

Some thoughts on the trends, issues, challenges and opportunities of information and knowledge management teaching and research in South Africa

Dennis Ocholla

University of Zululand,

South Africa

docholla@pan.uzulu.ac.za

Abstract

Information management and knowledge management mean the same thing to some and different things to others. Ultimately, handling or studying information and knowledge management as the same thing or the two as different things still raises a lot of debate and confusion, an example being the distinction between data management (DM) and information management (IM) or IM and information resource management (IRM), across space and time. There are more shared research approaches, processes, strategies, technologies, content, concepts and know how between KM and IM than can be imagined and that often blurs their distinction. In this paper, I try to conceptualize information and knowledge management before contextualising it within the broader issues, challenges and opportunities in research and teaching in South African i-schools by using experiential knowledge, observations, a literature review and a content analysis of curricula and syllabi that were available during the writing of this paper.

1. Introduction

The pioneering work of Polanyi (1962) and seminal works of Ikujiro Nonaka, Hirotaka Takeuchi(1965,1995) and Choo(1998), among others, have shed light for exploration and understanding of tacit and explicit knowledge, assuming that information would be represented in explicit knowledge. Understandably, knowledge is human driven - what the knowledge holder knows, so to speak (knowingly or unknowingly, what Polanyi terms “we know more than what we can tell”), while information is largely a product of knowledge. One may also say that knowledge is a product of information. In this paper we revisit the concepts of data, information, knowledge and wisdom for laying a foundation for conceptualisation of information management and knowledge management which some scholars would like to separate while others not. Not so long ago data management (DM), information management (IM) and information resource management (IRM) became prominent domains of intensive debate largely to determine where they converge or diverge and for what I would call territorial demarcation for ownership and control of research domains by individuals and institutions. Knowledge management (KM) has become the latest entrant into this debate and justifiably so also invited more debates. Despite this there are more shared research approaches/methodologies, processes, strategies, technologies, content, concepts and know how between KM and IM than can be imagined and that often blurs their distinction. How these diverging views helps the development of IM and KM research, curriculum development and teaching is quite mysterious. There are several models and orientations depending on the size of the programmes and courses as well as their location and the human capital to offer them in the country, culminating in admirably rich programmes and content to quite inadequate offerings. The separation of information management from knowledge

management or pitching one within or separate from the other does occur. The purpose of this presentation is to enable debates and discussions on the understanding of information and knowledge management for developing appropriate research, curriculum and teaching in the i-schools in South Africa. The paper is divided into four parts. The first part conceptualises information and knowledge management in order to create better understanding. This is followed by contextualisation of IM and KM in South Africa i- environment focusing on research, curricula and teaching in the second part. Part three unearths its broader challenges and opportunities within South African I – schools context

Data, information, knowledge and wisdom revisited

Data, information, knowledge and wisdom are inseparable. One common way to explain their relationship is by using a knowledge pyramid as illustrated in figure one.

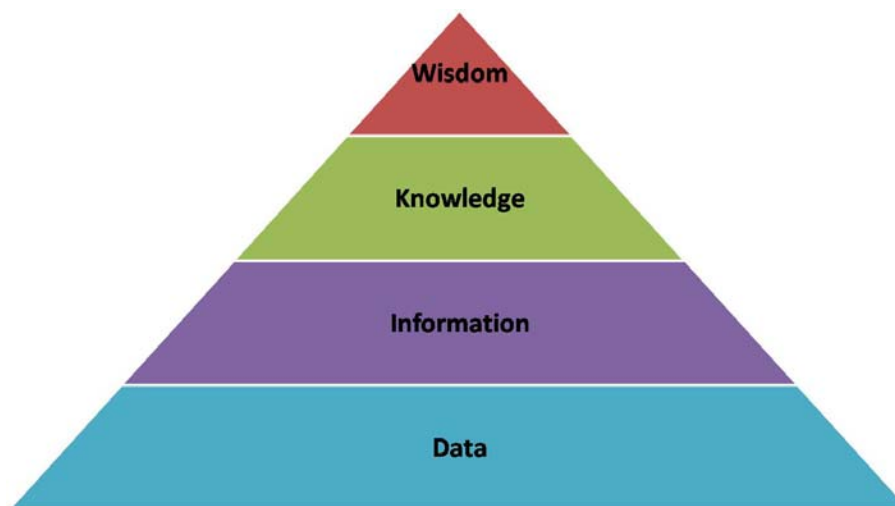


Figure One: Knowledge Pyramid

Knowledge pyramid describe hierarchical relationship between data, information, knowledge and wisdom in form of a pyramid. In this context, data is viewed to be – “discrete, objective facts such as who, what, when, where”, how much, how long. Information – ‘linking of who, what, when and where to tell a story’, Knowledge – ‘information that is culturally understood, such that it explains the how and the why about something or provides insight and understanding while Wisdom – places ‘knowledge in a framework to allow it to be applied to different situations’(Ackoff 1989). Thus, the four components- data, information, knowledge and wisdom- are interdependent. To illustrate this further, data is considered to be unprocessed or raw information consisting of symbols, signs, figures, facts or measurement or statistics without any meaning attached to them. For example figures on height (2m), Distance (10 kms), population (100 students) or temperature (35o C) are vague without being linked to something. Interestingly, MIS and statistical centres (SASB) do not provide only data. Information would be processed data with meaning (e.g. 100 students in a class, in a department or in a university). Knowledge is information that is organised, evaluated and understood. For instance, 350 C temperatures denotes hot or very warm. Wisdom or intelligence informs what to do or is always done when it is hot for

this matter informs dressing arrangement or plan. Several models arise for defining such relationship with knowledge pyramid (Ackoff 1989) being the most popular (see figure 1) for explaining the interdependability. It could be possible also to view this relationship through other models. Taken further, knowledge is considered to be an intellectual capital held and processed within human brain or mind for sharing tangibly (explicit) and intangibly (implicit) largely for the fulfilment of a purpose. Knowledge can also be viewed as “that which is objectively known, an intellectual property, attached to a name or a group of names and certified by copyright or some other form of social recognition (e.g. publication)” as Bell (1973:176) put it. Attaching knowledge to ‘copyright or some other forms of social recognition’ should not limit the dimension of knowledge to modern/exogenous knowledge only. Davenport and Prusak view knowledge to be “a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information” (Davenport and Prusak (1998:5). Knowledge is largely divided into tacit (intangible) and explicit (tangible) knowledge. Although the pioneering work of Polanyi (1962) is linked to the origination of the typology of knowledge into tacit and explicit, the seminal works of scholars like Ikujiro Nonaka, Hirotaka Takeuchi (1995) are highly recognised for the development of the two concepts. They (Nonaka and Takeuchi (1995:58) are of the opinion that while “information is a flow of messages, knowledge is created by that very flow of information anchored in the beliefs and commitments of its holder” [the knower]. Nonaka and Takeuchi (1995:62), on one hand, define intangible knowledge as personal knowledge that is created through individual experiences and embedded within the culture and traditions of individuals or communities often action –based, entrained in practice and therefore difficult to explain or describe. It is what the knowledge holder - ‘knower’, so to speak – knowingly or unknowingly knows- or as Polanyi (1962) terms it “we know more than what we can tell” and therefore disputes (Polanyi) – alongside Nonaka and Takeuchi, s critics (e.g. Mclean n.d) - any possible management of tacit knowledge. Thus, we cannot manage what we do not know. Tangible/explicit knowledge, on the other hand, they explain, is recorded, documented or codified knowledge, widely conveyed through formal language (mostly through printed text or electronically). The manner in which this type of knowledge is processed and presented has made its creation, identification, codification, processing, storage, conveyance and sharing extremely easy, and its popularization overwhelming. However, Nonaka and Takeuchi caution that tangible and intangible knowledge are not entirely two separate entities - they supplement each other. Knowledge, according to the two authors (Nonaka and Takeuchi), is created and extended through the social interaction between tangible and intangible knowledge, and may follow four basic patterns that are already widely known: Firstly, intangible to intangible (socialization) – where individuals share intangible knowledge through personal contact. Secondly, intangible to tangible (externalization) – where the knowledge base is extended by the codification of experience, insight and judgement so that it may be utilized by others. Thirdly, tangible to tangible (combination) – where individuals combine the tangible knowledge of others to create a new whole and lastly, tangible to intangible (internalization) – where individuals use the

codified knowledge of others to broaden their own intangible knowledge(see figure 2) normally moving in a spiral form.

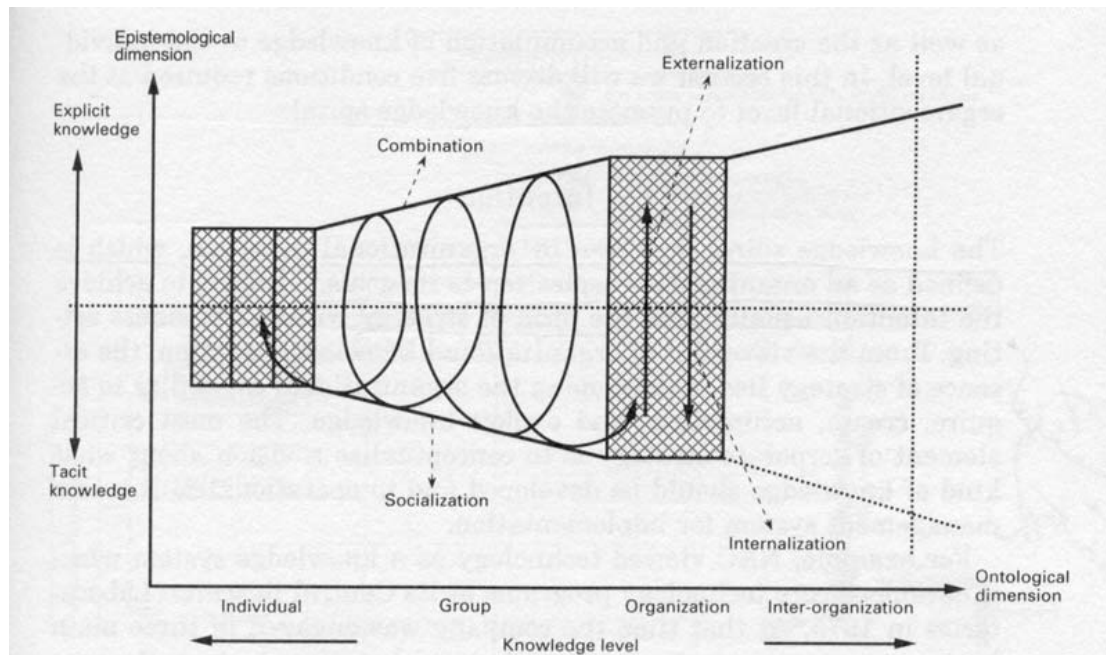


Figure 1. Spiral of organizational knowledge creation (Nonaka and Takeuchi 1995)

2. Understanding information management (IM) and knowledge management (KM)

We have echoed the fact that there are more shared research approaches/methodologies/paradigms, processes, strategies, technologies, content, concepts and know how between KM and IM than can be imagined and that often blurs their distinction (see Onyanha and Ocholla 2009). Even most definitions accorded the two concepts tend to converge rather than diverge. Out of a myriad of definitions of the IM and KM, it is possible to identify the following from the Web: “Knowledge management (KM) comprises a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable adoption of insights and experiences”¹; “The creation, storage and collaborative sharing of employee information within the business environment”²; “The way a company stores, organizes and accesses internal and external information”³, “The process of capturing, organizing, and storing information and experiences of workers and groups within an organization and making it available to others”⁴; “A system or framework for managing the organizational processes that create, store and distribute knowledge, as defined by its collective data, information and body of experience”⁵ and “Managing tacit knowledge (held in an individual's brain in the form of know-how

¹ en.wikipedia.org/wiki/Knowledge_management

² www.geemultimedia.com.au/glossary.asp,

³ ccs.mit.edu/21c/iokey.html

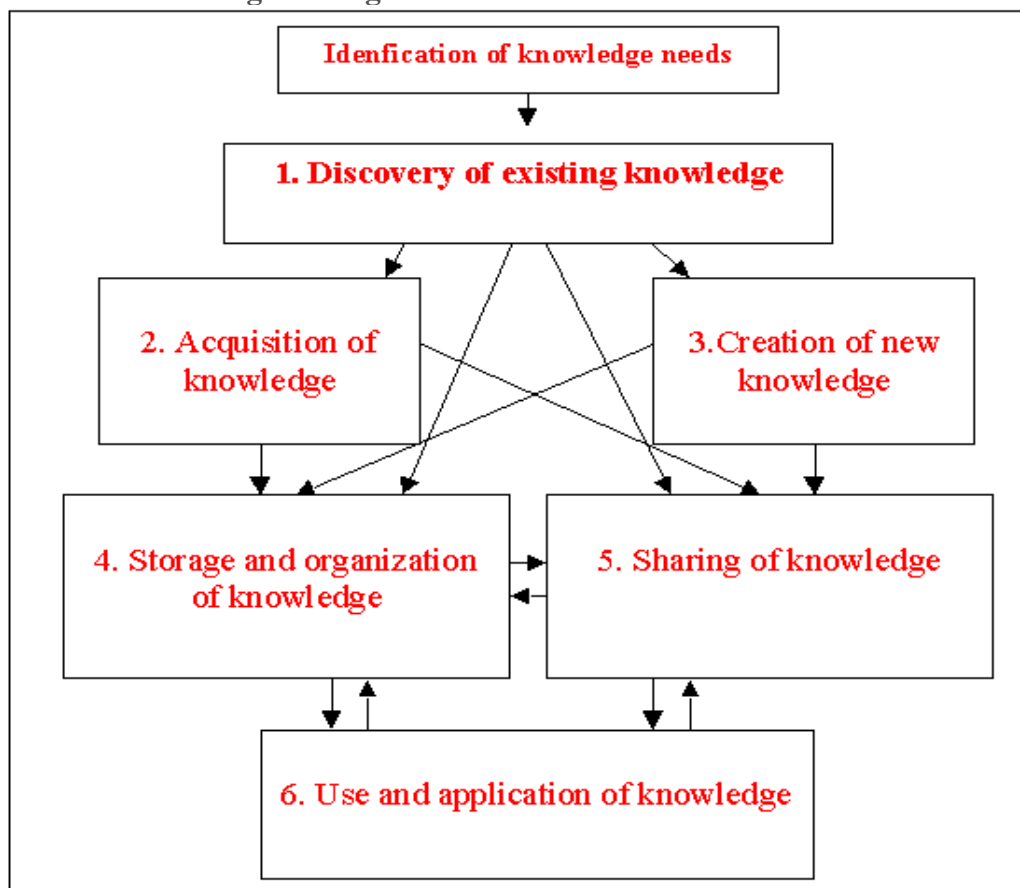
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www3.imperial.ac.uk/ict/services/teachingandresearchservices/elearning/aboutelearning/elearningglossary

⁵ www.bridgefieldgroup.com/bridgefieldgroup/glos5.htm

and experience) and explicit knowledge (recorded independently of humans)⁶”. Let us compare these definitions with those suggested for IM. According to Wikipedia, Information management (IM) is the collection and management of information from one or more sources and the distribution of that information to one or more audiences⁷. The sources referred to here can be physical such as print and/or electronic/digital that is increasingly delivered to multiple users through multiple channels for multiple purposes. I assume that human sources are represented through proxy (explicit knowledge – print or electronic) but not directly as that would mean also tacit knowledge that is beyond the domain of IM per se. Most definitions to IM share the following processes with KM: capture, process, preserve, store and deliver appropriate information to the appropriate recipient/user in an organisation. For example, Choo (1998) Choo, s (1998), process model of IM consists of five steps: identification of information needs, information acquisition, information organisation and storage, information distribution and information use. This compares favourably well with the knowledge management process represented in Table 1.

Table 1: Knowledge Management Process



(<http://informationr.net/ir/8-1/paper141.html>)

The visible omission in IM process that is included in the KM process is “creation of new knowledge”. I find France Bouthillier and Kathleen Shaerer (2002) paper entitled “*Understanding knowledge management and information management:*

⁶ www.curaconsortium.co.uk/glossary.htm

⁷ <http://www.aiim.org/What-is-Information-Management>

retrieval) processes while the resources and systems managed are overwhelmingly IT (conduit, content, networks etc) oriented”. These activities, we noted(in the conclusion), are closely linked to what Skyme (1998) and Gu (2004) suggest KM to be about such as managing information – explicit/recorded knowledge; managing processes –embedded knowledge; managing people – tacit knowledge; managing innovation – knowledge conversion and managing assets – intellectual capital. We notice extensive growth of knowledge management multidisciplinarity with new subject domains, processes, organisations, ICT, emerging suggesting disciplines or subjects that have to be considered in the research and teaching of KM as well as showing a strong link between KM and IM or Information Resource Management (IRM).

Does that make us believe that IM is part of KM and perhaps the latest stage of developments of management in this domain (e.g. Data management - Information Resource Management - Information Management - Knowledge Management) and therefore research and curriculum development in KM must take note of the disciplines in this transition and related areas some of which we (Onyanha and Ocholla 2009) represented?

3. Research and Teaching of information and Knowledge management

Research and teaching are closely linked particularly in Higher Education Institutions. There are three studies that I would like to refer to for discussions on research and teaching of IM and KM in South Africa. The first two referring to research are written by Daisy Jacobs (2004) entitled “*Growth and Development in knowledge Management research: a bibliometric study*” and Bosire Onyanha and Dennis Ocholla (2006) entitled “*Trends and patterns of knowledge management research in South Africa: an informetric analysis of tacit and explicit knowledge management*”

Jacobs(2004) study created a list of most published authors appearing in Social Science Citation Index(SSCI), Science Citation Index(SCI) and ABI between 1994 -2003 – focusing on United States, German, Canada, Australia, Netherlands, France, Denmark, India and South Africa- by the phrase “knowledge management” for searching. She focused on: publishing activity by year; journals, breadth; and most influential authors. She confirmed the multidisciplinary of KM and its origination from organisational science and this also contributed to its theories and practices and that although knowledge management has emerged from organisational science some of the well published authors in the domain are not the most cited that could have something to do with language of publication. Noticeably, 493 KM publications originated from the nine countries during this period with South African contributing 10(2%).

Onyanha and Ocholla’s (2006) study examined the nature, trends and patterns of knowledge management (KM) – including Information Management (IM) – research in South Africa by using descriptive Informetrics, by analyzing IM/KM documents from the Current and Completed Research (C&CR) and the Index to South African Periodicals (ISAP) databases from 1984 -2005. As outlined in the methodology section of this paper(Onyanha and Ocholla 2006), C&CR contains South African research projects covering the social sciences, humanities, economic

and management sciences and includes masters and doctoral theses of South African universities as well as information on research projects from non-governmental organizations, private sector and government departments. ISAP is a bibliographic database owned and produced by the National Library of South Africa. It covers indexed articles from more than 900 South African periodicals. Specialist periodicals are indexed fully, whereas general and popular periodicals are indexed selectively. Two broad phrases “knowledge management” and “information management” were used to search for and download relevant documents both from the C&CR and ISAP. Our focus was on: distribution of records by year of project commencement /completion /publication; sources publishing IM/KM research; institutions behind IM/KM research; growth of IM/KM literature; interdisciplinary scope of IM/KM research; and IM/KM researchers.

This study showed a marked increase of research and publications in the domain since 1984 when it was at its lowest with steady rise from 1994 -2000-2001 and thereafter a fall from 2002 – 2005. This could be caused by information interval in 2005. The top ten journals during this period were Knowledge management(39), Computing SA(31),Convergence : achieving global competitiveness(26),South African Journal of library and Information Science(26), Management today(21), Financial mail(17), Business IT Africa(17), Intelligence(15), People dynamics(14),HR future: South Africa’s independent human resource magazine(13) And Net master Africa(13).It is important to note that apart from SAJLIS(South African Journal of Library and Information Science and Financial mail, the other eight journal records emerged only from 1995 and this could contribute to the relatively low number of publications. Also noted in the study is that management, business administration, computer science-related sources, leads in KM publications as they occupy the first ten positions in the listed journals. Coming to institutions with most KM research output, we note in the 2006 study the following in descending order: University of Johannesburg(then Rand Afrikaans University – 22),University of Pretoria(19). The information schools in those universities were leading research centres. Other (19) non i-schools departments also contributed. IM and KM in this study displayed its multidisciplinary scope by covering such (8) areas such as: Information Science, Business Administration, Computer Science, Public Administration, Library Science, Management, Technology and People with most records in the business and management oriented domains. Most of the 101 researchers involved in KM and IM between 1995 -2005 at the universities were masters students (54), followed by doctoral students (22). We also identified the researchers in the field whose names came more frequently. Among the study leaders(largely M and D supervisors) were: Du Toit ASA(12), Snyman MMM(8),Van Brakel PA(5); Theron JC, De Beer CS, Britz JJ(3) while 2 each for Terblanche F, Ngulube P., Kaniki AM, Dick AL and Cronje JC. Interestingly, further analysis showed that none of them emerged among the top 10 with 4 or more research publications except Du Toit ASA. We concluded that research in IM and KM is increasing and confirmed the multidisciplinary of the field. We cautioned that popularisation of KM would be essential for its growth; T&D is digitised and placed in the public domain – something that is already occurring as most universities in South Africa have Institutional repositories for thesis and dissertations (see.

<http://www.opendoar.org/countrylist.php>)

A more recent study using the same databases but covering 2006 and 2010 confirms most of what Onyanha and Ocholla (2006) study revealed as reflected in the figures

below. Data based on E-Publications data base hosted by SABINET that indexes electronic peer refereed journals based in South Africa revealed (see table 2)

SA e-Publications KM 2006-2010

JOURNALS	2006	2007	2008	2009	2010	TOTAL
SAJIM	4	2	3	2	2	13
SAJLIS		1	1	1	1	4
Indilinga		1		1		2
Acta Commercii	1					1
Acta Structilia				1		1
Communicatio	1					1
J of Contemporary Management			1			1
Mousaion			1			1
New Voices in Psychology	1					1
SA Journal of Education					1	1
Grand Total	7	4	6	5	4	26

SA e-Publications IM 2006-2010

JOURNALS	2006	2007	2008	2010	TOTAL
SAJIM	2	1	2		5
SAJLIS				2	2
Grand Total	2	1	2	2	7

The list of authors of articles/papers appearing in e – publications database from 2006 - 2010 was created alphabetically for sorting out in order to determine the frequency of each author's contribution. A total of 43 authors were retrieved. The display on table 4 represents the list based on whole count.

Table 4. KM Research by Authors 2006-2010 in e- Publications

Author	NO	Author	No
Ngulube, Patrick	3	Mearns, M.A.	1
Snyman, M.M.M.	3	Miruka, Collins Ogutu	1
Boon, J.A.;	2	Misch, A.;	1
Kruger, C.J.	2	Moloi, Kholeka , C.	1
Lwoga, Edda	2	Mostert, J.C.;	1
Lwoga, Edda T.;	2	Mpofu, Dephin;	1
Pellissier, R.	2	Mutula, Stephen	1
Averweg, U.R.	1	Noeth, Andries J.	1
Barker, Rachel	1	Ocholla, D.N.	1
Bopape, Solomon	1	Ondari-Okemwa, Ezra;	1
Bothma, T.J.D.	1	Onyancha, O.B.;	1
Cloete, Fanie	1	Phillips, A.R.;	1
Du Plessis, M.	1	Schutte, M.;	1
Fombad, M.C.;	1	Smith, Janet Gretchen	1
Fresen, J.W.	1	Stilwell, Christine	1
Gaffoor, Shamin;	1	Taiwo, Adekunle	1
Kok, J.A.	1	Talukhaba, Alfred;	1
Magenuka, T	1	Tobin, P.K.J.	1
Maponya, Pearl M.;	1	Tobin, P.K.J.;	1

Index to South African Periodicals database was used to retrieve journals that publish papers on IM and/or KM. A total of 140 journals were retrieved. Eighty published IM articles while 60 published KM articles. The number of journals publishing both IM and KM articles was insignificant. For example, out of the top journals that published 2 or more articles during this period only CEO and SAJLIS published both IM and KM papers. We noted a strong demarcation of journals between IM and KM suggesting that separation between the two concepts is still common even at the indexing stage (Table 5).

Table 5. Representation of IM and KM in ISAP 2006 -2010

IM - ISAP 2006-2010 (N=80)

JOURNAL NAME	2006	2007	2008	2009	2006/7	TOTAL
Convergence	7	5				12
Computer business review		8			2	10
IT Web brainstorm		1	6			7
CEO	1	1	1			3
Computer business review Africa	3					3
Computing SA	1	2				3
Business Brief		1	1			2
Esarbica journal	2					2
Farmer's weekly	1		1			2
HR future				2		2
SA computer magazine	2					2
SAJLIS				2		2

KM - ISAP 2006-2010 (N= 60)

JOURNAL NAME	2006	2007	2008	2009	2010	TOTAL
Service delivery review	3	5				8
SAJLIS		2	2	2		6
Convergence	2	3				5
CEO	1	1	1			3
Management today	1	1	1			3
Mousaion	1			2		3
Science Scope	1	1	1			3
Engineering news			1	1		2
HR future			2			2
SA journal of business management		1	1			2
SA journal of higher education	1	1				2
SA journal of industrial engineering	2					2

Current and completed research database, also hosted by SABINET, was used to identify Institutions that graduate KM students, in what qualifications, in what quantity during 2005- 2009. Sixty eight students received their masters (53) and doctorate (15) qualifications during this period. University of Stellenbosch (22) and Nelson Mandela Metropolitan University - NMMU (17) were leading with a variety of Masters level qualifications (4) offered by NMMU. University of Johannesburg (5), Pretoria (4) and UCT (3) are leading in terms of doctorate degree qualifications

output. These data suggests that capacity building in terms of KM is in progress and slightly over 50% of public universities in South Africa have KM research capacity. Also nine of the universities have i-school or department.

Table 6: Current and Completed Research on KM by South African Universities 2006 -2009

University	2006	2007	2008	2009	Grand Total
Nelson Mandela Metropolitan University	3	8	6		17
DTech	1		1		2
MA			1		1
MBIS	1	2			3
MSc		1	1		2
MTech	1	5	3		9
Stellenbosch University	10	11	1		22
MPhil	10	11	1		22
Tshwane University of Technology		1			1
MTech		1			1
University of Cape Town	2	1			3
PhD	2	1			3
University of Fort Hare		1			1
MA		1			1
University of Johannesburg	4		2	1	7
DLitt et Phil	1		1		2
DPhil	2				2
MA	1		1		2
PhD				1	1
University of KwaZulu-Natal	2	4			6
MCom	1	1			2
MED	1				1
MIS		2			2
MSc		1			1
University of Pretoria		4	2		6
DPhil		2	1		3
MIS		2			2
PhD			1		1
University of South Africa		2			2
MA		1			1
MI		1			1
University of the Western Cape	1				1
MBibl	1				1
University of the Witwatersrand		1			1
MM		1			1
University of Zululand		1			1
PhD		1			1
Grand Total	22	34	11	1	68

Teaching and Curriculum Development

Teaching and curriculum development also draws great interest. One important and relevant study worth noting written by Ezra Okemwa and Mabel Minishi-Majanja(2007) is entitled” Knowledge Management Education in the department of Library/Information Science in South” in which they focused on the role of LIS schools in South African universities s in KM education and competencies. In this study a questionnaire was emailed to 13 LIS schools in South Africa and responses received from nine (69%).It occurred that only 7 of the LIS Departments offer KM subjects with marked differences. The choice of what to teach is changing, they note, but could be limited to expertise available on the ground that would limit quality and relevance. The multidisciplinary nature of KM and the swift of job market for LIS graduates to it are recognised. The study found that all the respondents acknowledge that KM is important and should make part of a LIS programme as more jobs in both the public and private sector increasingly advertise KM positions and need knowledge managers who would manage their corporate tacit and explicit knowledge. This study, further established that all the respondents were interested in KM being a LI/S component however, notes, the authors, ‘there is marked differences in the scope, level and stages’ of KM offerings. They noted that the offering of KM by other disciplines is quite exclusive, often emphasising only one or narrow aspect such ICT or people or business at the expense of a holistic approach that would include all the KM components, strategies and processes. The problem, with knowledge management teaching, they cite some respondents, is lack of management competency for teaching KM among those who offer it. The study identified several (9) undergraduate and postgraduate (9) level qualification ranging from LIS to management to business/commerce qualifications that look quite rich in terms of variety. A variety of additional modules/courses that are not currently being offered were suggested (Okemwa and Majanja 2007: 143) that are worth considering. Despite the possibility of lack of KM expertise, while indicating their strengths “many respondents pointed out the quality of their academic staff” in L/IS departments, none of of them uses external staff. This study has recognised the number of on going research projects in the domain particularly at the UP, UNISA, UCT, UJ, UZ and UKZN largely for M and D qualifications that is encouraging.

4. Challenges and opportunities of KM Research and Education

Knowledge management and information management research and education in South Africa are developing quite fast. But there are still challenges to be overcome. Among the challenges are:

Research.

Studies by Jacobs(2004), Onyanha and Ocholla(2006) and Onyanha and Ocholla(2009) offer a strong starting point for mapping and auditing research activities in this field. The studies have enabled knowledge of the quantity and quality of research going on in the domain for possible intervention. For example, we have observed through these studies that most of the top academics in KM in the country are about to retire, no longer conducting research in KM or have retired. We do not see through the lens of ‘Informetrics radar’ emerging researchers to replace the old guards as reflected on Table 6. Therefore research capacity building and retention of the newly qualified graduates in the academia is a major challenge. In other words, there should be a pro-active succession plan underway in i-Schools.

Curriculum Development and KM education.

I found the study conducted by Okemwa and Majanja (2006) insightful as it addresses fundamental issues relating to KM and IM education in South Africa. Among the challenges they raise in their study that most of us experience is the lack of preparedness of students to learn KM at undergraduate level. This means that basic or fundamental management courses must be taught or made prerequisite before students graduate to learning core KM courses. Secondly, the issue of KM faculty/lecturers came out to be an issue that is challenging. There are contradicting opinions on whether we do have sufficient KM teaching capacity or not? What I do know is that i-schools always complain of lacking qualified teaching staff for their qualification programmes and KM is not excluded. Lack of qualified teaching staff, preferably those with management academic background, could have contributed to different scope, depth, stages and levels of offer age as well as absence of KM some i-schools in the country as observed in Okemwa and Majanja's study. There are instances where KM and its related courses have stalled because of lack of teaching staff. We do have though, quite sound KM teaching environments in South Africa largely within L/IS schools in large cities as they can augment their KM teaching with relevant specialist from the industry. Our challenge still lies in planning for staffing that also include capacity building. I also wonder if allowing or enabling non L/IS staff from other departments within our universities to support our teaching would cause any harm. I do know though, is that interdisciplinary or interdepartmental teaching can be quite daunting even when there is proper policy in place.

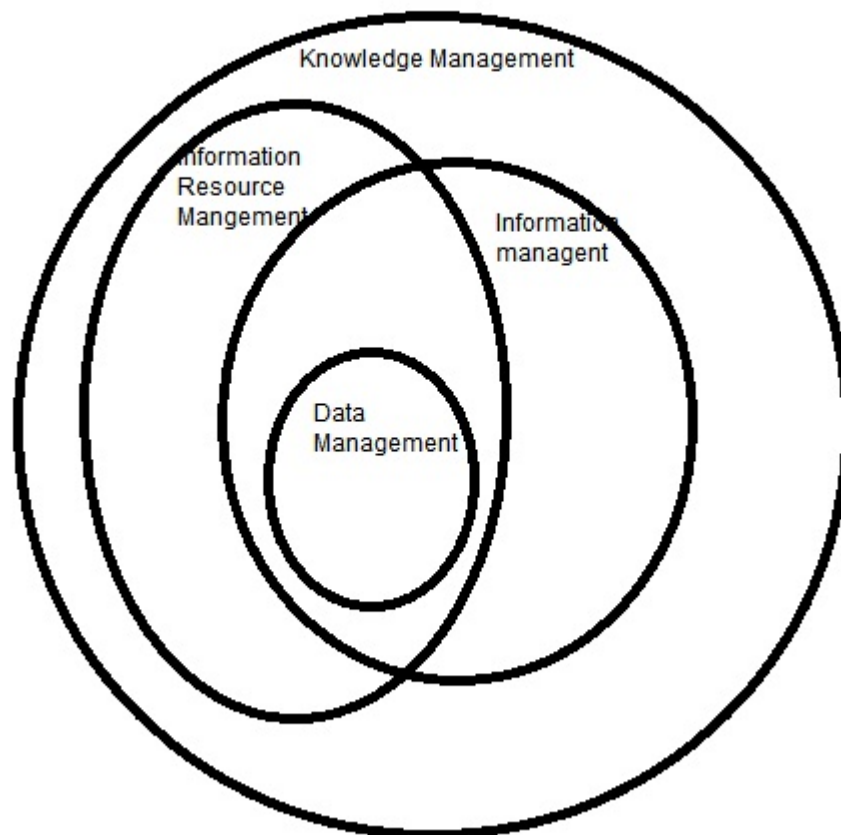
Opportunities

Basing my observation from the quantity of research in KM as reflected in most international databases such as WoS (SCI, SSCI and AHCI), Scopus and Google Scholar and local databases such SABINET hosted ISAP, C&CR and UT7Ds that I alluded to earlier as well as its presence in the curriculum of i-schools and management/business schools, I believe that KM is one of the most popularised discipline and research field in i-schools and management schools in the world. This enables research, networking, collaboration, sharing and capacity building to take place if/when we tap into that stream of academic and social network. For example, even in South Africa, there are already many qualifications programmes (Okemwa and Majanja) being offered in the field, the number of quality scholarly journals in the domain is growing and there is a cohort of admirably strong academics/faculty teaching and conducting research in this area globally and also in South Africa as identified in Jacobs (2004) and Ocholla and Onyanha (2005) study. There is also strong evidence of the growth of the discipline into a formidable multidisciplinary field (Onyanha and Ocholla 2009). We have observed in recent years that KM jobs are increasing among the jobs that are advertised in South Africa newspapers (Ndwandwe and Onyanha 2011). Such jobs increasingly demonstrate the multidisciplinary nature of KM that brings on board information, management, ICT, business, librarianship, computer science and communication and media knowledge and skills.

Earlier studies (e.g. Onyanha and Ocholla 2005) recommended the development of repositories for thesis and dissertations in South Africa to extend the KM management research visibility and access. It is admirable that 'dream' has come true as most South African Universities have created institutional repositories (see Ocholla 2010). For instance, at the moment, South Africa has 14 out of 22 Institutional Repositories in Africa majority of them based within its universities. Research thesis and dissertations constitute the largest collection.

Conclusions

Discourse on the relationship between data, information, knowledge and wisdom on one hand and information management and knowledge management on the other hand are healthy if they help to create and develop the understanding of how interdependent they are. Knowledge management should be seen to be an extension of IM or information resource management in space and time. A model that provides better understanding of the relationship between KM, IM, IRM and DM can be proposed as reflected in Figure 3. Other KM sub –fields such records management would form part of the broader KM field.



More work need to be done to address the challenges and opportunities of - some of which are highlighted - information management and knowledge management teaching and research.

References

- Bell, D. 1973. *The coming of post-industrial society: A venture in social forecasting*. New York: Basic Books.
- Bouthillier, France and Shearer, Kathleen (2002), Understanding knowledge Management and information management: the need for an empirical perspective. *Information Research*, Vol. 8 No. 1. Available: <http://informationr.net/ir/8-1/paper141.html>. Retrieved: 28 February 2011
- Choo, C.W.(1998) *The knowing organization: how organizations use information to*

- construct meaning, create knowledge, and make decisions. New York: Oxford University Press
- Davenport, T. and Prusak, L. (1998) *Working knowledge: how organisations manage what they know*, Cambridge, MA: Harvard Business School Press
- Gu, Y. (2004) *Global knowledge management research: a bibliometric analysis*, *Scientometrics* 61(2), 171-190
- Jacobs, Daisy (2004) *Growth and Development in knowledge management research: a bibliometric study*, proceedings of the 3rd biennial DISSAnet Conference, Pretoria, Infuse, Pretoria, October, 2004, 211-220
- McLean Laird D. (N.D), *A review and critique of nonaka and takeuchi's theory of organizational knowledge creation*. Minnesota, University of Minnesota. Available:
<http://mcleanglobal.com/public/MGC/publications/Nonaka%20and%20Takeuchi.pdf> .Retrieved: 6 March 2011
- Ndwandwe, Siphon C., and Onyanacha Omwoyo, B.(2011), *Job functions and requirements for knowledge managers : lessons for LIS schools in South Africa*. In Proceedings of ProLISSA Conference, 6th Biennial DISSAnet Conference, Pretoria, 9 -11 March 2011(in CD)
- Nonaka, I. and Takeuchi, H.(1995) *The knowledge creating company: how Japanese companies create the dynamics of innovation*. New York: oxford University Press.
- Okemwa, Ezra Ondari and Majanja, Mabel KM(2007) *Knowledge Management education in the departments of Library/Information Science in South Africa*. *South African Journal of Libraries and Information Science*, Vol.73(2),136-146
- Ocholla, Dennis N(2011), *What are the issues, challenges and opportunities of e-scholarship in Africa?*(in Press, *African Journal of Libraries, Archives and Information Science*)
- Onyanacha, O. Bosire and Ocholla, Dennis N. (2009), *Conceptualising 'Knowledge Management' in the context of library and information science using the core/periphery model*. *South African Journal of Information Management*, Vol. 11, No.4,
- Onyanacha, O.B. and Ocholla, D.N.(2006), *Trends and patterns of knowledge management research in South Africa: an informetric analysis of tacit and explicit knowledge management*, in XVII Standing Conference of Eastern, Central and Southern Africa Library and Information Association, 337-361(The Library and Information Association of Tanzania, Dar es Salaam)
- Skyme, D.J. (1998) *Beneath the fad: the future of Knowledge Management*. Available: <http://www.skyme.com/updates/u20.htm> , Retrieved: 5 March 2011
- Polanyi, M. (1992) *Personal knowledge*. Chicago, IL.: University of Chicago Press