application of information technologies enlarges the scope of knowledge acquisition; it also enhances the speed and reduces the knowledge acquisition cost (storage and retrieval).

CONTENTS AND TECHNOLOGIES OF KNOWLEDGE MANAGEMENT IN HEALTH LIBRARIES

Libraries are supposed be knowledge repositories, they therefore store both knowledge and information in both print and electronic form. Libraries use diverse media and other channels to disseminate various new knowledge they may acquire. It is therefore necessary to strengthen knowledge management dissemination by uninterruptedly strengthening the creation of libraries' own information resources (Shanhong, 2005).

Knowledge innovation in libraries which refers to the production, diffusion and transfer of knowledge as well as of networks systems, is one of the contents of knowledge management. Its role is to enrich and enlarge both the theoretical and practical research fields in health and information science through pursuing new trends in both fields. Through innovation management with the evolution from traditional libraries to digital ones, libraries should build technical facilities to support knowledge management. To improve access and transfer of knowledge technologies such document scanning, sharing tools etc. are central.

Other contents of knowledge management in libraries include human resources, where staff is expected to have great amounts of expert knowledge. This can be meaningful only if it is shared with users and amongst fellow staff. Their knowledge and experiences should be shared

through writing, publishing and training. Since such valuable experiences tend to be accumulated over time, attention should be paid to favorable working conditions that will contribute to staff retention.

ALBERT COOK MEDICAL LIBRARY

The library was established by Dr. Albert Cook in 1924. Later, when the Faculty of Medicine was established in 1946, the library started serving higher medical education.

The Library houses an archive of the Sir Albert Cooks original hand-written patient records dating as far back to 1900. In 1965, the medical library was named after its founder, hence its official name "Sir Albert Cook Memorial Library". It is Uganda's major Biomedical/Health Sciences Library. In 1990, SatelLife introduced the library to electronic resources using e-mail. This opened the doors to accessing current literature and facilitating document delivery. The library mission is to meet study, teaching and research information needs for sustainable national and regional development.

COLLECTION

The library's rich collection includes serials, books, archives, CD-ROMs, slides, photographs and video tapes. The library is in the process of converting its manual catalogue to an online one by adding its stock to the Makerere University Library Online Public Access Catalogue (OPAC). Some of the Albert Cook Library stock is available from the OPAC. It also has over 55,000 volumes of bound journals/periodicals, and about 100 current print titles as well as access to online full-text e-journals. It has a collection of reports from the Ministry of health, Non-Governmental Organisations in Uganda, and the World Health Organization (WHO) publications.

The library holds about 25,000 books/monographs, and a collection of dissertations/theses. It also has about 300 volumes of medical archives "The Sir Albert Cook Collection". This is a rich collection of archives comprising of Dr. Albert Cook personal library collection, Mengo hospital

records dating from 1897, Church Missionary Society documents, early textbooks and dictionaries of medicine, pamphlets, and reports photographs. These have attracted researchers and scholars from all over the world. The library provides a free literature search service from a number of medical/health databases which include AIDSLINE, Cochrane, HINARI, Medline, POPLINE an index database of Uganda Health Literature, Africa Index Medicus (AIM).

THE ROLE OF KNOWLEDGE MANAGEMENT IN ALBERT COOK MEDICAL LIBRARY

The value of Knowledge Management relates directly to the effectiveness with which the managed knowledge enables the members of an institution to deal with today's situations and effectively envision and create their future. Health sciences libraries in Uganda have all gone a step further to ensure that knowledge is managed and effectively utilized.

- Albert Cook Library has become a key knowledge management center in health sciences and has quite a number of information resources. These range from print to electronic and its now moving to the digitization of its resources through the Uganda Science Digital Libraries (USDL). In collaboration with the Main Library, Albert Cook has embarked on digitizing its local content collection using the DSpace software. The content includes research reports, dissertations and theses, as well as refereed articles published about Uganda. So far the Albert Cook Library started with content collection, and is now entering the content into DSpace. This can be viewed at www.dspace.mak.ac.ug/8080/dspace .

- With careful analysis of its users' needs, the library has strived to acquire some of the resources through its partners, for example: DFID/British Council and Kent, Surrey and Sussex Health Libraries and Knowledge Services and Dreyfus Health Foundation. The partners have facilitated information sharing through exchange programs, and also technical, financial and infrastructure support.

- Through the Online Public Access Catalogue (http://libis.mak.ac.ug:8000/cgi-bin/gw_42_20a/chameleon and the library website (http://www.makerere.ac.ug/mulib/acooklib), which serves as a portal for most sources of relevant knowledge a number of its electronic resources can be accessed. This has been made easy by the availability of information and technological infrastructure.

- The library is a knowledge reservoir of most medical literature in Uganda. The availability of a number of databases in its collection enables a number of users' accessibility. These have been indexed and archived and will soon be available in digital form. Use of the traditional methods of cataloguing and classification and now the availability of the Virtua system, a number of print and electronic resources are easily accessed.

- ACL has also had a long tradition of resource sharing and networking. This has been enhanced further by developments in IT. The formation of a Consortium of Uganda University Libraries (CUUL) will further enhance the cooperation and interlibrary lending that has been in existence. Both individual researchers and institutions will continue to benefit from this knowledge management role.

- To facilitate the implementation of knowledge management, information technology infrastructure has been put in place. With the support of a number of development partners and the Government of Uganda, computers and other infrastructure including the intranet and Internet are now available. These ensure that the acquisition, organization, storage and dissemination functions of the library are handled fast and easily.

- End user training programs have also played a vital role in organizing the medical school's knowledge which in turn impacts on educational and research processes in the school. An online tutorial has been designed for fresh students and staff of the medical school. The Albert Cook website has a link to the tutorial. This tutorial is meant for those who miss the physical training at the beginning of

every academic year. Visit the tutorial at http://www.makerere.ac.ug/mulib/acooklib/acmtutorial/index.htm

- The provision of quality services is one of major objectives of this library, and through circulation, the usual user queries and interlibrary loans, lots of health information has been efficiently and effectively disseminated. This has further been enhanced by the availability of such services as current awareness service and selective dissemination of information. This has improved the quality of service delivery and research.

- Albert Cook Library employs quality staff who process and repackage health information and are able to share the same with their clients. Professional staff continues to index information received from both internal researchers, students and academicians and other research communities. The library values its staff as knowledge assets and with their experience; they assist in offering and sharing heath information. Health librarians have been active participants in health care promotion and some have played a number of roles in educational and clinical research. In some cases they have also partnered with those who serve in the medical profession. Through regular training, tutoring and mentoring of staff and students, utilization of information resources has been tremendously improved.

- Albert Cook Library acts as a national health library in Uganda. It is therefore responsible not only for dissemination of health information to other health libraries and researchers but also availing them with health literature. Libraries like the Ministry of Health Resource Centre, Faculty of Veterinary Medicine Library and other health centers countrywide have been beneficiaries of such literature.

CHALLENGES

Despite the success so far realized a number of problems continue to inhibit knowledge management practices in the library.

- In Albert Cook Library like most libraries in the developing countries small budgets continue to deter the growth of both print an electronic resources. This is coupled by the growing numbers of students who find the infrastructure unable to support both students' and academic staff research. Therefore, technologies that support the creation/acquisition, organization and dissemination of knowledge in the knowledge management system are dogged by the above.

- The rapid increase in communication technologies and information has created an overflow of information and knowledge. Cultural, social, and technological changes and economic pressures have produced a fast-changing environment, particularly in the work place. This calls for more qualified and experienced staff that will be able to meet the demands of knowledge management work; integrating and coordinating different disciplines that are the foundations of knowledge management.

- Like any other East African country, Uganda has of recent been faced with electric power shortages. This has led to power supply interruptions which affect use of computers, leading to limited utilization of electronic information.

THE WAY FORWARD

Albert Cook Library should be seen to be a valuable vehicle for developing, sharing and managing health information. It should avoid "reinventing the wheel" and continue to generate knowledge in response to health problems and every opportunity that arises geared towards knowledge management should be exploited.

The library should continue to raise awareness of knowledge management among its staff in particular, other health librarians and their institutions. It should continue to provide training in information technology and identify

and continue to share best practices. It's the mission of most health libraries to vigorously promote evidence-based practice and dissemination of research results that will continue to promote knowledge management.

CONCLUSION

Today, the public has begun to understand health libraries in new ways, this new understanding will continue to impact among other things, expectations of health librarians in the twenty first century. Those in this field should be aware that, to be successful, the health librarian must possess knowledge, skills and abilities that were not expected in the past. As health librarians we also have much to learn from the emerging roles of the health sciences and concentrate on the many ways in which we might assist users in the process of transforming information into knowledge. It must be appreciated that health science library resources both print and electronic are critical to most Universities' missions. Hence as keys to the centrality of our libraries, we have many different roles to fulfill in knowledge management. The existence of health libraries in the 21st century is threatened by new technologies that are empowering the individual, whether it is in the laboratory, clinic or the community, to gather access to information without the need to refer to experts for assistance. Despite this assertion "there is life after death", the roles of the health libraries and health librarians are still needed for effective and efficient access to information resources.

REFERENCES

Birkinshaw, Julian. (2001). "Why is knowledge management so difficult?" Business Strategy Review, Vol. 12, No. 1, pp. 11-18.

Gartner Group Symposium: The Future of IT. Itxpo97," October, 1997.

Jantz, Ron. (2001). "Knowledge management in academic libraries: special tools and processes to support information professionals". Reference Service Review, Vol. 29, No. 1, and pp.33-39.

Lee, Hwa-Wei. "Knowledge management and the role of libraries". Available at: http://www.white-clouds.com/iclic/cliej/cl19lee.htm

Mphidi, H. (2004) "The utilization of an intranet as a knowledge management tool in academic libraries". The Electronic Library, Vol. 22, No.5, pp.393-400.

Parker, Kevin R.(2005). "Libraries as knowledge management centres", Library Management, Vol. 26, No.4/5, pp. 176-189.

Rashbass, J. (2000). "Will technology kill the healthcare library?" Vol.17, No.1, pp.51-55.

Shanhong, T. (2000) "Knowledge management in libraries in the 21st Century". 66th IFLA Council and General Conference, Jerusalem, Israel, 13 -18 August. Available at: http://www.ifla.org/IVifla66/papers/057-110e.html

Watstein, Sarah B. (2004), "Emerging role of health science librarians: academic library centrality". Reference Services Review, Vol. 32, No.1, pp.13-15.

William, A M [et al] (2004) "Using Knowledge Management practices to develop a state-of-the-art digital library" Med info. 11(Pt 1):99-103.

KNOWLEDGE MANAGEMENT INITIATIVES IN SELECTED LIBRARIES IN KENYA: A CASE OF SMALL SCALE HORTICULTURAL FARMERS, MARKETING EXPERIENCES

Eric Ndegwa

Abstract

With the advent of methodologies and technologies in the management of information, new challenges have emerged for the small- scale farmer/business persons.

The Once upon a time cherished system of conducting international business via collective price fixing agreements is no longer tenable, the reason being that it is because of the convenience of the world wide web/ internet which today allows any interested party from whatever corner of the globe to advertise their products in the open market and sell on the basis of willing buyer willing seller without having to observe any national or international obligations.

The sacred trade boundaries or quotas have since been neutralised thus leaving the quality of products alone to be the critical determinants of all sale transactions.

Local farmers have also embraced the existing knowledge management initiatives in the market in order to remain in the ever -growing competitive market.

Libraries in the developing world have had to change their ways of practice so as to facilitate knowledge sharing and the subsequent transfer process.

More emphasis has now been placed on Knowledge Management as opposed to mere library services in most of the prevailing information services and systems.

Lessons learned confirm that small scale farmers are better off when they insist on a systematic identification of knowledge sharing practices and best practice transfer in any information service systems.

The technological revolution experienced in other spheres of advancement has also necessitated the provision of 'enablers' in knowledge management between the libraries and the small -scale farmers.

An overview of Kenya's horticultural export sector reveals among other things that although the agricultural sector is an important component in the economy(it provides 3% of GDP and 18% of formal sector employment); it has not been a significant contributor in the National Economy because it has been left in the hands of expatriate and or settler farmers who dominated it right from the colonial period (1950s) to the present.

The policy and institutional environment of the sector have undergone some changes during the last twenty years as a result of deregulation and liberalization in the global economy.

The World Trade Organization (WTO) literally dictate the direction trade arrangements must take within the North-South axis.

The marketing of agricultural products for the domestic as well as the international market in Kenya have been deregulated since 1980s and have also experienced substantial liberalization through conversion of quantitative controls over imports. On the export front , there has been a similar deregulation based on the quality of agricultural products to the extent that most producers were actually demoralised altogether in their pursuit to compete with the more established and corporate exporters.

Major shifts in economy, society and technology create new dimensions and challenges for the world community *(Naisbitt et al., 1990).* Knowledge management harnesses the knowledge resources and capabilities of the organization to learn and adapt to its changing environments. In the new economic milieu, firm and industry level competitiveness is increasing a function of its "capacity to generate, process and apply efficiently, knowledge-based information'' (*Tregurtha,2002*). All players are increasingly becoming conscious of the role knowledge in the respective field of occupation.These statements provide a clear illustration of current

intellectual thought in international trade for all the stakeholders be they small scale farmers or multinational middlemen corporations.

Economic liberalisation, mass-individualization in society and a revolution in information and communication technology (ICT) really change existing relations between countries, communities, enterprises and individuals… Traditional trade barriers gradually disappear, greater freedom of enterprise across borders, increased accessibility to different locations and extremely quick communication possibilities offer new challenges not only to multinationals but also to small companies and individuals.

In their latest press release by the International Trade Centre in an article "Boosting market access for least developing countries" the report says that one step toward changing these trends and leveling the playing field is to make tariff information more available to Less Developed Countries (LDCs). The trade centre have recently constructed a market access map which brings all this information in one place, making tariff analysis more transparent. The Market Access Map is simply a web-based tariff analysis tool, able to provide a comprehensive source of tariffs and market access measures applied at the bilateral level by 170 importing countries to the products exported by 239 countries and territories. This has been prompted by previous analyses which indicates that while developing countries as a whole are improving their market access, the world's poorest countries are not showing signs of that improvement (*ITC,2005*)

Global networks and interdependencies will develop, supported by Information and Communication Technologies *(Van Oosten,1998*) and it would be foolhardy for the third world countries to sit back and wait for concessionary or apologetic declarations which are themselves dictated by the first world who own the technologies to give a partisan brokerage that would sustain the international trade for farm produce. All stakeholders must use synergy to move progress upwards both in prosperity and advancement that is sustained by ICT.

The on going arguments present a bird's eye view of the role of information in our global economy. Farmers are the backbone of most economies in the third world and Kenya is no exception. We have had a

situation where scientific research findings clearly reveal that small and medium production is beneficial to the farmer only when its marketing is internationalized .

Whenever entrepreneurs are not restricted by traditional trade barriers such as taxation, regional and national boundaries, and other trade restrictive practices, they are able to compete on the basis of quality of the products produced and nothing else.

In the absence of direct farmers contact with his /her consumer, there is always the danger of exploitation especially as the success of any sale s initiative having to depend on an intermediary. This has obviously produced a cadre of small scale middlemen whose responsibility is to purchase from the local farmer for the sole purpose of exporting the same to an international market.

Elsewhere in Africa independent marketing has had discouraging results since intermediaries often dictate the trend of market behavior. In South Africa farmers prefer to deal with intermediaries because of the quantity of produce involved. In East Africa for along time, all international trade revolved on a person to person basis leaving out factors like standards and terms of availability to the national trade authority. The market was closed in a way since contacts guaranteed level of success or failure .It was easy therefore to sell one's produce only when the particular crop was in season.

Things have changed considerably to the effect that e-commerce is the trend- setter for almost all commodities including horticultural produce. Information and Communication Technology has empowered the internet to the extent that it is no longer extra ordinary to look, find and execute business information online without having to go through a third party. We must therefore learn to depend on knowledge management more and more in order to reach the optimum quest in any business endeavor.

This is not the right place to define information or knowledge management but we can use the existing definition given by *Gartner,(2000*) thus it is a discipline that promotes an integrated approach to identifying, capturing,

evaluating, retrieving and sharing all the information assets of an organization.

Another definition *Malhotra (2000*) goes on to say that knowledge management enables libraries to organize and provide access to intangible resources that help librarians and administrators to carry out their tasks but the most appropriate explanation is that one given by *Van Oosten*,(2000) who says that if knowledge management is applied in libraries, personal knowledge may be turned into corporate knowledge that can be widely shared throughout the library and it can help employees to produce outputs that tap into their skills, talents, thoughts and ideas so that decision-making is improved concerning strategic issues, competitors ,customers, distribution channels, products and services.

This phenomenon calls for a deliberate systematic knowledge sharing regime which should regularly sustain transfer of knowledge between the small scale farmers and their customers who have since switched their window shopping habits to the internet. This is so regardless of the cost implications of web presence, which in more ways than one are prohibitive for the small scale operator. As *van Oosten*,(2000) rightly says; "in the future it will become necessary to create vertical structures rather than horizontal partnerships dominated by growers…production will be market directed, while growers will be reliable suppliers of specified products delivered at pre-set prices and quality levels."

He sees a situation where it will be possible to control production in separate locations world-wide from a single site, while establishing links with market parties anywhere in the world. This is indeed possible although it does not take into consideration the trading platforms like shipping, insurance and freight costs will remain the same regardless of any transactions negotiated on the web.

As computing powers and information- processing capacities increase enormously in computers, there is likelihood of unprecedented innovations being conceived at plant, crop and product levels. This would bring in closer associations between researches done, research findings and information sourcing wherein scientific findings are made available to

information scientists almost simultaneously who in turn make it available to the information seeker (the small scale farmer). The principle of knowledge sharing through deliberate transfer of the same between the farmers and the consumers of his/ her produce will find prominence in the developing world.

There is a possibility to witness more and more of our small and medium enterprises forge links with information centers/bureaus for the sole purpose of knowledge acquisition, processing and dissemination through the medium of ICT and all other systems that may be available in any given location for the farmer.

It will be necessary to have solid knowledge of markets, chains and relevant technologies while being able to respond to new developments with great speed and resilience. There is likely to be a dependency switch to the world wide web, internet and appropriate intranets as these have proved indispensable to development. Intranets are now considered as a basic knowledge management tool which provides people with the opportunity to be more informed and to be able to make better and faster decisions (*Mphidi*,2004).

E-commerce which has been defined elsewhere as that which facilitates business transaction over computer-mediated networks explains that a transaction encompasses more than actual purchase of a good or service: it also includes both transaction preparation and transaction completion activities.

Transaction preparation covers all activities related to the marketing, advertising and exchange of information associated with the sale of a logistics actions required to transfer ownership of a product from the seller to the buyer.

Bee keeping has been practiced in Kenya for a long time within the framework of rural cooperative development movements. Rural farmers have formed cooperative societies to deal with the marketing of honey products in the international market. Due to high level of competition and

inefficiency in the management, most cooperative enterprises have never made a difference in the economic lives of their members.

With the introduction of the internet and e-commerce, there is hope that the same farmers can do business in the global platform without having to depend on their often unreliable cooperative officials. Theoretically e-commerce should ideally benefit the small farmer by its ability to;

- Promote information flows
- Facilitate industry co-ordination
- Reduce and eliminate transaction costs (*Tregurtha*,2002)

They however have no reliable access routes to the bee product markets because they are unable to create a web presence independently, particularly because they lack information on how to proceed in the sea of information. There is the problem of determining a relationship between knowledge and information whereby one has information about prospects of a good sale but at the same time lacks knowledge on the entry requirements into the market. Libraries have become bridges through which information can be processed and delivered to the intended recipients in a format that is suitable for their consumption.

The International Centre of Insect Physiology and Entomology (ICIPE) have through its entrepreneurship division taken a bold move to assist local farmers in Eastern and Western Kenya in the processing and marketing of honey in the international market. They are using research findings and the existing information management system to fine tune their knowledge management to the benefit of the farmer.

Through this initiative, the farmers are now able to use their website to advertise farmers silkworm and honey products globally thus getting the best deal resulting from sustained quality management of information that is essential in research.

The farmers are provided with latest information on the management of their small- holder plots, the best practices for conservation of their working environment and the packaging of their products ready for the

market. The content of the information package includes knowledge avenues in the website, CD_ROMS, e-photographs and microforms, *Raina*,(2004).

Push technology (*Srinivasan*, 1998) an invention linked to the development of digital libraries has been cited as useful to knowledge management in that it can be used to:

- Identify relevant research groups and monitor their specific contributions to knowledge
- Identify and monitor relevant conferences for the benefit of a specific research
- Monitor the contributions of relevant authors through e-journals, proceedings and their websites
- Identify relevant professional training opportunities
- Search online databases and bibliographic indexes for relevant information
- Identify relevant software/hardware, locate competitive prices for relevant information
- Monitor local opportunities within a geographical region for potential collaboration

There are several organization and institutes in Kenya who have introduced tele-centres and information/documentation centers which combine all aspects of knowledge management in order to empower farmers yields and marketing. Kenya Agricultural Research Institute (KARI) and World Centre for Research on Agro-forestry (ICRAF) are the two centers of excellence in the practice.

In order for our farmers to remain and or excel in their effort in the marketing of their produce, they would have to adopt this technology in part and also in collaboration with selected information resources (libraries or documentation centers). This becomes even more important when one considers the extent to which research can be applied immediately in real life situations.

The successful entrepreneur, the small - scale farmer will be expected to analyse all the problem solving and researching methods of the community

he/she is part of and use their research methods to be able to bring in an appropriate constellation of technological, human and disciplinary strengths to design knowledge management solutions. In the case of the farmer's inability to interpret research findings directly, the library responsible would have to process all this information and present it to the farmer in a format and language that is acceptable to the latter. The Centre has a kind of Science park where scientists and business oriented experts merge to support research and also market their results of collaboration. In all the scientific conferences and workshops, ICIPE has promoted the farmers products arising from bee keeping and silkworm projects.

The core functions of libraries (*Akeroyd*, 2001) are also changing with the times so much that its main duties seem to be moving towards customization, rights management, repackaging and reformatting. There is therefore a need to be active in identifying content, disseminating and re-presenting resources to suit different audiences and markets. Any success attributed to ICIPE's collaboration with local farmers in Kenya is indeed in the right track by encouraging a collaborative effort between research, information services and produce marketing.

LESSONS LEARNED

Small scale farmers are able to do business with people they know or have been introduced by their peers. For them to adopt knowledge management in their daily activities they would require our assurance the cost of internet and web technology will not eat into their profit margins.

Majority of our people in the developing world do not still have the " enablers" which would facilitate their resolve to capitalize on knowledge management as one way of keeping the international presence brought about by new and emerging technologies. There needs to be more collaboration between finders and users of knowledge that can only be captured in libraries and information centers.

CONCLUSION

The structure of the horticultural trade renders it a unique area in knowledge management and in particular the employment of internet resources of information The continued prevalence of information famine on the scientific community in Africa is likely to continue since we still cannot bring out existing knowledge from the disadvantaged regions or groups such as the ones discussed above.(*Chan,2005*).

The technology factors will continue to pull backwards any gains made by research or collaboration between research and consumers of research information. In East Africa, the constraints which will continue to dodge the farmers are (*Tregurtha*, 2002);

- High internet costs
- Limited bandwidth
- Lack of rural communication infrastructure
- Limited availability of IT skills and
- Lack of clarity on the legal status of e-mail communications

It is imperative that more of such initiatives like the cases mentioned from special libraries and or information centers in Kenya be made by all the stakeholders in the agricultural sector so that scientific research findings are not left lying on the shelves in workshops. Knowledge Management is an all encompassing discipline which requires a new culture of collaboration between science, libraries/ information centers and the horticultural farmers in our rural areas.

REFERENCES

Akeroyd, John (2001) The Future of academic libraries. In; Aslib Proceedings, Vol.53, No.3 March, p.84

Chan, Leslie, Barbara Kirsop and Subbiah Arunachalam (2005) Open Access Archiving; the first track to building research capacity in developing countries; in Science and Development Network, November,. p. 2

Gartner Group: (2000) Knowledge Management in: WWW.stevedenning.com/what_is_knowledge_management.html, p. 394

International Trade Centre (2005). Boosting Market Access for least developed countries. No.236,p. 1

Malhotra, Y (1998): Knowledge management , knowledge organizations and knowledge workers: a view from the front lines. In; www.brint.com/interview/maeil.htm, p. 394

Mphidi, Hamilton and Retha Snyman (2004). The Utilisation of an internet as a knowledge management tool in academic libraries. In; The Electronic Library, Volume 22. Number 5, p.399

Naisbitt, J and P. Aburdene (2000): Mega Trends. The New Directions for the 1990's .New York: Morrow & Co. p.5

Oosten, H. J. van (1998): Horticultural research in the Netherlands: changes and challenges for 2010. In: NRIO Report 98/26. The Hague, July, p. 7

ibid. p.5

ibid. p.7

Raina, S.K.: Insect Rearing Projects. In: ICIPE Annual Report 2004. pp.36-74

Srinivan, Padmini (1998): Integrated digital libraries: changing the essence of research,analysis and knowledge management. In: Jounral of Knowledge Management, Vol.2, No.2, p.50

Tregurtha, Norma and Nick Vink (2002).: B2B E-commerce and the South African Horticultural Export Industry: current status and future directions. Matieland, pp.1-34

INFORMATION MANAGEMENT OR KNOWLEDGE MANAGEMENT: PRACTICES OR INITIATIVES IN ACADEMIC LIBRARIES IN AFRICA

Priti Jain and R.B. Nfila

Abstract

Today Knowledge management (KM) is becoming the buzz word not only in the library and information world but in government and the private sector. Libraries are undergoing tremendous transformations that have been occasioned largely by information and communication technologies. Increasingly, library and information professionals are being referred to as, or are calling themselves, information or knowledge managers. Similarly, libraries and information centres are being referred to as knowledge centres. To provide a proper understanding of various dimensions of KM, this paper makes an attempt to provide the relationship between Information management (IM) and KM, and addresses the question of whether KM should be seen as the discipline within which information and library science reside, or if it is another management fad. It highlights the challenges of KM for librarians and information professionals and finally, suggests a way forward.

Keywords: Knowledge management; information management, libraries, academic libraries, Africa., Knowledge managers, information magares.

INTRODUCTION

The question of whether libraries deal with knowledge management or information management can be clarified by having an insight understanding of various dimensions of KM and discuss the relationship between IM and KM in Libraries. Generally, available literature defines IM and KM from a business perspective and this has made it difficult for librarians and information professionals to know whether they are information managers or knowledge managers. On one hand there is no common agreement on the definition of the concept of KM and on the other hand there has been a problem of using IM and KM interchangeably. As such, it is better to spell out the meaning of these two concepts in the

context of specific organization, in this case the academic library environment.

To understand the theory of KM, the paper looks at the definition of data, information and knowledge and establishes a working definition of KM in libraries.

DATA INFORMATION AND KNOWLEDGE?

Data are defined as “facts, events, transaction, etc. which have been recorded. They are usually regarded as input or raw material from which information is produced” (Obrein, 1993). Data are raw numbers which, by themselves, are of inadequate value to make any decision. They are converted into information by analysis, interpretation and putting them into context.

Information on the other hand, is defined as “data that has been organised within a context and translated into a form that has structure and meaning” (Knowledge Management Glossary, 2005; Wig, 1999; Meadow, et al 2000). According to Nonaka and Takeuchi (1995:58), “information is a flow of messages, while knowledge is created by that very flow of information anchored in the beliefs and comments of its holder.” In KM we group the relevant information from the reservoir of information and in IM information is put into the context and interpreted. So, information is construction wedge of knowledge and knowledge is associated with organisational values, beliefs and action.

Leonard and Sensiper (1998) defined knowledge as "information that is relevant, actionable, and based at least partially on experience". Knowledge is more personal because it is acquired to some extent through experience and/or observation.

Based on the above definitions, information is, thus, refined data and knowledge is refined information while data is merely raw facts or observations.

THE DIFFERENCE BETWEEN KM AND IM

According to literature, KM is a more holistic and wider form of information. Some of the elements of KM such as: acquisition, creation, renewal, archival, organisation and dissemination of information are long present in libraries. Many librarians still believe that "KM is simply managing information and explicit or documented knowledge, which is what they have been doing for many years" (Koina, 2003). But the authors strongly believe that information and knowledge are not the same thing. Chase (1998) has rightly argued that "KM is not managing or organising books or journals, searching the Internet for clients or arranging the circulation material" (Chase, 1998). It goes beyond that. KM is about "enhancing the use of organisational knowledge through sound practices of knowledge management, and organisational learning" (Chase, 1998).

Generally a number of authors agree that KM focuses on the sharing of knowledge which has been created, acquired, and captured within the organization wherever it resides, to enhance learning and performance to achieve organizational goals and objectives (Bouthiller and Shearer 2002; TFPL, 1999; Skyrme, 1997; White 2004). The main focus of KM is to create new knowledge, from personal experience and expertise, for the organization and re-use that organizational knowledge to achieve organizational objectives. For KM to take place, an organization must create a conducive environment that encourages employees within an organization to create new knowledge, and share it amongst themselves to learn more to enhance service delivery to customers. Grey (1998) also states that KM is people focus and therefore concerns itself with "critical thinking, innovation, relationships, exposure to ideas, patterns, and competencies" and encouraging group learning and sharing of experiences.

In an academic library context knowledge created and shared can lead to a better understanding of information and knowledge needs of library users, and thus enhance delivery of relevant services. Academic librarians need a mix of technical, organisational, interpersonal skills and competencies to help them handle information services.

The difference between KM and IM can be distinguished and deduced from this discussion and summarised as follows: Certainly, both involve human element, but at different levels.

- IM sees information as resource and lay emphasis on human involvement in terms of information audit, acquiring, storing, retrieving, and disseminating information. It works with objects and achieves its success on the preservation and retrieval of information.

- KM is working with people. Its success depends on the use of knowledge. It emphasises people management to take into custody the hidden knowledge from their heads. KM focuses on sharing, creating, learning and enhancing information for organisational improvement. In other words it targets collecting and distributing knowledge - both explicit and tacit in a consistent and contextual manner.

Indeed knowledge is derived from information, but it is a cut above information. In view of the fact that KM is based on personal experience, observation, familiarity and study and also, because it is wider than IM in terms of activities involved, IM can be considered the "building block" of KM.

For the purpose of this paper we will attempt to define KM from a perspective of library and information services. Our definition shall embrace the process of creating, collecting, organizing, sharing, and learning, and disseminating information throughout an organization to help people share and learn from each other's knowledge, as well as provide information for use by customers. Academic libraries are charged with the responsibility of carrying out all these practices. However, the question that arises is whether academic libraries have been practising information management or knowledge management. Our contention is that in the current situation it is IM, not KM, which resides in academic libraries. Academic library environments, in terms of resources and facilities, may be conducive to knowledge management, but the problems of implementing knowledge management may be related to lack of policy and formalized structures to ensure that knowledge management practices take place.

This paper is based mainly on conversations with colleagues, the authors' personal observations and literature search.

The value of the paper is

- to clarify between KM and IM
- to make awareness of KM among academic librarians
- to analyse KM initiatives and practices in African academic libraries
- to highlight KM challenges for academic librarians and
- to suggest a way forward

KM OR IM WITHIN ACADEMIC LIBRARIES?

Before we attempt an answer to this question, it is important to clarify the context in which KM and IM are used in the above title. KM and IM refer to the activities and tasks performed by librarians in order to satisfy their users' needs, in other words, to deduce the capacity in what they are discharging their duties and responsibilities as knowledge managers, information managers or knowledge protectors?

As mentioned earlier our argument is that, given the current situation it is IM, not KM, which resides in academic libraries. Some libraries may be striving to reach there, but still remain a long way to reach to a full knowledge management society. KM is not just about implementing "bits and pieces", it is a complex process to achieve the main aim of benefiting the organisation. One cannot claim that KM was implemented in an organisation, based only on fact of the existence of one or more KM elements (white 2004). At the moment, it is more suitable to call academic librarians in Africa as information mangers or knowledge protectors or knowledge custodian but not knowledge managers.

It has already been acknowledged, many skills are common to both librarians and knowledge managers: information skills, information technology, multi-media and communications technology skills, publishing and document design, but there are some discrepancies as well. The discrepancies, traditionally, are that information professionals are service-oriented not value oriented. Quality of their skills and the association they form with other players such as the managers of the business's technology

and the most important users of the information service are different (Griffiths 2003). For instance, generally, librarians would focus on statistics not the relevancy of the books. In addition, librarians' image is another issue. "Information which resides in the organisation has up till now always been treated in discrete sections, or 'silos' rather than as a whole. For example, librarians have focused on the acquisition or distribution of information acquired externally to the organisation, while records managers focus on documents internal or integral to its management. In such a scenario no one group appears to have an understanding of overall information needs" (Koian, 2002).

It seems as if librarians and information professionals are calling themselves with new titles, such as knowledge managers, out of inclination or fashion in the name of innovativeness without giving a proper understanding to the criteria these tiles are associated with.

PRACTICES OF KM IN ACADEMIC LIBRARIES

KM involves the process of knowledge creation, sharing, capturing and acquiring, maintenance and exploitation of knowledge in an organization for the benefit of both its employees and clients. This paper is knowledge process based, it would be appropriate now to look at each of these processes together with some other important KM components, in the context of academic libraries to determine how do academic libraries in Africa fit in KM process.

Academic libraries may have a suitable environment for KM practices and yet fail to put KM processes in place. For example, the University of Natal, Pietermaritzburg libraries, in 2004, did not have knowledge management practices in use because of lack of existence of KM policy and strategies; lack of leadership in KM activities, and lack of knowledge capturing & acquisition (Maponya, 2004). In 1999 the University of Botswana (UB) Library was re-organized into three divisions (Qobose, 2001, Nfila, 2005) for the purpose of efficient delivery of service to customers. The UB Library is organized on the basis of teams for the purpose of knowledge sharing in terms of technical know-how and expertise in a number of areas. In spite of the change in organizational structure that allowed team

participation in decision making and sharing of ideas, the UB Library does not have written policies and formalized structures for knowledge sharing. Attempts have been made, though at ad hoc level, to encourage team members across divisions to undertake research and other projects and share their knowledge with staff through seminar presentations. UB Library has had no formalized system of identifying and capturing people's expertise and experiences, especially the expatriates who have come and gone.

KNOWLEDGE CREATION

The other problem has been the lack of formalized structures for knowledge creation. Creativity refers to the mental exercise of connecting and re-arranging of knowledge in order to generate new knowledge. This can be achieved through an appropriate knowledge sharing culture and strong belief in creativity. It has been noted through our discussions and observations, libraries often do not have a culture of creativity and they do not consider themselves as learning organisations. Librarians can repackage information according to their customers' information needs and level of understanding and give it a new look. Townley gives another good example in this endeavour, create a network of subject specialists, perhaps from several institutions, who come together to share experiences and learn from each other. Another method is to create yellow pages, classifying individuals by different areas of expertise into a logical whole. Internal cross-training and exchange with other organizations also are used (Townley, 2001). Knowledge creation can also be facilitated by electronic brainstorming tools, such as, idea processors, Group support systems, artificial intelligence.

In libraries, people normally and immediately forget about the ideas and experiences discussed as soon as they leave a discussion. Companies do audit their intellectual resources internally each year, but libraries tend to simply list their physical holdings and easily quantifiable activities, assuming that each item or activity measured is equally valuable and goal related (Townley, 2001). All of these problems can symbolise the absence of seriousness of KM adoption or unawareness of KM in academic libraries.

KNOWLEDGE SHARING

Libraries often do not have culture of knowledge sharing, which is evident from the examples of Natal Libraries and UB Library. Knowledge sharing is an important requisite for KM. According to Broadbent (1998) what people know become organizational knowledge, only when it is shared. Librarians should be leading in sharing their knowledge and skills with their customers, but practically this element is missing, which is sustained by the research findings. Librarians are professionals with high level of skills and expertise which they utilise to undertake research and data analysis to create knowledge. Through professional discussions they can share their knowledge and experiences which they apply to improve delivery of services to their customers. To create an environment supporting this kind of knowledge, management must generate meaningful contacts among the staff, provide resources and incentives, and praise progress (Townley, 2001).

Ideally academic libraries should have systems of capturing internal knowledge of their staff and identify expertise in their libraries. According to our observations and contact from different libraries, it is not happening so. Not all libraries identify what can be work related knowledge required in, for example, the coming five years. This all is necessary to bring KM in libraries. KM is based on strategic plan and, therefore, it is important to conduct a knowledge mapping exercise in order to establish the following: what are a library's knowledge needs; what are the gaps; what knowledge expertise is there; is the expertise being used effectively; or is there a need to source for expertise from outside; how does existing knowledge flow in the library; are there any blockages to its flow; are all the sources of information within the library accessible to the library users. All of this information can provide a unique opportunity to understand the library resources and identify the categories of knowledge to be managed to support their organization wide strategies and also spot library challenges towards KM.

Librarians can find innovative ways to disseminate their wealth of knowledge to customers who are in desperate need of that knowledge. Academic libraries and their associated institutions can work in close

relationship to share and disseminate knowledge. According to Maponya (2004) a study of the University of Natal, Pietermaritzburg libraries indicated that they collaborated with other libraries to acquire knowledge they could use to improve their service delivery. UB Library collaborates with a number of libraries internal and external through membership to SABINET. The question that remains unanswered is how the knowledge acquired through this collaboration has been used to enhance delivery of service.

To adapt KM, it is also important to maintain and update organisational knowledge including policies and procedures regularly. Maintaining Knowledge embraces reviewing, correcting, updating, refining, preserving, and removing obsolete knowledge and it encompasses both the knowledge in people's head and the contents of repositories. As indicated through some communications, often libraries are not performing this task regularly, although reviewing and updating through weeding and withdrawing are core activities of librarianship. Theoretically, most of the policies and procedures, missions and visions are found in libraries, they are not reviewed and updated regularly to accommodate the changes. When the "Directory of University Libraries in Africa" and "SCANUL-ECS MEMBERS" list were checked on the Internet to contact the heads of the academic libraries, most of the e-mails bounced and the web URLS did not work because the information was not updated. This can also be seen as an indication of a lack of sharing and partnership culture or a lack of appreciation of knowledge update, consequently, KM practices in libraries.

KNOWLEDGE DEPOSITORY

According to KM practices, academic libraries must have central knowledge repositories of their employees and customers knowledge or their needs. This is an essential component of KM and well-known fact to librarians. For example, "in terms of library operational information, most integrated library systems contain a component intended to provide useful information about library operation and user activity. UB Library does not have a repository of its employees and customers knowledge. The library is fully automated and its INNOVATIVE system has a number of facilities that generate information that can be analyzed for decision making. Such

information includes information on materials borrowed and in what subjects, category of users using the library, pick hours for borrowing and return of materials. This kind of information can be used to create explicit organizational knowledge, to inform services, to guide operations, and to measure goal attainment" (Townley, 2001). Libraries can also have external knowledge repositories to reinforce their organizational objectives. For example, several years ago, a faculty in the College of Engineering at New Mexico State University adopted the goal of quality, rather than quantity, in scholarly publishing. Working with the library, faculty used information from the Institute for Scientific Information and other resources as tools for determining where to publish their scholarly research. The result has been that the School of Electrical Engineering was ranked in the top ten for publication impact this year as measured by the Institute of Scientific Information (Townley, 2001).

Information Technology (IT) is also central to KM, and can support and enable KM in two ways: by providing the means for people to organize, store, retrieve, disseminate and share explicit knowledge and information rapidly around the organisation and around the world; and by connecting people with people through collaborative tools to capture and share tacit knowledge. The main train of thought in realizing knowledge management of libraries is a rational design of the organizational structure and business procedures of libraries, and cultural fostering, as well as modernized information support, thus creating an environment and incentive mechanism for innovation, exchange, study and application of the knowledge (Shanhong 2000).

According to our observations and contacts, a lack of IT infrastructure is one of the major implications libraries in Africa are facing today in terms of innovating their services. Most of the libraries are lacking this resource. "IT has the potential to change culture by cutting through traditional structures, inspiring an informal style and fostering the social networks which underpin knowledge-sharing" (Corrall, 1999). So, IT can facilitate KM in creating four types of knowledge: tacit to tacit knowledge via socialization; tacit to explicit knowledge via externalisation; explicit to explicit knowledge via combination; and, explicit to tacit knowledge via internationalisation. The development of the UB Library's information and

communications technology (ICT) infrastructure was intended to change the library into a learning center to encourage independent learning and sharing amongst students. The library staff were trained to promote the use of technology in enhancing the learning and teaching process. This could be seen as the first initiative towards knowledge management at UB Library.

Librarians generally know more than anybody else as to how to organise information into a sensible and accessible form and this familiarity of the process leads many of us into an assumption, that we are knowledge managers. KM goes far more than this. It is more towards operational knowledge. So, “While librarians are learning to be proactive in the delivery of scholarly knowledge, they need to use many of the same techniques to share operational knowledge within the library” (Townley, 2001). But “librarians' traditional reluctance to move beyond the information *container* towards analysis and interpretation of its *contents* has resulted in organisations overlooking their potential contribution, even in areas where their competence should be obvious” (Corrall, 1999). There is an urgent need for a paradigm shift. Librarians can apply KM applications in libraries, only if they are willing to transform themselves, as well as transform their libraries into knowledge driven organizations. Since librarians’ transformation is people related, learning and training initiatives can be applied for culture change (Murty, 2002). That is why Yahya & Goh strongly (2002:460) maintain that "IT has its intended usage in the context of KM; human's motive and willingness are the underlying factors that dictate the actual IT usage" "To say that knowing is a human act is to highlight the fact that knowledge involves humans who do the knowing" (Lang 2001: 44). This is to emphasise that human resource management has a key role to play and therefore remains an integral part of knowledge management.

Foregoing seems to suggests that it is information management not knowledge management that inhabits in most of the libraries. Truly, the core skills of library and information professionals are both relevant and essential to effective knowledge management, but they are often under-utilised and under-valued. Surely it is our job to put this right! (Corrall, 1999) by renovating our roles and promoting our skills.

To summarise the important KM application issues, the paper presents a checklist of KM applications as follows:

Table 1: Check Table 1: Check List for KM applications

Written Knowledge Management policy
Strong culture and formalized structure of Knowledge sharing
Strong belief in creativity
System to capture internal knowledge
Regular update of knowledge including policies and procedures
Identification of library expertise
Knowledge mapping
Knowledge management strategic plan
A central organisational knowledge repository
Availability of KM technologies & tools
Well-trained, committed and proactive, human power who can market and advocate their existence to community
Learning organization environment

This list may not be exhaustive, but covers the fundamental KM issues.

HOW KM CAN ADD VALUE TO ACADEMIC LIBRARIES?

Increasingly, KM is gaining popularity in academic libraries since academic librarians are closely involved in teaching and leaning activities by serving academic staff and students. Due to the ever-changing technological advent, academic librarians are constantly challenged to serve their customers' knowledge needs time and cost effectively. Academia and students are not fully dependent on library resources, because global net has provided several venues to satisfy their information and knowledge needs, hence, academic librarians need to think seriously to ride on the KM band wagon to retain their existing customers and attract new ones.

Academia and academic librarians both can compliment each other. Academia needs KM and could give us an opportunity to see ourselves not just service-oriented, but mostly "value-oriented" (White 2004). Librarians can liaise with their academic partners and other customers to select appropriate information resources and organise them in most accessible way to make them readily available when required. These information resources are instruments to satisfy customer knowledge craving. For example, "Knowledge creators do not have much time and energy to look for knowledge users" (Shanhong, 2000). Librarians can use their creativity and multiplicities to publicize new knowledge created by knowledge inventors and disseminate and share it worldwide. This partnership of librarians and academia will transform librarians' status from service oriented to value-oriented.

FUTURE OF ACADEMIC LIBRARIANS & CHALLENGES OF KM

Today librarians and information professionals are in a position to transform themselves into value-adding knowledge professionals different from service oriented traditional librarians. This will require a radical change in how they view their roles and jobs within knowledge-based library organizations. They need to visualize a world of rapid change, instantaneous communications, and the transformation of organizations from those based on identifiable boundaries to networks of business

relationships, limited to books and journals (Chase,1998). The main challenges of KM, therefore, include the following:

- Intellectual capital to manipulate tacit knowledge
- Culture of sharing and creating of knowledge
- Improved and wider knowledge accessibility cost effectively and time effectively
- Knowledge navigation, understanding of the repositories of knowledge within the organization
- Technological expertise for IT to be utilised to its fullest potential
- Knowledge analysis to provide a link between the customer and the knowledge
- Knowledge editing to refine and re-package explicit knowledge for an easy access
- Knowledge gate keeping by possession of subject expertise
- Digitising of libraries' resources
- Managing of KM as an asset
- Updating of knowledge regularly
- Time management
- Proactive attitude and confidentiality.

At this juncture, we would like to introduce Cathie Katherine Koina's (2003), check list for an effective KM manager in order to assess our skills what we have and what we should have.

Table 2: Skills for an effective knowledge manager

KM skills librarians may currently have	Attributes librarians may not necessarily have
Flexibility	Lateral thinking
Team skills	The ability to think in terms of the enterprise rather than the professional function
People skills	The power to persuade, to 'sell' themselves and their skills in an organisational context
Communication skills	The capacity to manage, rather than merely endure, change
The ability to assess and evaluate information	Advocacy
How to create, record and store information effectively	Strategic planning ability
How to use information tools effectively	Marketing capacity
How to train and educate the client	Able to analyse their roles and identify areas for improvement
Client service oriented	Project management capacity

If this matrix is even approximately valid, there are a number of significant skills that librarians currently don't have. Perhaps this is why people are not routinely appointing us as knowledge managers (koina, 2003).

A WAY FORWARD

Librarians and information professionals have excellent skills in organising and codifying information sources and making them accessible to others. To fully integrate KM into the organisation:

- Libraries should be well-equipped with all the modern technologies;
- Rational design of the libraries' structure and the re-building of a new type of library culture should occur;
- Libraries should have knowledge management policies and knowledge management strategic plans;
- Librarians should be well-trained to revitalise the library undertakings;
- Librarians should be well-prepared to face all of the above-mentioned KM challenges;
- Librarians should be proactive and confident in their abilities and competencies.

CONCLUSION

We conclude that KM could be seen as an extension of the discipline within which information and library science reside. At present it is IM, not KM, in academic libraries in Africa. KM has provided librarians and information professionals with new opportunities and challenges to face if they want to benefit from it. Librarians have to come out from their conventional cosset and work closely with technologists and customers in order to tailor their knowledge according to customers' needs.

REFERENCES

Bouthiller, F. and Shearer, K. (2002), "Understanding knowledge management and information management: the need for an empirical perspective". *Information Research*, 8 (1), Retrieved May 26, 2005, from http://informationr.net/ir/8-1/paper141.html

Branin, J. J. (2003), "Director of Libraries: the Ohio State University". Retrieved November 20, 2005, from

https://kb.osu.edu/dspace/bitstream/1811/187/1/KBJAL.pdf 20.11.05

Broadbent, M. (1998), "The phenomenon of Knowledge Management: What does it mean to the Information Profession?" Retrieved May 11, 2005, from http://www.sla.org/pubs/serial/io/1998/may98/broadben.html

Chase, R.L. (1998), "Knowledge navigators". Retrieved May 8, 2005, from http://www.sla.org/pubs/serial/io/1998/sep98/chase1.html

Charles T. (2001*)*, "Knowledge Management and Academic Libraries", *College & Research Libraries*, 62 (1), 44-55.

Corral, S (1999), "Knowledge Management: Are we in the Knowledge Management Business?" Retrieved May 6, 2005, from http://www.ariadne.ac.uk/issue18/knowledge-mgt/

Foo, S., Chaudhry, A.S., Majid, S.M. and Logan, E. (2002), "Academic Libraries In Transition: Challenges Ahead". *Proceedings of the World Library Summit, Keynote address: Academic Library Seminar*, National Library Board, Singapore. Retrieved November 19, 2005, from http://islab.sas.ntu.edu.sg:8000/user/schubert/publications/2002/02wls_fmt.pdf

Grey, D. (1998), "Knowledge Management and Information Management: The Differences". Retrieved May 26, 2005, from http://www.smithweaversmith.com/km-im.htm

Koina, C. (2003), "Librarians are the ultimate knowledge managers". *Australian Library Journal*, 52 (3), Retrieved 26, 2005, from http://alia.org.au/publishing/alj/52.3/full.text/koina.html

Lang, J.C. (2001), "Managerial concerns in knowledge management". *Journal of Management*, 5 (1), 43-57.

Leonard, D & Sensiper, S. (1998), "The role of tacit knowledge in group innovation". *California Management Review*, 40 (3), 112-32

Maponya, P.M. (2004), "Knowledge management practices in academic libraries: a case study of the University of Natal, Pietermaritzburg Libraries". *SCECSAL Proceedings*

Murty, K.S. "Role of HR in Institutionalizing Knowledge Management in a Company". Retrieved November 11, 2005, from http://www.kwork.org/White%20Papers/papers.html

Meadow, C. T., Boyce, B.R. and Kraft, D.H. (2000), *Text information retrieval systems*, 2nd ed. San Diego, CA: Academic Press.

Nonaka, I. and Takeuchi, H. (1995), *The knowledge creating company: how Japanese companies create the dynamics of innovation*. New York: Oxford University Press.

O'Brien A.J. (1993), *Management Information Systems: A Managerial End User Perspective.* 2nd ed. Burr Ridge: Irwin.

Pantry, S and Griffiths, P. (2003), "Librarians or Knowledge Managers? What's in a Name, or is there a Real Difference?" *Business Information Review*, 20 (2), 102-109.

Polanyi, M (1962), *Personal Knowledge: Towards a Post-Critical Philosophy*, Chicago: University of Chicago Press

QUEST FOR KNOWLEDGE AND KNOWLEDGE MANAGEMENT IN RURAL SOCIETIES IN AFRICA

J.R. Ikoja-Odongo

Abstract

To survive in a knowledge society, people ultimately engender a knowledge culture by grappling with Information, Knowledge and Knowledge Management; develop expertise, tools and resources in handling their knowledge. Curiously, at a time of talk of the global village, research trends show that Knowledge Management is limited to modern corporate institutions mostly located in urban areas and extensively in developed countries. This situation begs the questions: Is there no Knowledge Management in rural communities in Africa? If so how can this exclusion be solved? This paper, conceptual in nature, explores the nature of knowledge in rural communities of Africa; identifies knowledge management practices, expertise, tools and resources rural communities in sub Saharan Africa use and makes proposals for Africa to better manage its knowledge resources to become competitive. Implications for knowledge management professionals are stated.

INTRODUCTION

The world, our world is a knowledge laboratory. It is a place in the universe where we find human species '*homo sapiens'* who over millions of years have learnt ways of generating, storing and using knowledge. The human species, unlike other creatures that rely on their instinctual impulses for survival, are endowed with superior brains that set them apart as rational beings. Knowledge is their artificial creation, a social construct and perhaps the most versatile and valuable social asset. Knowledge is a pool of human experience, which can only be known through communicating and applying it in whatever form. Human beings use knowledge as vehicle for managing issues in their lives and institutions they create. The quantity and purpose of knowledge available to them is dictated by the objectives and circumstances existing in particular environments but otherwise knowledge is available in all spheres of life and is infinite. In the developed world knowledge is flagged as a tradable resource used and reused to gain economic and business success. In developing countries knowledge is

applied to cultural and social advantage. How knowledge, as an intangible resource is managed, differs from one firm, institution and from country to country and even from continent to continent. This paper is about the quest for knowledge and knowledge management in Africa.

AIM

This paper will answer the following questions: Is there no knowledge management in rural communities of Africa? If so how can this exclusion be solved? By answering these questions, the paper attempts to create some understanding that whereas Knowledge and Knowledge Management (KM) are essentially an economic affair in the companies, firms and institutions of the developed countries, in Africa and at her level of development she has knowledge and knowledge management is practiced in different context and that is for cultural and social advantages.

LITERATURE REVIEW

Three main concepts namely knowledge, knowledge management and Africa are discussed here to put them in the context of the paper. Each of the concepts is defined or explained according to statements made by different authorities. Only a sample of them is given to elucidate the meaning and purpose of each concept.

Knowledge

Knowledge has a natural coherence with everyday experience. What knowledge is, involves the cumulative understanding of human kind, an "everything that can be known" that according to Calantone & Hawkins (1999) is an attribute of a person, and is the ability of that person to take effective decisions. Knowledge is a fluid mix of framed experience, values, contextual information, expert insight and grounded intuition that provides an environment and framework for evaluating and incorporating new experiences and information. It originates from and is applied in the mind of knower. In organizations, knowledge is embedded in documents or repositories and also in organizational routines, processes, practices and norms (Tiwana, 2002). Therefore Knowledge is defined as what we know

and this knowledge involves the mental processes of comprehension, understanding and learning that go on in the mind and only in the mind, however much they involve interaction with the world outside the mind, and interaction with others (Wilson, 2002). It is a vital determinant of competitiveness and growth in institutions, firms, and countries (Abu-Rashed *et al* 2005) and is one of the productive resources and for that, the prime resource that has become the first asset among the factors of production (Nonaka and Takeuchi, 1995; Davenport and Prusak, 1998). Knowledge is conceptualized as tacit and as explicit knowledge. It is therefore valued here that knowledge is a resource people use for their benefit and this knowledge is available in tacit form and can be made explicit as documented experiences from records people create.

Knowledge management

Precisely what KM is about means makes a continuous debate. First, it is a relatively new concept (Jacobs, 2004). Secondly, the domain is widely distributed across fields of practice (Wilson, 2002) such as computing and information systems, Information science, Information management and librarianship, medicine, management, Artificial Intelligence etc such that one uniform definition is unlikely. Thirdly, KM is also attracting increasing research attention and most especially since 1997 when the growth has been exponential. Fourthly, there is some uneasiness about the meaning of the concept where in most cases it is equated with 'information management'. In some cases KM is a misleading concept as argued by Sveiby in Wilson (2002) while Nonaka also quoted by Wilson prefers to use other concepts such 'Knowledge Focus' or 'Knowledge Creation' to make it better understood. KM is said to be something between two ears and only two ears as Drucker in Wilson (2002) says and the debate continues. But in all KM is a practitioner-based, substantive response to real social and economic trends.

At the very basic level KM's main ingredient is knowledge and there are hundreds of definitions and explanations of what KM is about but a few are offered here. According to Bill Gates (1999) KM is a fancy term for a simple idea. It is about managing of data, documents, and peoples efforts. Its aim is to enhance the way people work together, share ideas, sometimes

wrangle, and build on one another's ideas and then act in concert for a common purpose. According to him KM is not a software product or a software category. KM does not even start with technology. It starts with business objectives and processes and recognition of the need to share information. It is nothing more than managing information flows, getting the right information to the people who need it so they can act on it quickly. As a general concept he reasons that KM is about gathering and organizing information, disseminating the information to the people who need it, and constantly refining the information through analysis and collaboration.

However, KM can be defined as a process of knowledge creation, validation, presentation, distribution and application of knowledge (Bhatt, 2001). It is the management of organizational knowledge for creating business value and generating a comparative advantage (Tiwana, 2002). Kidwell *et al,* (2000) describe it as the process of transforming information and intellectual assets into enduring value while Gupta *et al* (2001) consider that it to be the process that helps organizations find, select, organize, disseminate, and transfer information and expertise necessary for activities such as problem solving, dynamic learning, strategic planning and decision-making.

Therefore KM is an organized effort to espouse, develop, and support a programme of change to create and operate a knowledge environment within the organization. A knowledge environment in this context is an organization, business or government, environment that enhances the organization's ability to deliver on its mission – e.g. competitive advantage (Al Banna, 2000). It is a discipline that promotes an integrated approach to identifying, managing and sharing of an organization's knowledge assets including unarticulated expertise and experience resident in individuals. It encompasses identifying and mapping intellectual assets within the organization, generating new knowledge for competitive advantage within the organization, making vast amounts of corporate information accessible, sharing the best practices, and technology that enables all the above -- including groupware and intranets (Barclay and Murray, 1997). KM principles therefore recognize that it is important that organizations "know

what they know" because all organizations inherently store, access, and deliver knowledge in some manner.

The synthesis of these expositions is that KM is about people and their knowledge, expertise or intellectual capital, infrastructure such as technology as a facilitator, and communication in business environment such as ear-to-ear or computer-to-computer via e-mail. Succeeding in its management means harnessing organizational resources or assets to achieve the best and remain the best.

Africa the Continent

Africa is a well-known landmass constituting the second largest continent in the world (The World Book Encyclopedia, 1994). She has a population of about 850 million people. She occupies a land mass space of 30,300,000 sq. km. It is a biographic sub region of the world divided into 53 countries that comprise, mainly black Africans who speak more than 800 languages and dialects (African Global Competitiveness Initiative, 2005). Despite its great area, Africa is a relatively simple landmass surpassed by many schemes of development.

Much of what is known about Africa reflects indicators of a troubled continent. Despite having rich natural resources, poverty, high indebtedness, hunger, disease, wars, fragile economies, poor human resource capacity known by sharp shortages of skilled professionals are indicators for which the continent is known. Other indicators include low levels of enrolment in schools and low literacy levels. Africa is also weak in technology density. She has few information and knowledge support facilities. After nearly four decades of independence, Africa continues to fall behind due to corruption and ineffective planning of their economies. Limited development is taking place in respect of integrated information and knowledge management unlike it is in the developed world. Apparently far less appreciated has been the necessity for a systematic exploitation, on a national basis, of information and knowledge resources. Increasing dependence on foreign and international organizations for conducting research, investment and planning are a common phenomenon among our nations. Africa is a continent of rural communities.

Briefly thus, the status of Africa on the world development scene is remarkably well known. Africa is the continent that lags behind among all other major continents. The low level of development is evident in all sectors ranging from infrastructure, business, and social services to governance (Olomi, 1999). Africa's low economic performance is not associated with inadequacy of natural resources because these are abundant and less exploited but because of poor organization and direction of human and other resources. To be effective, it is argued, economic development endeavors must be geared towards improving the organization and direction of African resources. It is these resources that will deliver Africa out of the state in which it is today.

Knowledge Management in Developed Societies

As a basis for understanding KM in Africa, it is essential to discuss how this knowledge is managed in developed countries. It is also important to understand that KM practices differ from one firm or organization to another and from country to another. Therefore only a general picture is presented.

In the developed countries, knowledge is generated within the international systems such as universities, research institutes and private firms such as Imperial Chemical Industries (ICI), Microsoft or Toyota that produce world-class products. This is knowledge of universal significance and not bound to contexts. In such countries KM is placed in three categories. The most commonly used of them is the technology-centred approach that focuses on installing and using intranet webs, Lotus Notes and other knowledge-oriented software with the influence stemming from the notion of 'knowledge bases' in the expert systems field (Wilson, 2002). The second focuses on organizational learning largely by addressing cultural and behavioral issues. And the third is where a company builds its quality through re-engineering efforts (Johannsen, 2000) making a combined use of the first two approaches.

To support knowledge management at least four components are vital, namely the availability of knowledge systems, networks, knowledge workers, and learning organizations. Then there must be commitment to:

creating new (task related) knowledge, disseminating it (sharing) throughout the organization and embodying it in the products, services and systems (Nonaka as quoted by Johannsen, 2000). This underscores one of the principal aims of KM that it must ensure transformation of knowledge from the tacit (in the head) to explicit (out of the head as physical object like a book) and from individual to collective or social knowledge (Johannes, 2000). The following example provides a good example of the way KM is managed.

Skyrme and Amidon (1997) investigated the state of knowledge management in various companies around the world. Their findings reveal that nearly 90 per cent of senior managers believed that their organizations were in a knowledge-intensive business, whatever their industry. The study identified common activities in knowledge management initiatives: that is, creation of knowledge teams - people from all disciplines to develop the methods of knowledge management; sharing of best practices - from one part of the organization to another, through databases, but also through personal interaction and sharing events; development of knowledge databases - best practices, expert directories, market intelligence etc.; creation of knowledge centres - focal points for the development of knowledge skills, managing and enhancing knowledge databases and facilitating knowledge flow; collaborative technologies - the use of Intranets (internal Internet) or groupware for rapid information access, intellectual capital teams - to identify and audit knowledge. Briefly this means that KM in developed countries is about getting the right knowledge at the right place, at the right time. This done, the benefits would be better customer service, improved new products coming to market more quickly, business processes continually improving, and innovative new ideas brought to commercialization.

To attain these benefits firms or organizations invest in the development of human resources, and Information and Communication Technologies (ICTs) infrastructures, including Internet and are using them to transform the way people work with knowledge in their firms. Developed countries know that knowledge is critical for development, because everything they do depends on knowledge. They are transforming the resources they have into the things they need, and that takes knowledge (World Bank, 1999).

The developed countries are doing even more. They have in place additional enablers. The culture of transparency that encourages the spirit of sharing knowledge among those involved has been nurtured; political will that encourages positive policies and maintains a conducive environment to allow people share and use knowledge are known across society; enhanced educational institutions to produce skilled knowledge management workers who understand, and are motivated to design strategies and apply this knowledge and technology to attain increasing levels of production are in place and continue to improve or expand. The right of everyone to know has become solidly entrenched and accepted as one of the norms of social interaction (Kazini, 2005). It proceeds therefore that a society realizing the benefits of using knowledge, is an information society. This is a society where most persons are employed in knowledge-based activities. That is what firms, organizations of developed countries have been able to achieve and continue to build on. Could these standards be applied to the African context as well or does Africa provide a scenario that would require another way of dealing with its knowledge and knowledge management practices? These are some of the mind searching questions this paper tries to answer.

ISSUES IN KNOWLEDGE MANAGEMENT IN AFRICA

Before tackling knowledge and Knowledge Management in Africa, it is necessary that I raise issues that impact on its management. The argument is that without knowing them, it is likely that we may misrepresent why knowledge is managed the way it is done in Africa. Managing knowledge like it is done in the developed countries requires certain enablers. For instance, one of the significant inputs to KM is good education and high literacy levels. How does Africa fair on this? Enrolment in schools in Africa is among the lowest in the world. Africa is also known for its low literacy levels. Uganda is for instance 32 percent illiterate, and Mozambique, 30 per cent (Africa Education Initiative, 2005). This undermines content creation and use of knowledge. Even the people capable of using IT are few and restricted to few institutions. The point is that education is the key to creating, adapting and spreading knowledge. Basic education increases people's capacity to learn and integrate information (World Bank, 1999).

Another great facilitator in KM is Information Technology (IT). This is equally inadequate in Africa. Though not a sufficient condition for KM, it is a necessary condition for it (Arora, 2002). IT makes it easier and faster to catalogue and convey this knowledge. Constraints associated with ICT are: high cost of access to telecommunications, Government policy towards ICT, underutilization of existing technologies, limited indigenous base; digital illiteracy (Mutula, 2004). Jain also quoted by van Wyk (2004) identifies a few more as: a lack of skilled and trained manpower; inadequate IT exposure in schools; lack of national IT policy; poor communication infrastructure; ignorance of IT benefits; expensive ICT equipments and resistance to change. Additionally the continent suffers from various shortages such as PCs, partial Internet access, and inadequate telephone lines etc. This situation is exacerbated by high costs of access, inappropriate or weak policy regimes, and lack of locally created content (Acacia, 2004). Low bandwidth and high dial-up tariffs levied on Internet users, inability to sustain IT equipment confound the situation. The IT use is made even more difficult due to utility infrastructures. The electricity needed for supporting any digital technology is largely deficient in Africa (Bakuli in Mutula, 2004).

Against that background, there is no doubt that Africa which "owns" a great deal, both in terms of natural resources, as well as human resources, paradoxically finds itself languishing in an almost inexplicable state of poverty and underdevelopment. The greatest threat facing Africa according to Al Banna (2000) are neither technology, lack of capital, illiteracy, nor threats of diseases – thought all of these are serious threats, but existing social impediments to the rapid creation of new knowledge, the rapid diffusion of innovations, and the recycling of new knowledge. Another threat seems to be a belief system – its culture – that is more focused on identifying and fending off threats, perceived or actual, from inside or outside, than enabling local, social mechanisms of change to flourish and lead the change process (van Wyk, 2004). Therefore if Africa is to log in to knowledge management circuit, those are the issues to be addressed because they are the very issues stalling her knowledge management development.

Under those conditions, one would be tempted to say that KM in Africa is impossible or if not impractical. But this is not so. Managing knowledge in Africa has been and still is possible. Africa has knowledge and a lot of it and knowledge management is practiced in African societies. The way that knowledge is managed and what this knowledge is managed for is what make the difference. Africa can continue to manage its knowledge the way it is and remain stagnant but to move the continent out of the state of underdevelopment she is in require a new approach towards business knowledge management. This is how the exclusion gap will close.

KNOWLEDGE AND KNOWLEDGE MANAGEMENT IN AFRICAN SOCIETIES

In terms of knowledge and KM, Africa has specific status. Though it has knowledge, the focus for which this knowledge is used is different. For most of Africa, the widely available knowledge is the indigenous knowledge (IK). This knowledge is context related. Different people have different types of IK. There are those who are skilled in traditional medicine (TM). There are those who know how to set bones. There are artisans, potters, hunters, and there are custodians of culture and so on. IK is therefore a social product restricted to cultural and environmental contexts and shared through social networks. The other type of knowledge available in Africa is formal knowledge. Formal knowledge is limited and centred mainly in universities, research centres and industries.

Africa uses its IK mainly for social advantage and not for a competitive, and comparative advantage. It is survival knowledge amidst the untapped plenty. Therefore the quest for knowledge and Knowledge Management in Africa should not be looked at in the space of the already existing IK but something beyond. It must be knowledge that will liberate Africa from its problems. Africa's knowledge is used as a basis for local decision-making pertaining food security, human and animal health, education, natural resource management, and other vital activities (van Wyk, 2004). This gears up to the point that Africa provides a scenario that requires another way of dealing with its knowledge and knowledge management practices.

AFRICA'S KNOWLEDGE: TACIT OR EXPLICIT KNOWLEDGE?

Much of Africa's knowledge lies with the illiterate and semi illiterate though experienced people, which is the opposite of developed countries where executives are knowledge managers. Except perhaps for South Africa or Arab north, Africa is still at the stage of pre capitalist stage of development. This makes Africa a long way away. African knowledge is tacit mostly but one that becomes explicit from activities people do within their localities. Little is written and a lot of it is discriminated against by the educated as a sector of primitivity. It is exchanged ear to ear. This form of knowledge is mostly shared orally, and practically. It is less development-oriented kind of knowledge. And it is estimated that Africans have knowledge on anything that attracts their attention but when defeated, they resort to speculation or metaphysics. This is the problem that has to be tackled and Knowledge redefined for Africa.

Africans practice KM in many ways. They for example, study winds directions, cloud formation and mist presence to determine weather changes without weather equipment. African people can tell seasons without the aid of technology. Specific indicators help them in determining the onset of say the rainy season such as flowing of plants, movement of bees. Africans know how to preserve foods using different traditional methods. Africa takes advantage of abundant supply of solar energy to preserve their food and other activities. They know what indigenous plants to eat and those not to eat. They know plants to harvest for people and animal treatment as herbal remedies. African pharmacy is their bush. Customs play a big role in knowledge management because it is from them that knowledge is stringed from generation to the next. Age sets are significant in this regard. Science and Technology are available in Africa though rudimentary and exists in the form of manufacturing systems like iron smelting in traditional furnaces to make tools by casting iron. African artisans for example make salt from its salty water such as they do in Uganda's Lake Albert by process of vaporization and digging salt slabs from the lake floor. They also know how to make salt from plants and use its distillate (*Abalang* in Ateso, *munyo kisula* in Luganda, Uganda indigenous languages) for cooking food. Africans have knowledge about trapping insects, birds, animals and fishing. African technology is

indigenous and limited to the needs of its people and it is affordable and largely not patented. Africa's productive resources are its people, the land, the forests, water bodies, wildlife, and its air resources.

AFRICA'S TOOLS AND EXPERTISE FOR KNOWLEDGE MANAGEMENT

African people use specific tools and expertise for knowledge management throughout the continent. Most important of them all are the peoples' heads that act as conservatory of knowledge. The shortcoming of this tool however is that "an old person dying is like an entire library burning. Unfortunately no one can prevent old people from dying, but one can produce books so that knowledge does not die with them." (Mba, n.d). This is the danger with this knowledge although it is very important. But because most of it is tacit and the most knowledgeable people are the elderly who die irreplaceably, it is difficult to retain it the same way for long. Therefore KM becomes extremely difficult. It is perhaps the reason developed countries developed ways to make that knowledge explicit.

Other ways are customs in which totems, norms and mores play a significant role. Totems can either be animals, birds or other natural objects that are chosen and respected as a symbol of tribe or family. It is through totems that people personalize the spiritual world and humanity becomes immortal.

African peoples use story telling as a means of sharing information. Other ways are group activities such as ceremonies (marriage, birth, burial, festive seasons), fables, riddles, proverbs, parables, poetry, folklore, music, dance and drama to educate themselves and disseminate and thread knowledge among different age groups and chaining their knowledge and practices from generation to the next.

Gathering under a huge tree in a village on appointed days is a moment for (networking facility) information, knowledge and knowledge sharing. Compound hearth (fire place) is a family meeting spot during evening times for knowledge sharing, education and knowledge exchange. Communal watering spots (wells and swamps) are centres where female

folk and pastoral herders meet and exchange among others things, knowledge. Market places are institutions for knowledge access. Hunting episodes are moments for information and knowledge sharing just to mention a few. In all these, persons with knowledge and wide experience keep passing knowledge about the best practices of a trade to others and the chain continues.

All this knowledge and practices are useful for Africa but cannot save Africa out of her problems of the present times such as poverty, disease and ignorance. A new approach to knowledge and knowledge management is needed. Africans must learn to select and use knowledge that can improve themselves. This is what the countries in the vanguard of the world economy have done and are doing. They were once like us centuries ago but have shifted the balance between natural resources to knowledge resources and knowledge has become the most important factor determining the standard of living much more than land, than tools, than labour (World Bank, 1999).

CONCLUSION

Knowledge management in Africa requires that there is need to revisit her knowledge management thinking and practices. Africa also needs to develop facilities of KM such as have an educated and skilled workforce, continuous education, ICTs, reassuring political environment, and cultures towards hard work and positive attitudes to sharing as a way forward. African knowledge base is still limited, largely oral and little has been codified. African knowledge is vital for African communities and the world at large but she needs to shift to making this knowledge profitable without losing cultural aspects. Africa has natural resources to enable her come up. Africa needs to reorganize. By assuming responsibility for change on the continent, Africa will become a competitive continent. She needs a package of initiatives to get into the mainstream of knowledge management. Information professionals, researchers, and company-based practitioners should develop ideas to that end. Improving African competitiveness will require placing the continent to African Knowledge Development Agenda and no body else will start this except Africans themselves. “Nations and individuals who are without knowledge are

certainly going to find themselves subjugated under those nations and individuals who, though not owning, do know" Mazrui in Kazini (2005).

QUEST FOR KNOWLEDGE MANAGEMENT IN AFRICA: PROPOSALS

Faced with a widening knowledge gap, social and economic gaps, Africa urgently needs careful and purposeful management of knowledge resources to create real opportunities for accelerating [her] pace of development, and possibly closing the gaps. Managing knowledge needs profound changes in culture and behaviors because managing change is not only critical to knowledge management but it also enables the leveraging of the opportunities provided by e-transformations (Al Banna, 2000).

Approaching development from a knowledge perspective – that is, adopting policies to increase both types of knowledge, know-how and knowledge about attributes – can improve people's lives in myriad ways besides higher incomes. For example better knowledge about nutrition can mean better health, even for those with little to spend on food. Knowledge about how to prevent the transmission of AIDS can save millions from debilitating illness and premature death. And micro credit programs can make it possible for poor people to invest in a better future for themselves and their children. In short, knowledge gives people greater control over their destinies (World Bank, 1999).

To this end**,** getting Africa to a level of competitiveness and have comparative advantage in some aspects requires deliberate steps towards African Knowledge Development Initiative. Commitment to African development must start from Africa itself. To fast track Africa, many things need to be re-examined. Africans need to rethink the role of knowledge they are using in their lives and seek ways to make that knowledge profit oriented. We cannot win overnight. The journey is long but every step forwards is a safe distance away from the bad. It takes time but a beginning must be made. Hard decision must come from some quarters. Some ideas are presented below.

Leadership. African leaders must learn to lead their people properly. Environment for development thrives best when a country is peaceful to develop democratic institutions that are relevant to development. African countries must develop national ethos to enable citizens' respond collectively to development issues. Involvement of citizens in national affairs without discrimination creates room for positive attitudinal changes and national values. African countries should work towards creating enabling environment so that people have time to think positively, critically and creatively and remain focused. A lot of time is wasted in Africa discussing non-issues or issues that are discordant to development like gossiping about individuals in politics or entertainment.

Education. Countries must invest in education. There must be deliberate efforts to widen opportunities for universal primary and secondary education, and creating and sustaining opportunities for lifelong learning as a means to rid the countries of illiteracy. Governments must invest in tertiary education and put emphasis on science, technical education, management and engineering all of which are so crucial in development. This increases routes for a*bsorbing knowledge* and creates foundations for development. It builds up the labour force that can keep up with a constant stream of ideas of technological advances. It also enhances people's capacities to harness knowledge. Governments would do this through deliberate policy framework in areas such as sponsorship, creating and increasing opportunities for technical institutions to grow, committing most resources to equipment and human resources training. The aim of this all is to develop capacity capable of participating in development initiatives such as ICT use and management so essential in knowledge management.

Research. To build African knowledge base, research is essential. Africa must first take into account its indigenous knowledge. IK is Africa's first knowledge that should form the platform for other knowledge to be built up on. This knowledge must be captured before she moves to promote local or adaptive research and encourage the adoption of modern technologies. Local research must focus first on more essential needs of the people. Strategic institutions of research should either be established or existing ones strengthened, and adequately supported with enabling legislation to develop research capacities in different knowledge areas that countries

have high potential to compete locally and internationally. Africans are not allergic to development but must be stimulated to it to grow. For example why is it that Africans are farmers of coffee but the price of this commodity is decided outside the producers land or country? Making coffee final product within the country would create competitiveness of a country in a particular crop. For this we need engineers, food scientists, food technologists, accountants, IT specialists, and other information professionals etc. This is where ideas of African Renaissance fit in.

Technological capacity. Once education especially tertiary education is aligned to science and engineering and management, African governments must build own capacity. Governments of Africa should take an opportunity to recognize and support artisans to upgrade their technologies and provide them with recognition through a mechanism of local patents and standards all of which are designed to provide innovators an opportunity to grow. This is where the developed west defeats us. The west provides Intellectual Property Rights (IPRs) to protect all their innovations and we have no chance of exploiting them to our advantage. In Africa the subject of standards and IPRs is inadequately understood. We take innovations for granted and others exploit that weakness.

Africa should be prepared to put in legislations that help her to protect her creations or innovations. For example African countries should deeply engage World Intellectual Property Organization (WIPO) to increase its involvement in the IPRs legislations such as the development of *sui generis* for developing countries so that these too can accommodate frameworks that are flexible enough to allow exemptions such as the protections of cultural effects, symbols, music, designs, motifs and marks like China has done (Xu, 2002). Latin America and the Caribbean have for instance actively promoted the increasing involvement of the WIPO in the development of a *sui generis* regime for traditional knowledge. Costa Rica's Biodiversity Law of 1998 in section 82 protects *sui generis* community rights (Correa, 2002). African governments should develop proposals and pass legislation for the protection of inventions that cannot be protected under the current international patent regime but unique to their own countries. The arrangement should be such that a two-tier patent

system is presented, one that follows international regime and a local one that recognizes lower level innovations.

Knowledge Documentation and Exploitation. Africa especially the tropical Africa, has a vast landmass of forest containing thousands of very useful species of medicinal plants, and insects (bees) from which to obtain herbal remedies. Africa could have a big market and comparative advantage in the world in this area if her medicinal plants had been coded and conserved and exploited as prime raw materials for the pharmaceutical industries of the west or in their own countries. African countries should enact national laws about the protection of these resources especially the plants. At continental level governments through the African Union, should make regional treaties prohibiting untrammeled exploitation of pharmacological and other genetic resources than it happens at present. These plants represent a national heritage resource that must be protected, promoted, developed and, where appropriate conserved for future generations. Africa should not look at traditional medicine (TM) as backward or primitive knowledge or something difficult to do. Determination is essential. African peoples need to change their mindsets and regain their honour about Africa and its creations. We can learn lessons from other countries like India, that have taken steps to protect her medicinal resources and have codified their knowledge and gone ahead to create databases for it. This is to avoid bio-piracy. Development and strengthening of academic and research institutions for this purpose is the right direction. Besides documentation, institutions dealing with medicinal plants should move a step further to provide values why each plant is useful and what it would cost to reach an economic level to prove their value.

Language. A disturbing factor in development is language. Africa is home to more than 800 languages most of which have less than 100,000 native speakers. Presently the world is using mostly English language for most information and knowledge on the Internet. Africa has very little of its own knowledge there and yet it has a lot to give the world. It is a proposal here that protecting and sustaining African languages through writing and publishing and getting information and knowledge on the Internet using her languages would create a scenario that the west would require co-operation

especially in things they would need in Africa and written in local languages. Africans would prepare their local content texts in their languages and ask for a payment for information to be translated. After all not all information and knowledge is free on the Internet. Prime knowledge is encrypted and can only be accessed upon payment. So far Africa generates only 0.4 percent of global content (Chisenga, 2002)

Knowledge Sharing. The idea that knowledge for development should be shared is obviously old and most important but the transfer of knowledge is inherently difficult. There are many roadblocks to it especially laws, languages and infrastructure that facilitate trans border information and knowledge flows. But Africa cannot develop alone without using other nations knowledge. Isolation makes things even worse. I believe Africa should push for fairer Access to Knowledge (A2K) held by developed and other developing countries. Africa needs access to a lot of knowledge. She needs not reinvent the wheel in some instances. Rather than re-create existing knowledge, Africa has the option of acquiring, adopting and in some cases adapting much knowledge already available in the developed countries. African governments should convince the rest of the developed world she has dealings with that she needs their knowledge in defined critical areas. Where specific knowledge is required, it should be transferred under terms supportive to the recipient country. Such knowledge could then be adopted or adapted to suit local conditions. But if it is cheaper to rely on foreign knowledge especially in science and technology then so be it.

OTHER CONCERNS IN KNOWLEDGE MANAGEMENT FOR AFRICA

Proposals have already been made above about what African governments can do to improve knowledge management in the continent. It is additional here that governments concern themselves with taking stock of remaining issues that act as bottlenecks to KM. For instance governments should tackle the issue of inadequacy of infrastructure (electricity distribution, telephone penetration, information institutions) necessary for knowledge management. It is important that African governments strengthen and reform their informatics and telecommunications so as to allow better

access to the Internet, as well as the strengthening of basic data and information gathering capabilities (Denning, 1998). Denning calls upon the international community to support developing countries to make faster progress on coping with the demand of the knowledge era through training, benchmarking, consulting, information and referral services, publications, study tours, research and advocacy. The World Development Report (1999) proposes that we look at development in a new way through adopting policy initiatives to narrow knowledge gaps between and within countries as a matter of moving from worst or average practice to better or best practice. Africa should also consider putting in place policies that foster acquisition and tapping of knowledge from different sources. For this to succeed, Africa needs more technical training in Library and Information Science, training of technical experts, National web servers and conscious government policies and committed efforts to contribute to global information (Chisenga, 2002). Taxation on ICT could for instance be removed or reduced. Technology licensing could be made easy. The countries could move forward if their economies opened up to allow foreign direct investment through favourable policies like liberalization of the economies, technology transfers are some ways to do so (World Development Report, 1999).

KNOWLEDGE MANAGEMENT AND INFORMATION PROFESSIONALS

Finally, there is restlessness among librarians or information professionals in sub Saharan Africa about their failure to serve people. Africa definitely requires a lot of development knowledge but this is not easy to come by in our information institutions. Knowledge in Africa is mostly tacit knowledge. How can African information professionals capture this knowledge? This is the challenge that information professionals must respond to in knowledge and knowledge management in Africa. One way in my view is for information professionals to begin with understanding of the complexities of African societies and through participatory approaches, start programmes of knowledge gathering, codification and conservation. A beginning must be made. The new approach to knowledge management through digitalizing is an appropriate opportunity that African information professionals should invest their thinking and actions in. Digitalization of

existing documents, manuscripts, artifacts, and making them accessible over the information super highway is one of the major ways of contributing to the cultural content of global information (Chisenga, 2002). Institutions need to develop knowledge management electronic databases, and networks. They need to compile directories of African knowledge professionals to share best practices. Information professionals should form national chapters for strengthening African Knowledge Frameworks. To do this the professionals must be guided by vision and overall strategy. Recent formation of Africa Copyright and Access to Information Alliance in Kampala (November 2005) is a good initiative in the right direction

REFERENCES

Abu-Rashed, J. Nancy Bertaux & Adekunle Okunoye (2205). Knowledge management and economic development in developing countries: an examination of the main enablers. *Global Business and Economics Review*, Vol.7, No.1, 85-99.

AlBanna, S. (2000). *Knowledge management and strategies for development in a rapidly changing global environment. Available at:*http://www.worldbank.org/mdf/mdf3/papers/education/AlBanna.pdf. *Accessed 23.11.2005.*

Arora, R. (2002). Implementing KM - a balanced scorecard approach, *Journal of Knowledge Management*. Vol.6, No.3,. 240-249.

Barclay, R.O. & Murray, P.C. (1997). What is knowledge management? In *Knowledge Praxis.* Available in: http: www.media-access.com/whatis.html retrieved 11 Feb.2005.

Bhatt, G.D. (2001). Knowloedge management in organizations:examining the interaction between technologies, techniques, and people *Journal of Knowledge Management, Vo.5, No.1, 58-68.*

Bill Gates with Collins Hemingway (1999). *Business @ the Speed of Thought: Using a digital nervous system*. New York: Warner Books Copyright: Williams H. Gates, III.

Calantone, C. & Dave Hawkins (1999). Uncommon knowledge. Knowledge management. Vo.3, Issue 1 September..6-9.

Chisenga, J. (2002). Global Information Infrastructure and the Question of African Content. In *Libraries in the African Society*. Edited by Tatiana V. Ershova and Yuri E. Hohlov IFLA 102. Muchen: k.G. Saur.

Correa, C.M. (2002). *Protection and promotion of traditional medicine: Implications for public health in developing countries*. Geneva: South Centre.

Davenport, T.H. & Prusak, L. (1998). *Working Knowledge: How Organizations manage what they know*. Boston: Harvard Business School Press.

Denning, S. (1998). *What is knowledge management? A Background paper to the World Development Report 1998*. Available at: http://www.stevedenning.com/knowledge.htm as retrieved on 30 Mar 2005.

Gupta, B., Lakshmi S.I. & Aronson, J.E. (2001). Knowledge management: practices and challenges. Available at: http://www.managementfirst.com/knowledge_management/articles/knowledge.php. Retrieved 16/11/2005.

Jacobs, D. (2004). "Growth and development in knowledge management research: A bibliometric study". In: TJD Bothma & A. Kaniki. 2004. ProLISSA 2004. Proceeding of the 3rd biennial ProLISSA Conference, Pretoria, 28 - 29 October 2004. Pretoria: Infuse, pp. 211 – 220. Also published online: www.dissanet.com

Johannsen, C.G. (2000). Total quality management in a knowledge management perspective. *Journal of documentation* Vol.56, No.1, 42-54.

Kazini, J. (2005). Knowledge has to be redefined for Africa. *The Daily Monitor* Friday December 9 p.12

Kidwell, J.L, Karen, M.V.L. and Sandra, L.J. (2000). Applying corporate knowledge management practices in higher education. *Educause Quarterly* Number 4 p.28-33.

Kim, S. (2000). The roles of knowledge professionals for knowledge management: paper presented at International Federation of Library Associations (IFLA), 65th IFLA Council and General Conference, Bangkok, Thailand, August 20th-28th, 1999. *INSPEL*, 34 (2000) 1:1-8 Mba, (n.d). *Book Treasure*. n.p.

Mutula, S.M. (2004). Bridging the digital divide through E-governance: Implications for Africa. *Towards a Knowledge Society for African Development*. Paper presented at SCECSAL XVI, Kampala 2004.

Nonaka, I. & Takeuchi, H. (1995). *The knowledge creating company: how Japanese companies manage the dynamics of innovation*. Oxford: Oxford University Press

Olomi, D.R. (1999). Scope and role of research on entrepreneurship and small business development. *African Entrepreneurship and Small Business Development* Edited by Lettice Kinunda-Rutashoby and Donath Raphael Olomi. Dar es Salaam: Dar es Salaam University Press.

Skyrme, D.J. & D.M. Amidon (1997). Creating the knowledge-based business. Business Intelligence, London Available at: http://www.skyrme.com/pubs/km report.htm Accessed 12/12/2005.

Tiwana, A. (2002). *The knowledge management toolkit* 2nd ed. Upper Saddle River: Prentice Hall.

The World Bank (1999). Knowledge for development: *World development Report*. New York: Oxford University Press. van Wyk, C (2004).

Indigenous and modern knowledge, *Towards a Knowledge Society for African Development*. Paper presented at SCECSAL XVI, Kampala 2004.

Whitehouse. African Education Initiative: Fact sheet. Available at: www.whitehouse.gov/news/releases 2002/06/20020620-18.htm Accessed 12/12/05.

Whitehouse. African Global Competitiveness Initiative: Fact sheet. Available at: www.whitehouse.gov/news/releases/2005/02/200507196.html Accessed on 12/12/2005

Wilson, T.D. (2002). The nonsense of 'knowledge management'. *Information Research*, Vol. 8 No. 1, October 2002), paper no. 144 Available at http://InformationR.net/ir/8-1/paper144.html . Accessed 21st/12.2005.

The World Book Encyclopedia (1994). Chicago; London: World Book, Inc.

Xu, J. (2002). Linking indigenous knowledge to governance and livelihoods. Annual Report 2002. Centre of Biodiversity and indigenous Knowledge (Online) http://www.cbik.org/cbik-en/cbik. Accessed 23 Aug.2004.

COMMUNITY CENTER GELLERUP: FROM EVERYDAY PRACTICE TO METHOD DEVELOPMENT: A DANISH PUBLIC LIBRARY CASE

Lone Hedelund

Abstract

Gellerup Library is in the process of transforming into a Community Centre based on knowledge management.

Danish public libraries are increasingly adopting a more proactive and outreaching role in developing local communities in co-operation with other local institutions and private organisations and networks. Especially in so-called exposed communities and housing sectors the libraries are striving to become a knowledge resource intended at supporting for instance ethnic minorities in dealing with their specific situation, competence development and integration in the Danish society.

KNOWLEDGE MANAGEMENT AND COMMUNITY CENTRES

The establishment of Community Centre Gellerup is to a great degree based on institutions that know each other through working together on previous occasions. These experiences mean that members of staff as well as citizens are included in the whole process. There will be interview rounds, focus group meetings, stop-a-moment day, and taking part in ad hoc groups consisting of both staff and citizens.

One of the most fundamental democratic principles is the individuals' right to equal and free access to information and knowledge. The idea of enquiring and enlightened citizens being a prerequisite for a well-functioning democracy goes back a long way.

To insure that the free and equal access to knowledge and cultural experience also includes citizens who for various reasons – such as different forms of physical or mental disabilities, mental disorders, social phobias, lack of knowledge-based competences or other restraints – may find it difficult to reach the resources, the libraries must work with

determination to facilitate the access to knowledge both through the design of physical libraries and expedient planning of the knowledge and informational product offered. The libraries have an obligation to be accessible to and assist the informationally weak and socially marginalized citizens alike; to provide them with the ability to make use of their democratic rights and citizenship.

The libraries must present culture which imparts knowledge and experiences. Cultural dissemination improves the users' adaptability, communication skills, ability to participate in social life and it develops both personality and independence.

People have different ways of orientating themselves. Some prefer the audible; others are oriented towards images and films, while others yet are oriented towards texts. By making available a broad spectre of different genres and types of materials, the libraries contribute to the consolidation of cultural diversity and dissemination.

The effects of the libraries' non-fictional media are individual competence development, learning, formal and informal education, personal development and enlightenment.

The social cohesion is considered to be one of the greatest assets of Danish society, but globalization, network economy, changes in methods of production, rapid technological development and the lack of a common set of norms cause our society to in certain ways appear increasingly non-homogeneous and fragmented compared to earlier days. This development in addition to the growing number of Aarhus citizens with a foreign ethnic and cultural background has brought on a pressure on the social cohesion and the traditional shared core values.

The libraries are a natural place for refugees and immigrants to get to know Danish language and culture and at the same time maintain their mother tongue and cultural background through various uses of media and services. Since the core values of the libraries embody free and equal access for everyone, they are seen as a natural retreat by many refugees and immigrants.

COMMUNITY NEEDS

Lifelong learning is a key concept in a world which is undergoing changes at a staggering pace.

It is no longer possible to receive an education and do work based on the same knowledge throughout life. It is vital – and it will be even more so in the future – that each individual on a permanent basis renews his or her knowledge and strengthens his or her innovation skills.

Lifelong learning relates to both the professional and the personal development of the individual. From a social point of view there is need for a high level of education and strong innovation skills when competing with other countries.

A special competence area is the development of reading skills. To be able to read is a core skill for citizens of a knowledge society. It is estimated that up to 500,000 Danish adults (Danish population is appx. 5 mill.) suffer from reading and writing difficulties, which present daily challenges. Research indicates that the functional reading ability has been impaired in the course of recent years.

Furthermore the libraries can serve as focus in a technological process of development and in the mental process of development which results from this. The libraries must be a physical place of experience, where testing and playing with different types of media and forms of learning can take place in a way which supports the citizens' innovation skills and desire for change.

Libraries are, because of their unique position in local communities, ideally placed to provide opportunities for individuals to develop themselves. Self-help is assigned major importance and new forms of citizen involvement and ethnic diversity are a major contribution to new thinking and creativity also for libraries.

Needs are very important. If libraries are to be one of the centres of the community, we must provide offers that are relevant to the local community and which respect the wishes and demands of the citizens.

Therefore Community Centre Gellerup will work in depth with the following:

- Learning and educational environments
- Knowledge management
- Skills
- ICT
- Networking
- Guidance
- Information learning
- Audience development
- Culture

METHODS

Over the past few years no projects have been initiated at Gellerup Library without being based on citizens' inclusion and the use of the empowerment method.

Libraries have an important dual role to play in providing opportunities for empowerment and empowering communities to take up opportunities.

We are therefore working with empowerment on three levels:

1. **Individual citizens and staff members:** having the right to make one's own decisions – to live life according to own wishes
2. **Group:** being able to interact in a group – to create and support social networks

3. **(Local) society level:** stating one's opinion and pleading other peoples' causes – to demand and expect influence and respect.

Another important aspect is that contact with staff as well as with citizens is based on appreciative talks and attitudes – AI (Appreciative Inquiry).

Appreciative Inquiry (AI)

Acknowledge and enhance what is already working well.
Focusing on solutions that already exist.
Focusing on alternative realities, dreams and wishes.

This method is used not only by the library, but is an attitude shared by police, social services, primary and secondary schools and day-care institutions.

Community Centre Gellerup therefore builds on these methods, as do other projects in the local community as well as the cooperation partners.

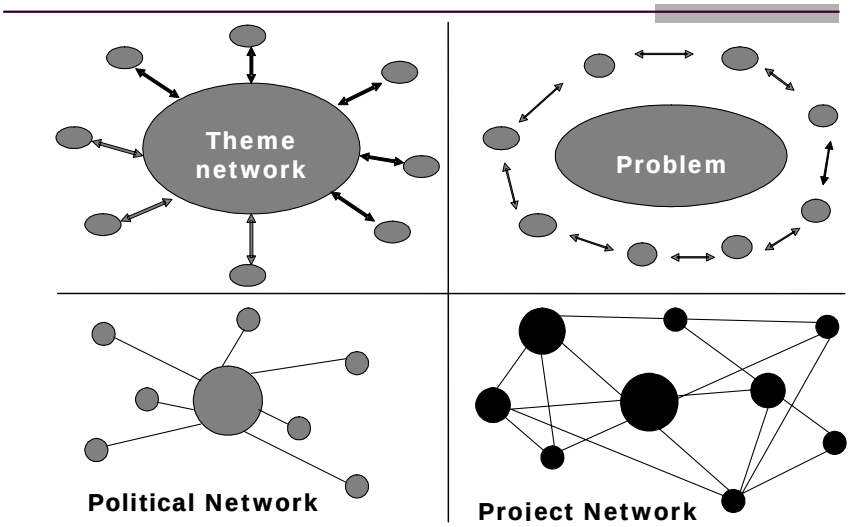
Different types of networking

No Library is an island. It is very important that the Library is a part of a lot of different partnerships. That is essential if libraries are to be relevant to the community. By working in partnerships we can identify particular needs from both citizens and other local authorities and agencies.

In that way we can ensure, that the service, we are offering is responding to the needs of the community.

Working in partnerships means that the Library always will be able to offer a wider, more varied and better service than would be possible working on our own.

Different types of networking



What is Community Centre Gellerup?

The project Community Centre Gellerup started in the spring of 2005. The library in Gellerup is a local library under Århus Public Libraries.

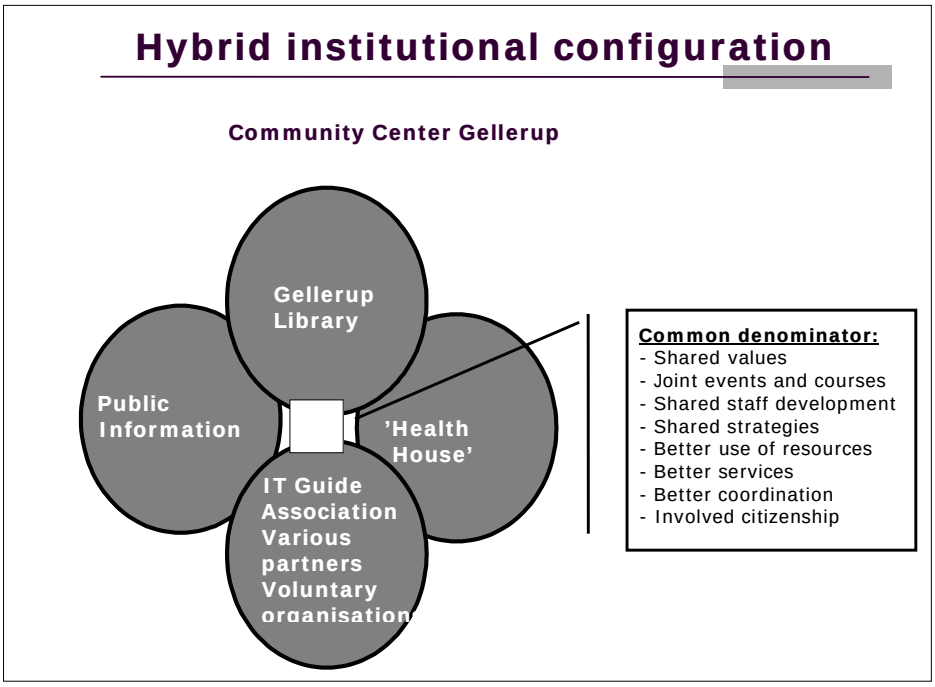
Community Centre Gellerup is to develop and extend the public library's solution of information-related tasks and knowledge management in close cooperation with other institutions that share premises with Gellerup Library.

The parts that cooperate are:

1. Folkeinformation (Public Information), Family centre West, Social and Employment Department.
2. Sundhedshus (a healthcare centre): The Department for Children and Youths, Aarhus County

3. IT Guide Association.
4. Voluntary organisations
5. Aarhus Public Libraries, the branch libraries represented by Gellerup Library

The intention is to develop models for cross-sectorial cooperation, plurality management through dialogue-based work and via cooperation under different managements to exploit the synergy effect in cross-sectorial cooperation. We also have to work on ways of involving volunteers in the daily running of the project and on the development of the public library with pro-active citizen involvement. Finally a strategy has to be prepared for anchorage of the different models.



In the autumn of 2004 the project **'Folkeinformation'** (Public Information) was initiated at Gellerup Library. The aim of the Public Information project is to provide a service to all citizens of the municipality; however it is primarily directed at citizens of foreign descent residing in the urban areas of Hasle, Herredsvang and Gellerup. Anyone experiencing a need for general guidance and information on everyday problems may approach the public information service and receive qualified information without any registration and be referred to the proper 'expert advisors'.

With regard to this project, Family Centre West has applied for and received funds partly from the Ministry of Integration, partly from the EU Urban Programme (In 2002, Århus was chosen to be part of the Urban programme – a programme supported by the EU. This programme runs until mid-2007 and aims to increase the possibility of the citizens in Gellerup-Hasle-Herredsvang economically and socially to help them realise their dreams and hopes for the future. Active participation of the citizens is therefore imperative. See more about the programme at: http://www.aarhuskommune.dk/portal/borger/flygtninge/urban?
Page = urban_english.emne).

The Public Information project has until now received funding sufficient to cover a three and a half year working period; after that it is projected to keep running financed within the general operating budget of the family centres (City Centre and West).

At Gellerup Library, **'Sundhedshuset'**, a Healthcare Centre, was established in the autumn of 2001. It was not intended that the Healthcare Centre should replace the already existing prophylactic and health promotion efforts, but serve as a supplement to the efforts taking place via the house calls of the visiting nurse, the Children and Adolescents-Medical-arrangement and the local dental clinic. The Healthcare Centre is also based on involving resourceful new Danish parents as disseminators and founders of networks in relation to the health work, and it is part of the municipal effort to break the negative social heritage.

Among the activities offered at the Healthcare Centre are 'Open House' at the visiting nurse, the midwife consultation and the prophylactic dental

examinations at the dental hygienist, all of which offer health related individual guidance. Furthermore, it is possible to participate in various group activities, such as sessions on subjects like e.g. nutrition and exercise, prophylactic dental care, children's deceases and accidents, bringing up children and family planning. In addition to this, young mothers are offered antenatal classes and participation in gatherings with other mothers.

The Healthcare Centre has now become permanent according to the 2005 budget conciliation for Århus Municipality.

For Gellerup Library the placing of the Healthcare Centre in the library has been an asset. Partly because many women and their families have become familiarized with and been registered as users of the public library, partly because Gellerup Library, being an open, accessible service for everyone regardless of sex and age, has obtained a force of attraction in relation to partners such as the Public Information Service.

It is a great expectation at Gellerup Library that the establishing of a Public Information Service in the library will cause at least an effect on the daily running of the library similar to the one the Healthcare Centre has caused, but seen from a social point of view it is also very important to work on the development of partnership models for these kinds of cooperations. It is the intention to integrate the information tasks of the Public Information Service and the library in a manner that allows the staff of both institutions to handle parts of each other's tasks. It is furthermore the intention to integrate the running to the greatest possible extent to obtain a synergy effect. Since the Healthcare Centre now is a permanent institution, the information tasks of the Centre will also be incorporated in the overall working model.

The IT Guide Association – http://www.it-guideforeningsn.dk/. The appendix outlines the conclusions of the project IT Competence Upgrading. The IT Guide Association was set up under the IT Competence Upgrading project. Experiences from the project are carried over into a recently launched project 'IT for the People', a collaboration between the IT Guide Association and Gellerup/Hasle Libraries. IT Competence

Upgrading was instrumental in Århus Public Libraries getting the Bill & Melinda Gate Foundation's highly estimated library prize "Access to Learning Award" of half a mill. US dollars in 2004. The prize was awarded in recognition of the project's focusing on making technology freely available to the citizens, for teaching citizens and staff to use technology as well as making a special effort in relation to resource-weak groups of society.

Voluntary organisations - apart from the IT Guide Association, the Daisy Association (Tusindfryd) offers help with homework at Gellerup Library. The Daisy Association is a department under the Danish Refugee Council; it consists of a group of young students who four times a week offer help with homework free of charge to children, young people and adults. You don't have to book a session, you just turn up. The homework-help is for all citizens, whether they attend a language school, are preparing for the theoretical part of their driving test, attend primary or secondary school. It is also available to people who are starting upper secondary school or a commercial education. About 15-20 citizens attend per opening day. http://tusindfryd.com/

Community Centre Gellerup has two target groups:

1. Staff members of the involved institutions: Healthcare Centre, Public Information and Århus Public Libraries/Gellerup Library
2. Citizens in the local community (Gellerup).

We want to:

- Develop the public library and new roles for library staff
- Develop the public library service, particularly as regards information and learning on the basis of cooperation
- Develop and exploit the staff's competences, knowledge and resources in a joint action-oriented, targeted and dialogue and value-based development of cooperation across the institutions
- Develop a new organisational form across administrations and institutions with tasks as local community centre for the citizens of Gellerup

- Develop models and methods for cross-sectorial cooperation
- Test diversity management in a cross-sectorial cooperation
- Develop models for inclusion of citizens and volunteers in established organisations
- Move focus from clients to citizens – to make a difference in public service to citizens
- Work with exposure of the physical space and the services offered to citizens, while at the same time making the space flexible to the extent that it can change concurrently with any citizen initiatives taken.

Facts

The target group for Community Centre Gellerup is the citizens in the local area of Gellerup Library. There are about 19,000 inhabitants, 44,5% of which have a bicultural background. Approximately 70 different languages are spoken in the area. 40% of the children in the local education area for two of the schools of the area are children under 14. All pupils of the local school Nordgårdsskolen are bicultural.

Gellerup Library works closely together with Hasle Library. The two libraries together cover a local area of about 40,000 inhabitants.

Common for these local areas – called Vestbyen – is that the total income of the average family is low – about 14,517 Euro against 19,541 for Århus in general. About 50% of the citizens of the area are receiving cash payments or transfer income. Half of the total number of inhabitants lives in council housing.

Many of the citizens have only short or no education at all and lack the basic knowledge to enable them to be part of Danish society on an equal footing.

Besides that there are several other characteristics to identify the areas:

- A mix of non-profit making residential housing and detached houses
- The level of moving in/out of apartments is appx. 40 %
- 17% of new citizens are students, 6% of ”old” citizens are students

During the last 3 years there has been some development:

- Unemployment among immigrants and refugees has dropped from 24.3% to 20.4%
- Employment among immigrants and refugees has risen from appx. 29% to appx. 31.2%
- A significant increase in number of immigrants and refugees involved in job-preparing initiatives – 3.8% to 9.4% (also for Aarhus Municipality)
- Number of immigrants and refugees in the area has over the same period risen from 48.3% to 53.3%
- The percentage of citizens participating in organised or unorganised spare-time activities has risen from 57% in 2003 to 80% in 2005 (variations according to ethnic background are insignificant).

Several of the projects launched on the basis of Gellerup Library have been targeted at or been based on women, particularly women with a bicultural background. As part of its strategy Gellerup Library has taken as its point of reference the African proverb: “When you educate a man, you educate a man. When you educate a woman, you educate an entire family/village”.

Facts about Gellerup Library:

	2003	**2004**	**2005**
Opening hours	40 hours per week	40 hours per week	40 hours per week
Circulation	174,133	158,977	165,172
Visits	162,401	156,121	183,683
Loans per visit	1,07	1,01	0.7 (1.1 -2005)
Materials			38,764

CONNECTION WITH THE MUNICIPALITY OF AARHUS

The main vision for Aarhus Municipality is as follows:
Aarhus – a nice city for everyone. Room for diversity and multiplicity. Integration must be one of our strengths.

Since the year of 1996 Aarhus have had a policy for new citizens. There are four headlines for working with ethnic minorities in the municipality of Aarhus:

- Citizenship and antidiscrimination
- Education
- Employment
- Pattern of settlement – ghetto or not

Furthermore, the Municipality of Aarhus has three values that all public employers have to work by. These are:

- Credibility
- Respect

- Commitment

Community Centre Gellerup has added another two values:

- Focus on resources
- Joint ownership

The staff of Community Centre Gellerup has developed a model for these five values.

By:

1. Credibility
2. Respect
3. Commitment
4. Focus on resources
5. Joint ownership

the staff perceives:

1. Everyone must be able to count on what we are saying.
2. Everyone must be serviced differently in order to receive the same service.
3. We are accommodating and have an appreciative approach to the citizens and to each other.
4. We give our best in our work and in dealing with each other and the citizens.
5. We focus on resources rather than deficiencies.

The staff of Community Centre Gellerup has prepared action plans for how to act in order to meet the abovementioned values. The action plans fall under five headlines:

- Management

- Staff well-fare
- Inclusion of citizens
- Networking
- Interaction among the Staff.

CASES

I present below 3 cases of projects that have taken place in Gellerup Library and Community Centre Gellerup in 2003, 2004 and 2005:

1 - JOB CORNER AT GELLERUP LIBRARY

What is the Job Corner?
The Job corner is an informal and open environment that hopefully will provide the citizens with new and better ideas as to how to get into the labour market. The Job Corner is targeted at the citizens in the library's local area, insured as well as non-insured. The primary target group, however, is the unemployed with a different ethnic background.

The Job Corner is a separate entity within Gellerup Library. Placed in an obvious position, but removed from the library's other computer activities, and next to computers that are exclusively for the use of ComsumerINFO and FINFO/Kvinde.Finfo, so that the users can work reasonably undisturbed. At the same time the Job Corner is a very visible part of the library.

The Job Corner consists of three computers with printers, and a telephone that is connected when the users have to get in touch with an employer.

On the Job Corner's notice board you will find printed job offers from the Job Centre database, put up daily, and sometimes notices from other bases and vacancies in Århus Municipality.

The Job Corner's strong point is – and has been all along – that it is independent of the general case officer environment. You can just drop in – informally and anonymously and obtain friendly advice.

In short, it is very much a question of realising your own abilities and resources through contact with positive and friendly people, and this awareness is extremely useful when having to present oneself in the best possible way either in a written application or when going for a job-interview.

What kind of help does the Job Corner have to offer?
You can be helped with writing a job application, the layout of a letter and proof-reading of applications, written or telephonic contact to employers for further information about a job and help to look for jobs in various job bases. It could also be assistance in working out a CV, placing your CV or basic registration on the Labour Exchange's web site.

When can the Job Corner be used?
Originally, the Job Corner was open two hours a day, manned by one librarian. During the first 9 months, job consultants from the Labour Exchange or Job Centre took turns to be present every Thursday. They could offer advice, but not actually deal with cases.
Generally speaking, the Job Corner is an advisory service.

After about six months it was deemed necessary for the Job Corner to be available all through the library's opening hours. It turned out to be less than a great idea – not that the number of users decreased, but the decision hit the weakest users the hardest. So the idea was abandoned and today we are back to two hours' opening time on the first four days of the week. The Job Corner is open between 1 and 3 p.m.

At the beginning between 7 and 9 daily users visited the Job Corner – today the figure is about 20.

Is that all?
No, the Job Corner has had a lot more to offer. The employment department has offered 2 job-application courses with room for 8

participants each time. Introductions to searching in various job bases on the net have been arranged as well as a series of lectures on various job-related topics. Two smaller job fairs have been arranged – and these are to be an annual event in the future. The majority of the participating firms have many unskilled employees and the others are well-known for having many bicultural employees and making a special effort to encourage diverse management.

And now what?

It all started as a development and cooperation project between the Labour Exchange, the Job department in Århus Municipality, Social Centre West and Gellerup Library. A steering committee was appointed to monitor the project, consisting of a representative from each cooperation partner.

The Job Corner started on 1 June 2002 and had status as project until 1 April 2004, whereupon it became a permanent department of Gellerup Library.

The Labour Exchange and Job department in Århus Municipality have established JobWest, a job centre for unemployed or job seekers living in Århus West.

Job West is a collaborative project which means that residents in Århus West only have to contact one place and one of the 35 case officers when they have questions or cases concerning unemployment and job seeking. Two job guides have been appointed to assist in these matters.

There is also collaboration with other projects and initiatives, working towards the same goal of getting more citizens with refugee and immigrant background into ordinary jobs. This collaboration takes places on many levels – either in the form of telephonic contact, or as initiatives to concrete actions and/or arrangements such as lectures, offers of assistance etc.

The funding for the Job Corner was initially granted by the Coordination Committee for the Preventive Labour Market Initiative.

2 - IT COMPETENCE UPGRADING AT THE LIBRARY

Ethnic minorities and information technology at Gellerup and Hasle libraries in the western part of Århus.

How can public libraries promote information, education and cultural activities for ethnic minorities through the use of, among other things, information resources including multimedia and the Internet?

IT Competence Upgrading – an integration project at Århus Public Libraries

IT Competence Upgrading is an integration project funded by Århus Public Libraries and the Urban-programme, which is an integration programme subsidised by the EU and Århus.

Municipality. Gellerup-Hasle-Herredsvang has been designated as Urban-area in the period 2002 – 2007 (www.urbanbydel.dk).

The aim of the project was to disseminate knowledge of IT and to increase citizen involvement in the urban area through free, measurable and tangible IT activities. The project ran for 18 months, starting May 2003. The project comprised IT-courses: PC-training, IT-guides (lessons in how to teach others), digital administration for staff, Internet introductions, inspirational meetings and the founding of one or two new IT-associations. 2-3 new cooperating projects were linked to IT Competence Upgrading. Finally, the project had to be self-supporting by means of volunteers by 31 October 2004.

Empowerment as method – to share in the project

The target group of the project is the citizens in the urban area who do not have access to a computer at home. There is a special focus on ethnic women and other groups that do not have the time or the resources to acquire basic knowledge of IT.

Using the empowerment method, the project has succeeded in involving citizens in a process pertaining to themselves. The key is awareness and respect. The citizens' needs and wishes are the focal point and at the same

time the efforts of citizens/users are strengthened from the very beginning through involvement in the various activities. This increases the sense of ownership in the different initiatives. From the word go, co-determination and independent organisation of the activities have been the policy. The staff of the project acts as dynamos ensuring that the needs are uncovered and the activities carried out.

As a produce of IT Competence Upgrading, the Association of IT-guides was founded in June
2004.

Achieved goals – general empowerment and IT skills for local citizens
Apart from the basic IT skills, the citizens have acquired basic competences in independent organisation of events and democratic participation in the local community through, among other things, the founding of new IT associations including the Association of IT-guides.

An IT-guide is part of a team of volunteers with knowledge of IT, who trains other citizens in the urban area and conducts IT courses. All IT-guides have participated in an intensive course teaching them to pass on their knowledge of IT to others. Prerequisites for participation in the course are a sound knowledge of computers and the Internet and the ability to accept new challenges with an open mind.

Furthermore, IT as a neutral topic has been an excellent common ground for the cultural meeting of different ethnicities and networks. The project has, moreover, created a space for more energy and positive thinking, especially with regard to realising hopes and dreams, qualifying for the labour market and preparing digital instructional materials. Along with the projected acquirement of IT skills there have been many added bonuses in the project through the synergy with concurrent co-operations.

Tangibly, the project has until now resulted in 2 permanent and 3 temporary jobs plus 2 newly founded groups working to create their own projects, associations and cooperation with other projects and public institutions.

Best practice

It is important to strive for a better distribution of the economical means to realise new initiatives in order to consider all partners in the community. Based on experiences gained from the short time IT Competence Upgrading has been running, I would like to end with some recommendations, which might be useful in promoting integration in other places or areas:

- Create ownership and awareness in regard to various activities/projects in the community
- Use diversity as a strength
- Openness and obligingness from the local authorities as well as other established local
- resources in regard to knowledge sharing, networks, contacts, facilities and new ideas
- Appreciate and involve key persons from the community in connection with the
- implementation of new initiatives
- Recognition ensures visibility of human resources
- Create cross-cultural meeting places focused on activities aimed at all citizens in the
- community
- Broad cooperation – across ethnicity and local initiatives in the area
- Changing image through the media – ensure involvement from the media, the politicians and
- the local authorities to promote new initiatives in a positive way
- Focus on simplicity, visual description and innovativeness in order to avoid linguistic
- barriers and misunderstandings

- Flexibility in preparing the work and tasks based on the individual needs and wishes of the
- persons involved
- No single truth exists – there is always a multitude of truths.

3. PROJECT "READING HUNGER"

Background
Many different nationalities, poor level of education and a large number of children under 14 characterise the area of Århus where Gellerup and Hasle libraries are situated, and generally speaking people in the area are on low incomes.

Non-printed materials make up an ever-increasing percentage of the loans in the two libraries. This is a development the libraries want to reverse and that can be done e.g. by encouraging children to read and to be read to – by giving them a "hunger for reading".

Vision
"Oh, mighty fairies! Give my children not only health and beauty and riches and all the other things you usually proffer. Give my child READING HUNGER, that is what I beg of you with all my heart. Because I so much want for my child to have in his hand the key to the wonderland where one can gather the most beautiful of all pleasures!"

(Translation of a quotation by Astrid Lindgren that shows precisely what we want for our children).

Objective
The overall objective of the project is to increase bilingual women's interest in stimulating their children's ability to pick up a language and via the mother strengthen the children's cognitive development and imagination. This is done through working with stories and reading aloud.

Target group
The target group is children aged 4-10 and their mothers. The main target group is children and mothers with bicultural backgrounds.

News value and perspectives
Reading Hunger differs in choice of method from other reading projects in the sense that it builds on user involvement of children as well as adults. Materials, brochures and bookmarkers are prepared in such a way as to be easily distributed as PDF-files to both partners and other stakeholders in Denmark. The results and experiences from the project are disseminated to the public libraries in Denmark.

Organisation
A project organisation has been established with a project coordinator for the duration of the project. The project also has a project and steering committee consisting of 1 person from each of the following local authority administrations in the Municipality of Århus: Language support, local education authority and the regional children's culture coordinator, the manager of Gad's Bookshop in City West, the local main shopping centre and the libraries.

The project and steering committee adjusts and adapts the project during the project period and makes sure that it is firmly rooted in the respective institutions.

Time schedule
The project runs from 1 January 2004 until 30 September 2005 including implementation and preparation of a report.

Project activities

- **Focus group interview**
  In spring 2004 mothers from Turkey, Lebanon and Somalia were interviewed. Only a few of them read aloud to their children, but several told them stories. A total of 100 children from day-care institutions and schools were also interviewed.

- **Inspiration events**
  There were three inspiration evenings with 56 participants in all. Half of them were pedagogues and the other half librarians – and this mix made for an exciting and inspiring subsequent discussion.

- **Great story-telling day**
  In October, 'Great story-telling day' took place in institutions, schools and libraries and in the local shopping centre in Vestbyen. The idea was for as many children as possible to listen to a story or two during this period. Most of the stories were in Danish, but it was also possible to listen to stories in other languages. About 600 children had the pleasure of being read to or told stories by about 30 reciters and story-tellers who represented a mixture of professionals and amateurs, writers from Copenhagen and volunteers from the local community.

- **Story-telling workshops**
  It has been quite difficult to explain exactly what a story-telling workshop is, and how it might benefit the mothers if they participate. We succeeded in establishing two story-telling groups.

  For one of the workshops, Somalian mothers with little knowledge of the Danish language came. Through an interpreter it became possible to tell each other fairy-tales from Somalia and Denmark.

  In the other group the mothers produced photo picture books. The women were given a disposable camera to take home to take pictures of their children. Together we worked out a brief text for each photo.

- **Information and reading material**
  Instead of a brochure the project published a small pixy book *The big bed* with drawings by Søren Jessen. The book describes how being read to is a great and wonderful thing. Published in September 2005 the book will be distributed to all five-year-old children in the area. 16 different bookmarkers have also been handed out in the libraries.

- **Homepage and newsletters**
  The project's partners and other stakeholders have been able to follow the project through the 16 newsletters that were sent out.

  The newsletters were published together with other material of interest on the project's homepage: http://www.aakb.dk/sw28828.asp

The future
Even though the project has been completed, the work is naturally still going on with getting the children to "lust for" a good story either by listening or reading themselves.

We plan to have 2 reading campaigns a year. In 2205 the Summer Book has been a great success with more than 100 children participating, as have various arrangements in connection with the Hans Christian Andersen year. The autumn will start off with reading aloud at both Gellerup and Hasle libraries at least once a week. And we still want to help any mothers who might be interested in making small photo books with brief texts.

Staff qualifications
Community Centre Gellerup is working with different strategies for staff education: a structured course for members of staff to develop and use their competences, knowledge and resources in a goal-oriented dialogue and value-based development, but also including the development of new roles, models and methods for cross-sectorial cooperation and testing diversity management in cross-sectorial cooperation.

At Community Centre Gellerup many members of staff have different training:

Healthcare Centre: Here we have midwives, dental hygienists and health visitors.

Public Information: Here are 8-10 people with widely differing backgrounds (anthropologist, theologian, nurse, ergonomist, interpreters, pedagogue etc.), 3 on full-time, the others in flex jobs.

Public library: librarians and assistants. Also an MA in political science, working as an integration consultant, three people on subsidized salary, a computer scientist and one without a formal education. A total of 6 FTEs (37 hours a week), apart from the one employee on subsidized salary/light job. Finally a project coordinator and IT instructors in the project "IT for the People".

Demand for staff qualifications

- Innovative
- Accommodating
- Outreaching and networking
- Pedagogical and communicative abilities
- Creative, focus on resources among others
- Project-oriented
- ICT
- Capable of differentiated service
- Social and intercultural knowledge
- Insight in/knowledge of the labour market and education
- Capable of navigating in complex contexts

CONCLUSION

Libraries are well placed to act as lever in creating hopes and making dreams come true. But in order to do so, libraries must change continuously to remain relevant for children as well as for adults.

In developing the future of a community there are three processes of imagination to consider before taking action:

1. Understand
    - Affirmative topics
    - Positive questions
    - Value-oriented
    - Intergenerational

2. Imagine
    - Possible
    - Visionary
    - Hopes

3. Create
    - Practical
    - Visibility
    - Organisation

Being a part of community development is a process by which the library provides opportunities for empowerment by providing citizens proactive access to the information, knowledge and skills necessary to satisfy their needs.

Community Centre Gellerup is now a model developed on practical acting by focusing on community needs. At the same time Community Centre Gellerup is developing a lot of strategies for the development of the community of Gellerup. The innovative aspect is to develop forms of and models for cooperation in cross-sectorial work, diverse management and cooperation under different management forms, the use of volunteers on a daily basis as well as developing the public library with pro-active citizen inclusion.

INFORMATION SKILLS FOR KNOWLEDGE MANAGEMENT IN DEVELOPING COMMUNITIES: COMPLEXITY OR COMPLACENCY?

Gavin R Davis

Abstract

The paper argues that information skills for knowledge management are crucial for the survival of people. The question is, to what extent is there an urgency to instill these skills especially among developing nations? Also, what role does and can libraries play to achieve the aim of assisting in development in this context? The paper draws on literature searches on development in Africa as well as research conducted among a historically disadvantaged community. From the literature there seems to be evidence that post-colonial efforts to develop African countries actually brought about a recolonization of Africa in terms of economics and politics. The International Monetary Fund (IMF) and World Bank (WB) played major roles in this recolonization. Apart from this economic and political recolonization, Africa is also being intellectually recolonized, because "these agencies determine what can be studied, written and voiced in the continent" (Federica, 2000: 19). For this reason libraries should play a pivotal role in information skills development for knowledge management. Unfortunately, librarians do not always have a basic understanding of cognitive and behavioural theories especially in information retrieval. Librarians themselves need to be equipped with knowledge of these theories. Although information retrieval skills training can be complex Africa can ill afford to be complacent in its development. It is therefore the author's contention that continental initiatives like NEPAD should be revisited in this regard.

Gavin R Davis is a lecturer in the Department of Library and Information Science (LIS) University of the Western Cape, Bellville, South Africa. He completed PH. D research in 2005. The study dealt with information seeking behaviour of undergraduate students from disadvantaged backgrounds. Current research includes knowledge management, Community librarianship, information retrieval and developmental issues in LIS.

Introduction

Knowledge management (KM) is often ascribed to the discipline of management particularly in the corporate environment. Librarians would argue that KM is nothing new to the library profession, sometimes claiming that "…other communities try to colonise our domains" (Hobohm, 2004:7). Whatever the argument in terms of whose domain KM is, it is important that knowledge in a given environment should be managed for the benefit of a particular community. Community in context can refer to a corporate environment or a continent / country. The context of KM in this paper is continent / country orientated and Africa / South Africa specific. The purpose of the paper is two –fold. Firstly, I give an argument for the necessity of information skills to manage knowledge effectively and secondly, argue that the importance of libraries to assist people to acquire information skills cannot be emphasised more. I also draw on the literature in particular contexts and on studies conducted in specific sectors.

Although I realise that information skills training can be a complex task Africa can ill afford to be complacent about these important skills. There is still an Afro – pessimism from the developed world regarding economic sustainability although one commentator notes that "[d]eveloping countries need to design creative means to divert some of the global wealth and knowledge resources toward their issues" (Afele, 2003: 160).

DEVELOPMENT REVISITED

In the introduction to *A Thousand flowers: social struggles against structural adjustment in African Universities* (2000), the editors argue that the Structural Adjustment Programmes (SAP) of the World Bank (WB) and International Monetary Fund (IMF) brought its own problems to Africa. The idea behind the SAP was to bring about economic recovery. However, funds to education were cut. The editors claim that "…many teachers and other academic staff were retrenched and wages were frozen" and "…development of an African educational system…seriously undermined" (*A Thousand flowers.*..2000: xi). Students have waged struggles in most of the African countries against the SAP adopted by their

countries and institutions (Federici and Caffentzis, 2000: 115). Many student demonstrations have indeed "…targeted state corruption (Zimbabwe), authoritarianism (Zaire, Togo, Liberia) and the arrests of intellectuals critical of the ruling party (Sudan, Somalia)" (Caffentzis: 2000, 16).

Although Kenyans still suffered from Colonialism, there emerged "an alternative way of thinking about education and development" (Närman, 1995: 4). However, this kind of development can only be realised if "…an attempt to liberate our own minds from a basically Eurocentric perspective..." is achieved and development involves "…the needs and cultures of the very peoples themselves in Africa, Asia and Latin America" (Närman, 1995: 4). He later rightfully suggests that education is a basic human right, but also an indicator for development (Närman, 1995: 61). Clearly then, ignorance does not stimulate development.

A research report regarding higher education in three East African countries, namely Kenya, Tanzania and Uganda found that students "…find themselves without the language and analytical skills necessary for rigorous academic study…" (Rajani, 2003: 14). Rajani's contention is that the educational crisis in East Africa is "compromising quality and equity in higher education…" In Tanzania, problems in higher education during the 1980's included a scarcity of books, other teaching materials and equipment. There was a decrease in academic staff as people were looking for greener pastures. This in itself was a problem as academics departed with valuable information and knowledge.

Despite this exodus of academics, student numbers increased at the same time. This invariably placed a heavy burden on higher education institutions in the country (Mkude, Cooksey and Levey, 2003: 7).

The same problem seemed to be prevalent in Uganda, where student numbers were on the increase with limited resources. This in turn led to a sharp deterioration in the quality of teaching and learning, not to mention empty library shelves and bare laboratories (Musisi and Muwanga, 2003: 10). Students suffered as a consequence, having no "…exposure to advances in information technology…" (Musisi and Muwanga, 2003: 11).

The situation seemed no better in other countries in Africa. In Mozambique, for instance "Less than 2% of the student body had entered the University of Lourenco Marques by independence in 1975" (Mário, et al., 2003: 7). It was furthermore reported that this university catered to "…the sons and daughters of Portuguese colonists" (Mário, et al., 2003: 7). This was despite the fact that Portugal tried to expand its higher education to Africans in the 1960's and 1970's. Indeed, colonialism left a marked effect on Africa.

Federici (2000: 19) suggests that post-colonial efforts to develop African countries actually brought about a recolonization of Africa in terms of economics and politics. She furthermore posits that the IMF and the WB played major roles in this recolonization. Apart from this apparent economic and political recolonization, Africa is also being intellectually recolonized, because "these agencies determine what can be studied, written and voiced in the continent" (Federici, 2000: 19).

Problems in higher education in South Africa were no different from what were experienced in other countries in Africa. However, one can only give a meaningful discussion of higher education in South Africa by relating to the political and to a lesser degree, economic and social history of the country and contextualising these to the present situation. Although economic and social issues played a less meaningful role, the politics of South Africa cannot be divorced from socio-economic issues. The politics of South Africa is particularly of importance given the country's unique historical apartheid ideology, which invariably affected socioeconomics. This ideology was legislative and practised by the then ruling National Party from 1948 until 1993. For a meaningful discussion of higher education in South Africa, it would therefore only make sense to firstly discuss apartheid within its historical context.

South Africa occupied a unique position in the world in terms of its apartheid policy, which was prevalent for many years. For this reason one cannot discuss the impact of political, economic and social issues without mentioning apartheid. The apartheid ideology, according to Piet Cilliè, who was in government from 1954 to 1978, as quoted by Giliomee and Schlemmer (1989:63), was "...to safeguard the self- determination of the

Afrikaner." However, apartheid involved a number of issues, which left a marked effect on the lives of the people of South Africa. Unjust labour regulations, race classification, group areas, separate amenities, separate education and job reservations seriously affected Black people. Afrikaners held political control and privileges. The irony was that South African born blacks were regarded as inferior to even white immigrants. Some of these white immigrants had voting power and were given seats in the all-white parliament. According to Tutu (1994: 5), H.F Verwoerd (1953) commonly regarded as the father of apartheid, reiterated, "... there is no place for... [Africans] in the European community above the level of certain forms of labour" and "...the black child [should not be allowed] to graze in the green pastures of European society". These sentiments were reminiscent of decades of racial discrimination and oppression.

Political issues in South Africa invariably had an influence on the economic welfare of its citizens. Blacks were forced to have separate homelands in which to handle their own affairs. This in turn had an impact on access to basic resources. According to Lipton (1989: 8), "...apartheid...provided the white working and lower middle classes with preferential access to resources such as housing, welfare benefits and education with considerable political power to protect their privileges". Things proved no different in the higher education sector. One observer in a keynote address stated, "…millions of pupils and students in [South Africa] have been…cruelly abused and manipulated by Apartheid education" (O'Connell, 1991: 1). However, a discussion of student uprising and riots during the 1960's, 1970's and 1980's is beyond the scope of this paper.

WHAT EXACTLY IS KNOWLEDGE MANAGEMENT?

It is a daunting task to define knowledge management, given the various perceptions of the concept. For the purpose of this paper I will give some definitions and try to contextualize.

Kuhlen (2004: 22) argues for a paradigm shift in the understanding of KM. He argues that the traditional view is that "…knowledge is produced by single authors, is published and stored in information containers…"

(Kuhlen, 2004: 23). This knowledge is then distributed and retrieved by end users. He regards this as the static view of knowledge management which he refers to as the knowledge warehouse approach (Kuhlen, 2004: 23). Knowledge and information are not fixed but the dynamic or communicative view of knowledge management "…emphasizes the ongoing growth and renewal of knowledge and information in a continual process of exchange and communication" (Kuhlen, 2004: 23). In Kuhlen's view KM has a lot to do with knowledge exchange and communication.

Another view of KM is that it refers to "…developing new applications of IT [information technology] to support the capture, storage, retrieval and distribution of explicit knowledge" (April and Izadi, 2004: 16). Although IT plays a major role in KM, its purpose is more of a support. However, the importance of information technology should not be underestimated. It is therefore important for seekers of information to have the necessary skills to search especially online systems. The following section gives a brief definition of online searching.

ONLINE SEARCHING DEFINED

Gash (2000:49) defines online searching "... or online information retrieval ... [as] a method of retrieving information from very large computer-mounted databases." Gash suggests that online searching refers to a method users will use to retrieve information. However, online searching refers more to a process of trying to retrieve information which would solve a problem. This process takes place during an interaction between a searcher and a computer. The actual information would therefore be contained within the retrieved records.

With the increase in computer power and the exponential growth of information, the feasibility of text searching has also increased (Lancaster, 1998: 222). Taylor (1999: 158) states that Natural language processing (NLP) has as one of its goals the creation of IR systems that can:

- interpret users' information needs as expressed in free text
- represent the complete range of meaning conveyed in publications
- interpret a match between a user's information needs and the documents that meet those needs

Natural language processing also has to do with the manipulation of keywords and written language processing (Taylor, 1999: 163). Taylor furthermore points out that the success of keyword searching is dependent upon:

- authors writing about the same concepts using the same words
- searchers being able to guess the words authors used for the concepts

There is of course the probability that searchers may not search exactly in the way an index has been set up. This may lead to the retrieval of irrelevant materials (Taylor, 1999: 164). Searchers of information should therefore know how to develop a search strategy before actually searching.

The development of a search strategy

Soergel (1985: 351) is of the opinion that the conceptual formulation of a search query "…is at the heart of searching." The search strategy usually starts with a general and simplified format and then proceeds to methods for structuring the search topics. These methods include:

- analysing facets
- sectioning search output
- sub-searches
- chained sub-searches, information found in one step serves as the basis for selecting descriptors in the next step

Soergel (1985:132) furthermore argues that an information retrieval system should assist a user to recognise the relevance of a document. He mentions several ways in which this can be achieved, example:

- for documents with misleading titles, indexers can add a clarifying annotation
- reference librarians can annotate documents that bear an indirect, but important relationship to the problem at hand
- descriptors that led to the retrieval of the document should be highlighted

Soergel (1985: 133) however admits that certain limits prevail with both resources and expertise with regards to information systems. He argues that some users need more assistance than others, while others do not want

assistance. He concludes that an information specialist "... acts as a true professional with independent judgements..." by assisting a user in the utilisation of documents, than merely doing searches. It is Soergel's (1985: 133) contention that the information professional therefore does not merely react to the wishes and preferences of the user.

According to Obeler (1983: 105), "[t]he continuing task, the professional responsibility, of the librarian is to bring information and user together in the most accommodating, least expensive, and most freedom-of – information-promoting way." Bellardo in *The Online searcher* (1990: 3) notes that "[o]nline searching, it has been claimed, demands the very best people – intelligent, self confident, but also sympathetic and understanding, creative and so on." However, she argues, "…there is a small but growing body of research evidence that suggests that these assumptions about good online searchers have been overstated" (*The Online searcher*, 1990: 3). She mentions that reasons given for problems in training individuals to become online searchers relate to personality and intellectual traits. She furthermore argues that it is more the need for the intermediary, that is, the person who is the interface between the searcher and the retrieval system, to be thorough, analytical, probing, and to be able to understand requests in "meaningful" ways (*The Online searcher*, 1990: 5). This may well be so but there is a subjective aspect to on-line searching and specifically the true meaning of relevance.

The typical search procedure model as outlined by Cleveland and Cleveland:

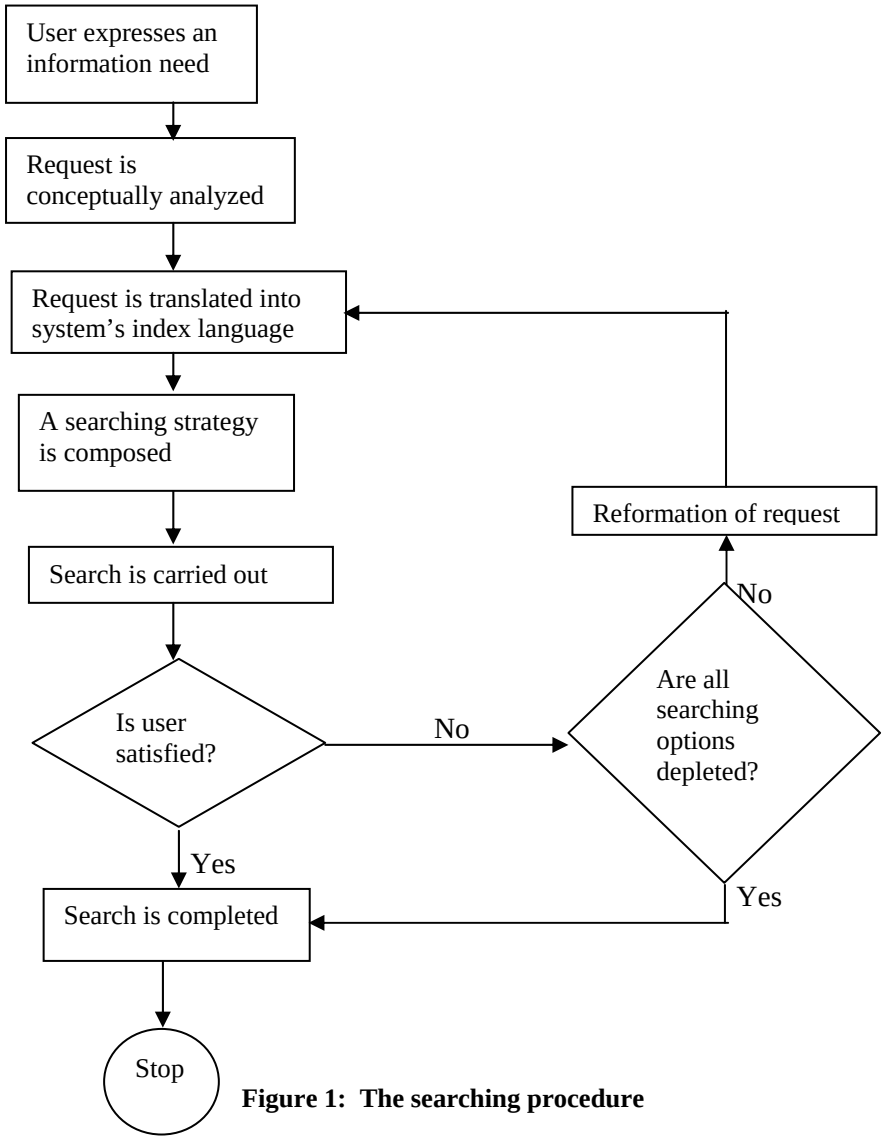


Figure 1: The searching procedure

Source: Cleveland and Cleveland (2001: 28)

In theory the process seems quite simple. There is however a cognitive process, which needs to take place especially when the search request is conceptually analysed and the search strategy, is composed. This model can also not be generalised given the searcher's level of competence in terms of searching. However, Cleveland and Cleveland's model is useful to illustrate that information retrieval systems need to be designed in such a way that searching is iterative.

Lancaster (1998: 3) cautions "[w]ith very large databases...it becomes increasingly difficult to achieve an acceptable level of recall at a tolerable level of precision." He refers to the situation on the Internet regarding this, having become critical. For this reason it has become "... fashionable in recent years to view the information retrieval problem as primarily one of matching 'the anomalous state of knowledge' of a requester with the more "coherent" [**quotes in the original**] state of knowledge of authors" (Lancaster, 1998: 13). To facilitate in making searching easier for searchers a basic requirement of a computer-based information retrieval system is that it should be simple to use (Paice, 1977: 1). Despite this requirement it should be borne in mind that the retrieval process is automated, but document processing is carried out by man or machine (Paice, 1977: 6). Understanding the cognitive processes of a user during searching can therefore facilitate in designing index languages in indexing and in searching (Cleveland & Cleveland, 2001: 32).

Information processes: information skills

The problem of life long learning in the information age is not unique to Africa, in general and South Africa in particular. In studies conducted elsewhere, it was found that students of higher education for example rely quite a lot on finding information in a computer, assuming that there's nothing of value in the library (Smith, 1997). Allen and Allen (1993) furthermore studied the logical, verbal comprehension and perceptual speed differences between librarians and students. Their findings were that students had lower verbal and logical comprehension but higher perceptual speed, which suggested the need for a different approach to information retrieval design.

Bruce (1997: 9) notes that another barrier for especially undergraduate students is that commercial online databases are often only available to library staff and research students. Similarly, one would find that Internet access is sometimes not available to undergraduates or on a limited basis (Bruce, 1997: 9). Kuhltau (1988: 258) proposed the study of the student's perspective rather than that of the librarian for all aspects of information seeking. She indicated that the problem, the system and the process needs had to be investigated. Breivik and Jones (1993: 24) argue that quite a substantial number of educators received their academic qualifications prior to the technology explosion, thereby having received very little or even no training in the use of new information technologies. It would be problematic to incorporate these technologies into current educational programs, expecting students to understand them. It is to this end that Breivik (1998: 2) argues that despite the advancement of information technologies, "…higher education has only dabbled in the applications of information technologies…but so often does not choose to use them to enrich students' learning." My own research has revealed that undergraduate students from especially disadvantaged backgrounds are ill – equipped when it comes to searching online databases (Davis, 2005).

The Association of College and Research Libraries (2001: 16) regards the development of lifelong learners as a central aspect of the mission of any institution of higher education. Students or learners of higher education need to construct a framework in which to learn. Indeed colleges and universities "…provide the foundation for continued growth throughout their careers as well as in their roles as informed citizens and members of communities" (Association of College and Research Libraries, 2001: 20). In a South African context this is not far removed from the truth. To incorporate information literacy training at universities and colleges would require a collaborative effort from a number of stakeholders. Here one particularly thinks of academics, librarians and administrators of information technologies.

Information literacy has a lot to do with cognitive skills, irrespective if computers or other information technologies are used to search for information. Although it is difficult to argue against the many benefits that an information seeker derives from computer and/or information

technology skills, it must be borne in mind that these skills are not necessarily prerequisites for information literacy. I want to argue that both computers and the broader information technology are means to an end, not an end in themselves in this context. Indeed having computer and information technology skills are often regarded as crucial for people to survive in the information age (Clyde, 1997: 50).

However, placing too much emphasis on these skills can be a barrier for information literacy. Information seeking is a subset of information literacy. Without a conceptualization of what one is seeking, the exercise of seeking becomes superfluous. Information literacy skills are therefore important. The concept of information, which lies at the centre of all the literacies mentioned, reinforces this importance. Information literacy with the coexistent concepts is depicted in Figure 2.

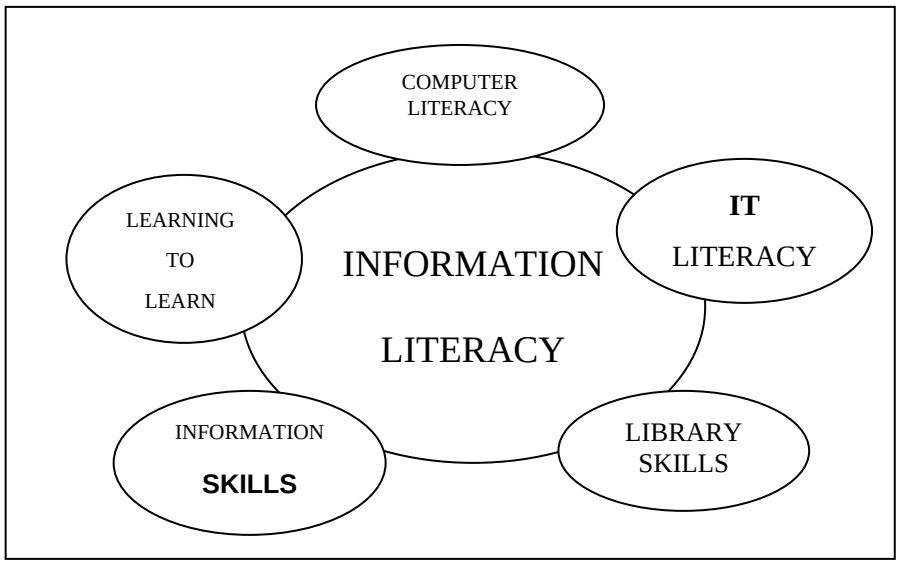


Figure 2: Concepts influencing and coexisting with information literacy

Source: Bruce (1997: 21)

Clearly information literacy is coexistent with these other concepts. One can actually argue that information literacy embraces these other concepts; is at the centre of these concepts as activities. Brandt (1998: 41) seems to confuse information literacy with more of an application of technology to fill information needs. My personal view is that information technology facilitates in the process of information literacy. However, later Brandt (2001: 73) acknowledges that information literacy goes beyond "…the skills and knowledge involved in information seeking and retrieval, and strives for higher levels of understanding regarding the context of information in today's society, its composition and organization, as well as its use for lifelong learning."

One cannot deny that computerized and networked information resources form an integral part in information seeking. Learners therefore have to have some knowledge and an understanding of the technological environment of these resources (Brandt, 2001: 75). He argues that for this reason an information technology (IT) literacy curriculum should feed directly into an information literacy curriculum. Similarly, the integration of library skills and computer literacy skills should form part of such a curriculum. This may stimulate students to adopt and acquire information skills necessary for life long learning.

Before anyone can become information literate, he/she should be made aware of what the concept of information is. In this regard a number of outcomes are important. These include: a person should be able to recognize a need for information, identify and locate appropriate information sources, know how to gain access to the information contained in those sources, evaluate the quality of the information obtained, organize the information and use the information effectively. Other observers prefer to use the concept of user education to encompass a broad method of addressing the problems related to information literacy. In this regard Gericke (1997) posits, "[u]ser education should …include all forms of instruction aimed at improving the use of libraries…[including] training in information handling skills…and computer literacy should be included."

Lwehabura (1999: 129) argues that user education "…aims at changing an individual's behaviour and experience towards the use of library and other

information sources." It seems that these definitions are mainly concerned with the use of the library as an information resource. User education therefore cannot be equated with information literacy, but is a means of instruction aimed at information literacy. Lwehabura (1999: 130) seems to endorse this by stating, "[e]fforts should therefore be made to equip African university libraries with enough computers and latest IT facilities so that libraries can function properly." However, these quantitative measures can hardly address the fundamental problem of information literacy. For this reason a closer look at information seeking is important.

INFORMATION SEEKING

Hjørland (1997: 3) contends that "information seeking has mainly been studied in two large sub areas of information science: user studies and information retrieval." These sub areas are both in a crisis, making them isolated from each other. The study of information seeking which "critically analyzes the positivistic and idealistic assumptions about knowledge and science … [introducing] an alternative view of knowledge can help to overcome the crisis in both user studies and in information retrieval research" (Hjørland, 1997: 3).

Wilson (1994: 250) argues that despite information science's focus on information seeking, it is but one of the disciplines that deals with this phenomenon. He cites consumer behaviour as an example. This is probably why his general model of information behaviour relates to an information need. Wilson (1997: 552) is of the opinion that an information need is basically a subjective experience, which occurs in the mind of the seeker and may not be observable to another person. The person who is the seeker of information would then be in a better position to know what the need is. However, this certainly does not imply that the person understands the need. Here one must actually distinguish between the seeker of information and the one searching on behalf of the seeker. The person who has a need for the information is the seeker while the intermediary is regarded as the searcher. The intermediary can never be in a position to understand the true meaning of relevance. An item of information within a record is said to be searchable if compared against some part of a search request (Paice, 1977: 6). It is retrievable if it can be printed out for the user's convenience (Paice,

1977: 6). A user of a document retrieval system will find that "... not all of the relevant records are retrieved (though he will not know how many have been missed), and "... that many of the retrieved records are in fact irrelevant" (Paice, 1977:170).

Kuhlthau (1993: xx) is of the opinion that "…information – seeking is a process of construction that begins with uncertainty and anxiety." She speaks about stages of the information search process being characterized by three realms, namely the affective, dealing with feelings, cognitive dealing with thoughts and physical dealing with actions. Unfortunately, she posits, "information retrieval has concentrated on what matches the system's representation of texts rather than responding to users' problems and process of information gathering" (Kuhlthau, 1993: 1). The information – seeker searches "…for meaning rather than a right answer, and views information as a way of learning and finding meaning or as a process of construction" (Kuhlthau, 1993: 3). This is important especially if informed decisions for survival need to be made.

According to Large, Tedd and Hartley (1999: 31), the process of information seeking "… involves interaction among a number of sub-processes: problem recognition, problem definition, search system selection, query conceptualization, query formulation, query execution, examination of results, and iteration of some or all these sub-processes if the results suggest this is necessary." Information seeking as a process requires cognitive skills from the seeker of the information.

INFORMATION RETRIEVAL SYSTEMS

Blair (1990:1) argues, "…information (or document) retrieval system design has been the poor stepchild of the computer revolution". He furthermore argues that information retrieval is a difficult area in which to work, because it is often unclear what the fundamental issues or problems of the field are (Blair, 1990:1).

The concept of system is also hierarchical, as it can be simultaneously a macro- and a micro – system in relationship to some other system. As a subsystem of a country, the library can be regarded as a micro – system.

The library can also be a macro – system with its departments being micro – systems. Efficiency of a retrieval system is defined solely in terms of user satisfaction with the items retrieved (Heaps, 1978: 8). People concerned with the system design should "appreciate the fact that user convenience and economic efficiency are not always compatible" (Heaps, 1978: 8).

CONCLUSION

Knowledge management as nebulous as it may seem, is important for the development of various sectors of society. Although KM is quite prevalent in the corporate world, it should play a greater role in the development of people. In order to effectively manage knowledge, seekers of information should have the necessary information skills. According to Kuhlthau (2005) the development of the user – centred approach to an understanding of information seeking behaviour can greatly contribute to such knowledge. Johnstone, Tate and Bonner (2004) argued, "[a] human – centered view of information processing examines the roles humans play in translating received information into action." It is important that all people develop the necessary skills to make judgements on information that they retrieve for relevance. It is therefore in the interest of African countries to instill these skills in their citizens. The New Partnership for African Development (NEPAD) is a good platform to commence with this.

REFERENCES

Afele, J S. (2003). *Digital bridges: Developing countries in the knowledge economy.* London: Idea Group Publishing.

Allen, B and Allen, G. (1993). "Research notes: Cognitive abilities of academic librarians and their patrons". *College and Research Libraries.* 54(1), 67 - 73.

April, K and Izadi, F A. (2004). *Knowledge management praxis*. Cape Town: Juta.

Association of College and Research Libraries. (2001). "Information literacy: competency standards for higher education". *Teacher Librarian*. 28 (3), 16 - 22.

Blair, D C. (1990). *Language and representation in information retrieval***.** Amsterdam: Elsevier Science.

Brandt, D Scott. (1998). "Compartmentalizing computer training". *Computers in Libraries*. 18 (1), 41 - 44.

Brandt, D Scott. (2001). "Information technology literacy: task knowledge and mental models". *Library Trends*. 50 (1), 73 - 86.

Breivik, P S. (1998). *Student learning in the information age.* Phoenix, Arizona: Oryx Press.

Breivik, Patricia Senn and Jones, Dan L. (1993). "Information literacy". *Liberal Education*. 79 (1), 24 - 29.

Bruce, C. (1997). *The seven faces of information literacy*. Adelaide: Auslib Press.

Caffentzis, G. (2000). "The World Bank and education in Africa", from *A Thousand flowers: social struggles against structural adjustment in African Universities***.** Federici, S, Caffentzis, G and Alidou, O. (eds). Irenton, N.J.: Africa World Press, 3 – 18.

Cleveland, Donald B. and Cleveland, Ana D. (2001). *Introduction to Indexing abstracting*. Englewood, Colorado: Libraries Unlimited.

Clyde, A. (1997). "Information skills in an age of information technology". *Emergency Librarian*. 24 (4), 48 - 50.

Davis, G R. (2005). "*Information retrieval interaction and the undergraduate student at historically disadvantaged higher education institutions in the Western Cape, South Africa: a*

cognitive approach". Bellville: University of the Western Cape (Unpublished PH. D dissertation).

Federici, S. (2000). "The recolonization of African education", from *A thousand flowers: Social struggles against structural adjustment in African Universities.* Federici, S, Caffentzis, G and Alidou, O (eds). Irenton, New Jersey: Africa World Press, 19 – 24.

Gash, Sarah. (2000). *Effective literature searching for research*. Aldershot, Hampshire: Gower.

Gericke, E. M. (1997). "Serving the unserved in the year 2000". *Proceedings of the 63rd IFLA General conference*, August 31 to September 5, 1997. Retrieved August 3, 2002, from http://www.ifla.org/IV/ifla63/63gere.htm.

Giliomee, H and Schlemmer, L. (1989)**.** *From apartheid to nation building: contemporary South African debates*. Oxford: Oxford University Press.

Heaps, H. S. (1978). *Information retrieval: computational and theoretical aspects*. New York: Academic Press.

Hjorland, B. (1997). *Information seeking and subject representation: an activity-theoretical approach to information science.* Westport, Connecticut: Greenwood Press.

Hobohm, H. (2004). "Knowledge management – Libraries and librarians taking up the challenge: an overview", from *Knowledge management – Libraries and librarians taking up the challenge.* München: Saur, 7 -10.

Johnstone, D, Tate, M and Bonner, M. (2004). "Bringing human information behaviour into information systems research: an application of systems modeling." Retrieved October 20, 2004, from http://informationr.net/ir/9-4/paper191.html.

Knowledge management – Libraries and librarians taking up the challenge. (2004). Hobohm, H. (Ed). München: Saur.

Kuhlen, R. (2004). "Change of paradigm in knowledge management: framework for the collaborative production and exchange of knowledge", from *Knowledge management – Libraries and librarians taking up the challenge.* Hobohm, H. (Ed). München: Saur, 21 -38.

Kuhlthau, C C. (1988). "Longitudinal case studies of the information search process of users in libraries". *Library and Information Science Research*. 10, 257 - 304.

Kuhlthau, C. C. (1993). *Seeking meaning: a process approach to library and information services.* Norwood, New Jersey: Ablex.

Kuhlthau, C C. (2005). "Towards collaboration between information seeking and information retrieval". Retrieved March 03, 2005, from http://informationr.net/ir/10-2/paper225.html.

Lancaster, F.W. (1998). *Indexing & abstracting in theory & practice*. Champaign, Illinois: University of Illinois.

Large, A, Tedd, L. A and Hartley, R. J. (1999). *Information seeking in the online age: principles and practice.* London: Bowker-Saur.

Lipton, M. (1989). *Capitalism and apartheid: South Africa, 1910 - 1986.* Cape Town: David Philip.

Lwehabura, M.J.F. (1999). "User education and information skills: a need for a systematic programme in African University libraries". *Africa's Journal of Library Archives and Information Science*. 9(2), 129 - 141.

Mário, M, et al. (2003). *Higher education in Mozambique: a case study*. Oxford: Currey.

Mkude, D, Cooksey, B and Levey, L. (2003). *Higher education in Tanzania: a case study*. Oxford: Currey.

Musisi, N B. and Muwanga, N K. (2003). *Makerere University in transition, 1993 – 2000: Opportunities and challenges.* Oxford: Currey.

Närman, A. (1995). *Education and nation building in Kenya: perspectives on modernization, global dependency and local development alternatives*. Göteborg: Vasastadens Bokbinderi.

Obeler, E. M. (1983). *To free the mind: libraries, technology and intellectual freedom.* Littleton, Colorado: Libraries Unlimited.

O'Connell, B. (1991). *Education and the legacy of apartheid*. Bellville: Peninsula Technikon.

The online searcher. (1990). Auster, E. (ed). New York: Neal-Schuman.

Paice, C.D. (1977). *Information retrieval and the computer*. London: Macdonald and Jane's Publishers.

Rajani, R. (2003). *The education pipeline in East Africa: a research report and synthesis of consultations in Kenya, Tanzania and Uganda*. Nairobi: Ford Foundation.

Smith, A. (1997). *Information literacy*. Retrieved August 20, 2002, from http://inst.augie.edu/~asmith/infolit.html. .

Soergel, Dagobert. (1985). *Organising information: principles of database and retrieval systems.* Orlanda, Florida: Academic Press.

Taylor, A. G. (1999). *The organization of information.* Englewood, Colorado: Libraries Unlimited.

A Thousand flowers: social struggles against structural adjustment in African Universities. (2000). Federici, S, Caffentzis, G and Alidou, O (eds). Irenton, New Jersey: Africa World Press.

Tutu, D. (1994). *The rainbow people of God.* London: Doubleday.

Wilson, T D. (1994). "The proper protocol: validity and completeness of verbal reports". *Psychological Science*. 5 (5), 249 – 251.

Wilson, T.D. (1997). "Information behaviour: an interdisciplinary perspective". *Information Processing and Management.* 33 (4), 551 - 572.