2010

Knowledge Management Maturity According To Organizational Size: A South African Perspective

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Journal:	*18th European Conference on Information Systems*
Manuscript ID:	ECIS2010-0051.R1
Submission Type:	Research Paper
Keyword:	Knowledge management, Management roles, Information technology acceptance, Implementation politics

KNOWLEDGE MANAGEMENT MATURITY ACCORDING TO ORGANIZATIONAL SIZE: A SOUTH AFRICAN PERSPECTIVE

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Abstract

The Literature suggests that Knowledge Management (KM) might be doomed to failure. This perception is primarily built on the notion that KM is a fallacy and nothing more than Information Management (IM) while suggesting that there is only lip service for KM but no real support. Defenders of KM's value tend to mislead by reporting only world-class practices in world-class organizations. To date, few studies have focused on how embedded KM is in the roots of an organization. Specifically, not much is known whether employees and managers hold similar perceptions regarding KM, or if organizational size plays a role in the establishment of KM maturity. This article addresses these research questions by examining the KM maturity of 86 South African based organizations within nine industry groupings. From a large urban South African University engaged in numerous collaboration programs with industry, the authors gained insight into KM maturity in different industry groupings over a five-year period by applying an inventory developed by Kruger and Snyman (2007). In total, 434 employees were interviewed over three grouping levels (operational, middle and senior management). This was achieved by getting 178 senior practitioners to each interview three individuals in each company (one individual at each level). The resulting findings support Moffet and McAdam's (2006) argument that irrespective of organizational size, knowledge-orientated issues are applicable to all organizations. With significant differences in scores recorded over all maturity sections in South Africa, findings indicated that different sized organizations address knowledge-orientated issues differently. This challenges the Moffet and McAdam (2006) argument that the manner in which knowledge-orientated issues are addressed differ only slightly depending on organizational size. Smaller sized organizations prefer a more personal approach, while larger sized organizations prefer knowledge transfer via technology.

Keywords: Knowledge Management, Knowledge Management Maturity, Organizational Size, Managerial Levels.

1 INTRODUCTION

In reflecting on the concept of "knowledge management," Wilson (2002) argues that knowledge management (KM) means different things to different companies and that some companies that tried KM have moved on to other things. Wilson (2002) is of the opinion that even though consultation companies claim that organizations are flocking to KM, studies conducted by Bain and Company (2001) indicated that about 35% of their world-wide sample of 451 companies were using KM, and reported a satisfaction rating of about 3.5 on a five-point scale. According to Wilson (2002), this puts KM in 19th position out of 25 management tools, compared to almost 80% of organizations using Strategic Planning, about 70% using Benchmarking and 35% using KM. Wilson (2002) therefore concludes that analysis of KM is to a large extent, a management fad, promulgated primarily by consultancy companies. This according to Nasir (2003) resulted in practically every organization buying into the KM phenomenon, many not realizing that KM requires considerable planning and change management, which resulted in their endeavors failing dreadfully. Reservations regarding KM's value are shared by authors such as Kazimi, Dasgupta and Natarajan, (2004). These authors argue that without substantial proof that KM adds profound value to organizations, the importance and sufficient commitment needed to embark on KM will continue to be underplayed.

Davenport and Grover (2001) argue that at some point every industry will view itself as knowledge-intensive and will adopt KM approaches in virtually every business unit and function. They go on to state that the focus must shift to all workers and not only those whose role is primarily KM. In studying KM in a multicultural environment, King, Kruger and Pretorius (2007) found that most respondents who have three or fewer years of experience at an organization are more likely to feel that the organization has a corporate culture that encourages knowledge sharing. However, this feeling decreases with individuals who have four and seven years' experience in the organization. According to King, Kruger and Pretorius (2007), the reason this value decreases could be the result of inexperience and/or competition for promotion. These authors argue that this contention is supported by the fact that individuals who have eight or more years of experience feel more secure in their jobs, agreeing more that organizational culture is supportive of KM. King, Kruger and Pretorius (2007) therefore proposed that experience is the biggest factor related to the frequency of respondents feeling they could benefit from a KM system. Specifically, they found that senior managers are the most likely to agree that the organization would benefit from KM.

1.1 Literature review

Organizations have a multitude of factors to take into account before embarking on a KM initiative (King, Kruger and Pretorius, 2007). Business Strategy, Leadership, Culture, Senior Management Support and Structure are all critical factors to the success of KM according to Hasanali (2002) plus Snyman and Kruger (2004). Establishing KM success is by no means straightforward. However, of all factors critical to KM, Culture is frequently recognized as the key 'make-or-break factor' (Damodaran & Olphert, 2000; Ribiere & Sitar, 2003). Named as the biggest barrier to KM success by 37.8% of respondents in a survey by KM Review (2001), Culture is by no means a minor issue and demands concentrated attention from management practitioners (King, Kruger and Pretorius, 2007). Cultural issues alone are reason enough for an organization to throw in the towel before it has even embarked upon KM endeavors. Ideally an organization's knowledge-sharing culture is embedded in the roots of an organization, instilling within employees a perception that behavior derived from core values is natural and to be taken for granted, instead of it being yet another compulsory action enforced by top management.

In focusing attention too strongly on Culture, attention is often drawn away from the most determining factor in KM's survival, which is the acceptance and use by industry (Wilson, 2002). Beijerse (2000) argued that for KM to reach any level of acceptance, more comprehensive studies in organizations of different sizes and types were drastically needed. Only a small number of studies focused on how embedded KM is in organizations since 2000, and if organizational size plays a significant role in establishing KM maturity. Moffet and McAdam (2006, p. 221) allude to this fact and argue that there is only "a paucity of study that empirically studies the effects of

organizational size on the key factors of KM." These authors also contest that, "the majority of studies, in common with other emergent business philosophies, are focused on larger organizations where, for example, readily available implementation resources are an underlying assumption." Sanghani (2008) in a similar manner argues that not much is known regarding KM in small and Medium-sized organizations. According to Sanghani (2008), this is primarily due to new management philosophy and technology first being implemented in Large organizations and KM is no exception in this regard. Much of the seminal work on KM therefore features large multinational companies. Serenko, Bontis and Hardie (2007, p. 610), in building on earlier works of Bontis (1999, 2001), argue that human capital is at the core of any knowledge-based enterprise and come to a similar conclusion pointing out that, "Much of the extant KM/IC literature is too general when it comes to describe the organization in which these new efficiencies have a high probability of success." These same authors' caution, "All organizations are not created equal. One of the biggest glaring differences is their size." Sanghani (2008) states that research on the topic of organizational size and KM maturity are also inundated with conflicting opinions and findings. From the perspective of research design, and especially in the context of knowledge sharing, it is usually cumbersome to treat the organization as unit of analysis. Doing so disregards knowledge sharing practices within departments/business units/working groups, etc. For example, consider a large, multi-divisional organization. The multi-divisional form enables the organization to engage in completely different markets/products, without the need for much coordination (and knowledge sharing) between its divisions. Hence while this might be classified as a large (or even very large) organization, really these are separate entities that just happen to have an organizational name in common. The same applies to organizations which are really just shareholding collectives. Clearly knowledge management practice investigations in such large organizations should be focused at the division/business unit, and not the organization as a whole. Therefore, the theoretical relevance of studying the link between organizational size and knowledge management practice remains problematic.To date research has shown that:

- As a result of changes in social interactions, there is a negative relationship between organizational size and knowledge sharing (Connelly and Kelloway, 2003),
- As the size of an organization unit increases, the effectiveness of internal knowledge flows dramatically diminishes while the degree of intra-organizational knowledge sharing decreases (Serenko, Bontis and Hardie, 2007)",
- While many knowledge-orientated issues are applicable to all organizations, the manners in which they are addressed differ slightly depending on organizational size (Moffet and McAdam, 2006, p. 221), and,
- Organizational size does not have any effect on the initiation and use behavior of KM systems (Xu and Quaddus, 2007).

The intent of this article is to move past theoretical propositions and investigate KM maturity, from within a more holistic perspective, in different organizational groupings. The contribution of this paper is to address the research questions that follow:

- What role does organization size play in the establishment of KM maturity? and,
- How do the different managerial levels view their organizations KM maturity?

1.2 Methodology and Data Collection

Observations of the South African business environment indicate a growing awareness and adoption of knowledge-based strategies and KM practices (Botha and Fouche, 2002). From a large urban South African University engaged in numerous collaboration programs with industry, the authors gained insight into KM in South African industry groupings over a five year period. Challenged to amalgamate Western cultures with African cultures, the South African environment portrays a model for businesses of a future full of continued change, diversity and even elements of silent intolerance and conflict (Finestone and Snyman, 2005). Deep-rooted political and social requirements to integrate cultures, not in a manner where one culture dominates while others become extinct over time (Prime, 1999), make the South African environment unique in many aspects (King, Kruger and Pretorius, 2007).

South Africa has been challenged to make the transition into the global economy while managing the vast diversity of its people (Prime, 1999). South Africa has past political history that this paper will not discuss in detail, except for a few factors believed to directly effect KM maturity. One of these factors is the policy of affirmative action. Affirmative action has the potential of empowering one group over the sanctioning of another which influences job security and consequently leading to an unwillingness of people to share knowledge (Finestone & Snyman, 2005).

Another barrier to KM in the South African context is the issue of language. People are reluctant to share knowledge if they cannot understand concepts or find it difficult to convey their message. Language problems in South Africa are heightened by nine ethnicities, each with its own communities, cultural languages and parlance (Prime, 1999). Communication, which is a major element of knowledge-sharing and the vesting of KM maturity, is often severely hampered when having to deal with 11 official languages. Different communication styles are more prevalent in different cultures. White South Africans predominantly adhere to Western Culture preferring an explicit style of communication such as written commitments (i.e., contracts), as the main indication of trust. In contrast, Black African cultures are more implicit in their manner of communication where oral communication is preferred. (King, Kruger & Pretorius 2007)

Strongly linked to the previous point, is the way South African organizations are managed. According to Prime (1999), in other multicultural countries, one culture typically dominates while others co-exist. South Africa is differentiated by the influx of different cultural pressures that need to be integrated if businesses want to compete in the global economy. South Africa is unique because of its social, political and economic history. In contrast to other culturally diverse countries, South Africa aims to create a unified culture wherein European, African and Asian cultures must fuse (Finestone and Snyman, 2005).

In this extremely diversified setting, the authors applied the questionnaire developed by Kruger and Snyman (2007) to a set of 86 organizations. The questionnaire appealed to the researchers primarily because it is build upon the proposition that for KM to be of value, it must progress (mature) to the point where knowledge is seen as a strategic resource with Information and Communication Technologies (ICT) and IM as enablers to KM. In this context, Kruger and Snyman (2007) support the argument made by Grey (1998) and define the difference between knowledge and IM as IM working with objects (i.e., data or information) whereas KM is concerned about working with people. Emphasis was not placed on achieving total representation in determining a 'usable population' (population size that is applicable to both Secondary Data Analysis [performance assessment] and evaluative [KM Maturity assessment and performance assessment] research), but rather on purposefully selecting a usable and obtainable population for comparative purposes. Strongly guided by the classification index supplied by the Johannesburg Stock Exchange (JSE) handbook July-December 2005 (Profile's Stock Exchange Handbook, 2005), organizations of similar size and similar operations were purposely selected and grouped together for the research to be undertaken. As it would be difficult for personal knowledge sharing to flourish, given issues such as language differences, time zones, geographical dispersion and cultural differences within the organization , care was taken not to include large, global organizations or diversified organizations that engage in a number of different markets or products.

Due to organizational sensitivity and confidentiality plus availability of information, preliminary research attempts showed an unwillingness of organizations to participate in the intended research. This problem was overcome by incorporating a research component into the curriculum of Master in Business Administration (MBA), Master in Information Technology (MIT) and Master in Commerce (MCom) students of a large urban university in South Africa. Since most of these students were active practitioners (97%), and considered "senior" with regard to academic achievement as well as work experience, they became suitable surrogates to participate in the research project. (This research study involving human subjects was approved by an Ethics Committee of the same university).

After numerous lectures and discussions dealing with data, information, knowledge, and KM, senior practitioners used the KM Maturity Assessment Questionnaire (KMMAQ) by Kruger & Snyman (2007) to critically evaluate the KM Maturity of their own organization or one with which they were deeply familiar. To minimize bias due to self reporting, subjects were instructed on the need for objectivity through group and one-on-one discussions as well as debriefing individually when questions arose. Only volunteering practitioners (and organizations) were allowed to participate in the study. In total 178 senior practitioners from nine industry groupings participated in the research conducting three structured interviews per practitioner. In order to sample each of the managerial levels, practitioners were instructed to conduct structured interviews among strategic, middle/management as well as operational personnel in their respective organizations.

The study sample consisted of 434 employees from 86 South African based organizations. Due to the diversity of organizations participating in the study, the sample population included individuals from diverse backgrounds and cultures. The sample chosen was therefore representative of the managerial levels present in organizations (operational personnel totaled 143, middle management 158 and senior management 133). Data collected by means of the structured KMMAQ was digitalized through keyboard entry and transferred to a rating system. In order to ensure a clean and error-free data set, the process of data capture was closely monitored to ensure as few errors as possible. Newly imported data was checked for capturing errors via standard validation checks as applied by the University. Checks included frequencies, maximum, minimum, range and checks for missing values. All statistical calculations were verified by the Bureau for Statistical and Survey Methodology (Statomet). Statomet is a facility that focuses on the scientific design and management of research. Statomet provides statistical advice on all aspects of research design and management, and aims to improve the quality of research by rendering a multidisciplinary service to public and private organizations.

After the verification process had been completed, all data collected was carefully prepared for tabular and graphic presentation, analysis and interpretation. The computer software used for analysis and modeling was SAS version 8.3, from the SAS Institute™. All graphs and figures were created using Microsoft Excel (2007). The analysis that follows consists of the descriptive statistics used for each question. Descriptive statistics involved arranging, summarizing and presenting the data in such a way that the meaningful essentials of the data could be extracted and interpreted easily. Statistics used established the basic statistical measures of the response variable for every question covering aspects pertaining to ICT and IM. Unless specifically stated, in all instances findings are elaborated upon from a positive affirmation “yes, definitely” and “yes, but not significantly.” Where the probability of exceeding the norm (p-value) was found to be less than 0.05, the decision rule was to reject the null hypothesis at a 5% level of significance.

Note: Although the questionnaire by Kruger and Snyman (2007) address the total spectrum of KM maturity, this article only focuses on the role organization size play in the establishment of KM maturity and, how do the different managerial levels view their organizations KM maturity. (Full details of all statistical analysis done as well as a summary of all results obtained are on request, available from the authors).

2 DISCUSSION, RESULTS & FINDINGS

2.1 Knowledge Management Maturity by Organizational Size

In order to determine if organizational size plays a role in KM, it was decided to group participating organizations into four (4) categories. Organizations with 100 and less employees were grouped into the “small organization” category. Organizations with between 101 and 2000 employees were grouped into “Medium-sized” organizations, 2001 to 25,000 employees into “Large organizations” and organizations of above 25,000 grouped into “Extra-Large organizations”). The selection of organizational sizes led to a fairly even distribution of the total population under research (Table 1 and Figure 1).

Category (Number of Employees)	Organizations per Category	Percentage
Small (1-100)	21	24.42
Medium (101 – 2000)	24	27.90
Large (2001 – 25,000)	21	24.42
Extra-Large (25,001 +)	20	23.26

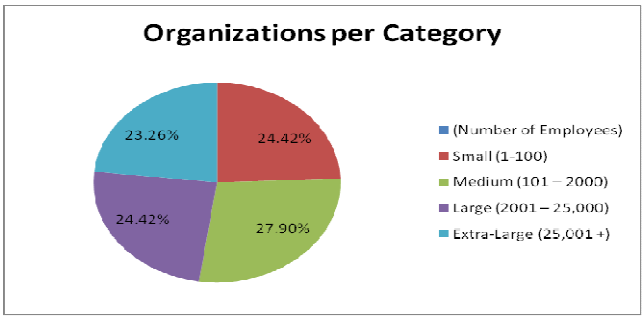

Table 1: Number of Organizations and Figure 1: Organizational Category

In using the KMMAQ proposed by Kruger and Snyman (2007), an overall KM maturity score could be calculated for all participating organizations. Total score achieved was calculated by adding the scores achieved in each maturity section together. These sections included 20 points for ICT as an Enabler of KM, 76 points for IM as an Enabler of KM, 88 points for the successful identification of KM Issues, Policies and Strategies, 94 points for Implementation of KM, 76 points for Ubiquitous Knowledge (extending KM beyond the borders of the organization), and 4 points for Growth in KM (over the past 5 years). Different maturity sections contributed different weights to the overall maturity score achieved. The total score achieved per organization, organizational grouping or organizational size was therefore calculated by dividing the total score achieved by the total score achievable (358). The average KM maturity score obtained by all 86 participating organizations totaled 175.36 points, or 48.98%. With regard to growth in KM maturity, slightly more than twenty percent (20.28%) of interviewees indicated that their organizations experienced rapid growth in KM maturity over the past five years (2003-2007), 52.12% are of the opinion that although growth occurred it was not significant, and 22.17% state that although no growth took place there will probably be growth within the next five years. Slightly more than five percent (5.43%) were of the opinion that a decline in KM growth occurred over the past five years (Table 2, Figure 2).

Note: Full details of all statistical analysis done as well as a summary of all results obtained are on request, available from the authors.

Variable	N	Mean %	Min	Max	Possible
Section 1: **ICT Management**	433	73.60	2	20	20
Section 2: **Information Management**	434	61.14	8	76	76
Section 3: **KM Issues Policies & Strategy**	434	51.75	0	88	88
Section 4: **Implementation of KM**	433	46.50	9	90	94
Section 5: **Ubiquitous Knowledge**	434	30.27	0	76	76
Section 6: **KM Growth over past 5 yrs.**	424	51.88	0	4	4
TOTAL	434		47	311	358

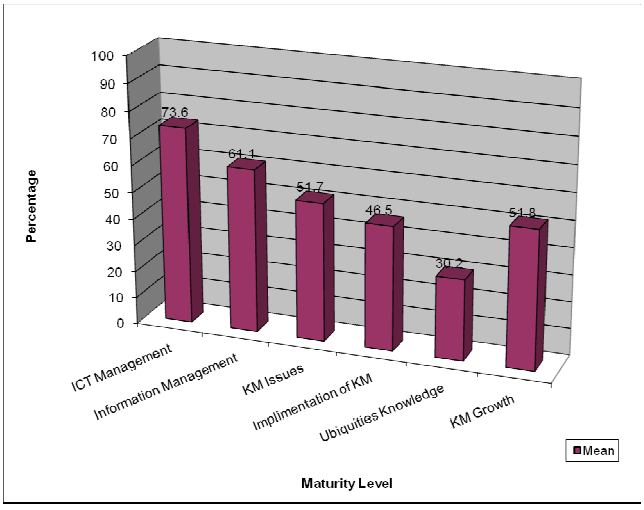

Table 2 and Figure 2: Knowledge management maturity distribution all questionnaires

In grouping organizations according to size, Small organizations achieved an average KM maturity of 43.51% (155.76/358), while organizations with between 101 and 2,000 employees (Medium-sized organizations)

averaged 50.03%. Large organizations (between 2,001- 25,000 employees) scored a bit lower than Medium-sized organizations with 48.87% average. Organizations with more than 25,000 employees (Extra-Large organizations) consistently outperformed all other organizations, scoring on average 53.75% (Table 3 and Figure 3).

	Section 1: ICT	Section 2: Information	Section 3: Issues policies	Section 4: Implementation	Section 5: Ubiquitous	Section 6: Growth	TOTAL
Small	65.38%	55.59%	46.81%	42.87%	22.66%	43.68%	43.51%
Medium	73.91%	62.78%	53.47%	47.80%	29.53%	55.24%	50.03%
Large	76.01%	59.75%	50.38%	45.40%	33.39%	51.78%	48.87%
Ex Large	79.10%	66.71%	56.58%	50.04%	36.29%	56.25%	53.75%

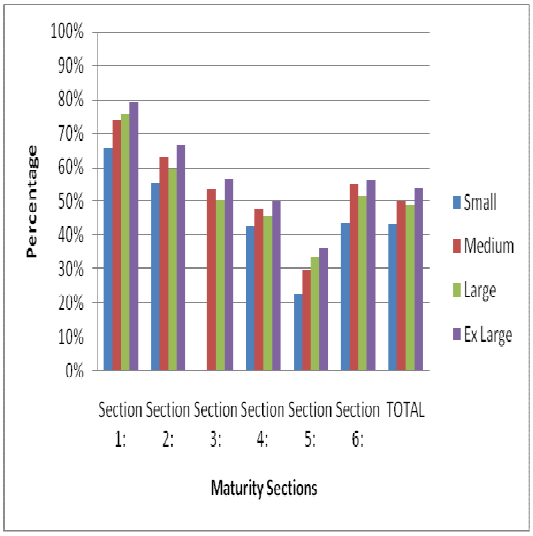

Table 3 and Figure 3: Knowledge management maturity distribution organizational size

An analysis of variance (ANOVA) with p Values < .0001 (Ho: means of different company sizes are the same. Ha: same means differ), indicated that there is a significant difference between the mean scores achieved in different organizations based on size. Multiple comparisons (Least Squares Means) identified that the biggest differences occurred between Small and all other organization sizes. Medium-sized organizations achieved similar scores (= or less than 5%) to Large and Extra-Large organizations, except for maturity Section 1 (ICT) and Section 5 (Ubiquitous Knowledge) where the mean scores of Medium-sized organizations were significantly lower (more than 5% lower), than the scores of Extra-Large organizations. Scores of Large organizations were similar (= or less than 5%) to other organizations' scores, except for Sections 1 (ICT) and 5 (Ubiquitous knowledge), where it was higher (greater than 5% difference), than Small organizations' scores. Over all maturity sections, Extra-Large organizations scores' were higher (5% and more difference) than the scores achieved by Small organizations. There was also a difference of more than 5% in scores achieved by Extra-Large organizations, compared to Large organizations in Section 2 (IM), and between Extra-Large and Medium-sized organizations in Section 5 (Ubiquitous knowledge). In essence small and Extra-Large organizations yielded different scores, with Medium and Large organizations forwarding similar scores.

Findings indicated that Extra-Large organizations are at an advantage when it comes to the institutionalisation of formal KM practice over all maturity sections. However, of interest is that although Large organizations outperformed smaller organizations (Small and Medium-sized organizations), in Sections 1 (ICT) and 5 (Ubiquitous Knowledge) of the questionnaire they were outperformed by Medium-sized organizations when it comes to IM (Section 2), the formulation of KM Issues, Policy and Strategy (Section 3), and the institutionalisation of KM practice (Sections 4).

As a rule, Extra-Large organizations do have access to considerably more resources than smaller sized organizations, possibly explaining why Extra-Large organizations (25,000+ employees) obtained higher scores for all maturity levels, than all other organization sizes. Due to legal and mandatory requirements, Extra-Large organizations are also more likely to be mature with regard to implementing Policies and Strategies. The lower scores achieved by Large organizations compared to the scores achieved by Medium-sized organizations,

especially in maturity Sections 2, 3 and 4 suggests that there could be a "break-even point" between resources available and the successful institutionalisation of KM, due to organizational size. This argument necessitated that for analysis purposes a more holistic stance needed to be taken. Note had to be taken of not only the achievement of organizations according to size, but also of the achievements in relation to the different managerial levels present within organizations. Specifically, analysis needed to include a study of the diffusion (the spread in score between the different managerial levels) of KM in different organizational sizes and organizational settings.

2.2 Knowledge management maturity as a function of different managerial levels

With reference to Table 4 and Figure 4, senior managers scored their organization's maturity at 53.48%; middle managers at 47.89% and operational personnel at 46.00%. This constitutes an overall difference in scores between senior management and operational personnel of 7.5%. Of interest is the difference between the scores where senior managers and middle managers (5.59%), is significantly higher than the difference in scores reported by middle managers and operational personnel (1.89%). Senior managers consistently rated the maturity of the different sections higher than middle and operational personnel. There is about a 10% discrepancy between the scores allocated by senior and middle managers to Section 3 of the questionnaire which deals with the formulation of KM Issues, Policies and Strategies. (Table 4 and Figure 4)

	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Total
Ops	**69.79%**	**57.80%**	**47.10%**	**44.38%**	**28.62%**	**47.69%**	**46.00%**
Middle	**72.15%**	**60.32%**	**49.59%**	**45.94%**	**29.65%**	**53.22%**	**47.89%**
Senior	**79.46%**	**65.72%**	**59.33%**	**49.46%**	**32.79%**	**54.88%**	**53.48%**

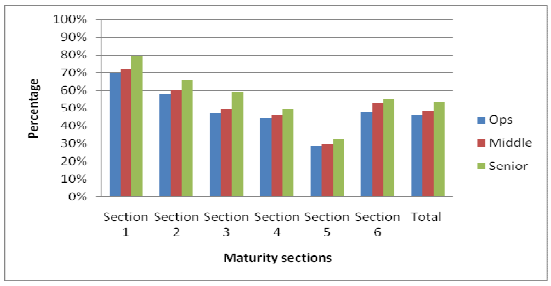

Table 4 and Figure 4: Knowledge management maturity as a function of different managerial levels

Analysis of variances (ANOVA), with a p Value < .0001 (Ho: means of different managerial levels are the same, Ha: means they differ) indicated that there is indeed a statistical difference between the score recorded by the different managerial levels over maturity Sections 1 to 4. However, scores reported for maturity Sections 5 and 6 were found not to differ significantly (0.07%) between the scores recorded by the different managerial levels. In order to determine where differences occurred, it was established that within Section 2 (IM), Section 3 (KM Issues, Policy and Strategy), and Section 4 (Implementation of KM) differences were found primarily between the values by operational and senior managers and middle and senior managers (The GLM procedure - Least Squares Means, was used to determine where specifically difference occurred). The values by operational personnel and middle managers were however found not to be significantly different. These findings not only supports the argument by King, Kruger and Pretorius (2007), that senior managers are more likely to agree that the organization would benefit from KM, but also indicates at an over-estimation in some perception by senior managers, regarding; (1) the success of implementation of IM; (2) the efficiency and effectiveness of KM issues, policies and strategies; and (3) sufficient support given to the institutionalization of KM endeavours.

2.3 Knowledge management maturity as a function of different managerial levels within different organizational sizes

When differences in opinion with regard to KM maturity reported by the different managerial levels are viewed from the perspective of different organizational sizes, the picture changes dramatically (Table 5 and Figure5). As a point of departure, an Analysis of Variances (2 way ANOVA) was done to determine if there is indeed a difference between the score achieved per organization size and the scores recorded per managerial level. Again it

was confirmed that the mean values recorded by the different managerial level and organizational size are statistically different at the 100% level.

In comparing the totals by operational, middle and senior personnel to one another, with a GLM Procedure (Least Square Means), it was confirmed that the scores of operational personnel and middle managers are similar in Small, Medium and Large organizations. However, scores of operational personnel and middle managers in Extra-Large organizations were different. Also, within Extra-Large organizations, the scores of senior managers were found to be similar to the scores recorded by middle management.

Excluding Small organizations, senior managers scored KM maturity fairly evenly over all maturity sections (Table 5 and Figure 5). In contrast, middle managers within Extra-Large organizations scored maturity considerably higher than middle managers in other organizations. Of interest is that the decline in scores between senior and middle managers is the smallest within Extra-Large organizations, and the largest within Large organizations. In contrast, the difference in score between middle and operational personnel is the smallest within Large and Medium-sized organizations, and the largest in Extra-Large organizations. These findings again support Connelly and Kelloway (2003) plus Serenko, Bontis and Hardie (2007) that the size of the organization does play a role in the diffusion of KM between the different managerial levels.

Within Small organizations, operational personnel rated KM management maturity at 41.94%, middle management scored maturity basically the same at 42.27%, while senior managers forward a maturity score of 47.10%. The difference in score between top management and operational personnel (5.2%) is the lowest of all organization sizes analysed. Of interest is that within Small organizations there is a fairly even distribution between the overall scores attributed to senior, middle, and operational personnel with regard to maturity in Sections 2 (IM), 4 (Implementation of KM), 5 (Ubiquitous knowledge), and 6 (Growth in KM). However, in Section 3, the identification and institutionalization of KM issues, policies and strategies, senior managers' consistently recorded scores higher than those by interviewees from middle and operational personnel. This again hints at middle and operational personnel within Small organizations viewing the formulation of KM issues, policies and strategies to be less successful than senior managers do.

In contrast to Small organizations, scores attributed to senior managers, in Medium-sized organizations, were at 54.83%, consistently higher over all maturity sections than the scores recorded by middle and operational personnel totalling 48.34% and 47.55% respectively. Scores recorded by middle and operational personnel are nearly identical over all sections. Viewed holistically, over all maturity sections there is a difference of about 7% between the scores recorded by senior managers on the one hand, and middle and operational personnel on the other hand. This strongly hints at a difference in perception regarding senior management's and operational and middle manager's opinion of KM maturity. Although senior managers in Medium-sized organizations are starting to acknowledge the value of KM, it has possibly not evolved beyond the strategic level.

	Small	Medium	Large	Ex-large	Avg.
Ops	41.94%	47.55%	45.18%	49.45%	46.00%
Middle	42.27%	48.34%	46.08%	55.62%	47.89%
Senior	47.10%	54.83%	55.67%	56.26%	53.48%

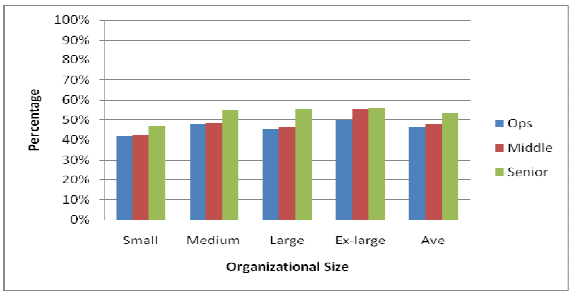

Table 5 and Figure 5: Knowledge management maturity ratings as a function of different managerial levels within different organizational sizes

This quandary is supported by an argument made by a senior manager in a Medium-sized service delivery company, "We have experienced quite strong growth in terms of KM maturity over the last five years. This is indicated by the establishment of a number of initiatives including Organizational Education, Training and the establishment of a Research and Development department, a definite step towards active KM" this manager continues and argues that, "Despite the fact that the R & D department provides management and other verticals valuable information, they have yet to become actively involved in the formulation of strategies." A senior manager at a South African Water Utility organization shares a similar sentiment and argues that, "our organization has realised the importance of KM as a strategic resource and has decided on KM principles. What is still outstanding is the formulation of organisational-wide knowledge policy that will enable the organization to implement KM initiatives." A possible explanation for differences in scores could thus be that even though there are clear-cut strategic initiatives driven by top managers, such strategy is not becoming policy, resulting in managers and operational personnel not buying in and not becoming sensitive regarding KM initiatives.

In Large companies, scores attributed to senior managers were at 55.67% considerably higher than the scores attributed to middle 46.08%, and operational personnel, 45.18% (Figure 5). Scores recorded by middle and operational personnel were again nearly identical over all maturity sections. The disparity of about 10% between the scores attributed to senior and middle management is mostly attributed to differences in scores in Section 2 (IM), Section 3 (Formulation of KM Issues, Policy and Strategy), and Section 4 (Implementation of KM) of the questionnaire. Comments made by middle managers working in a large pharmaceutical company manufacturing facility support the argument that senior management is overestimating KM maturity or supplying lip service to KM, in stating that, "the company does not have a clearly defined KM strategy and policy in place and staff members (especially management) are not evaluated on their ability to share knowledge." This manager not only argues that perceptions surrounding KM differs greatly, but that there is also a "perception that the ICT department is KM and not the enabler of KM." He also expresses a strong opinion that, "there is not a significant drive to get all employees involved in KM and expertise is held locally within functional departments, like IT, finance, production, etc." This position was supported by the following quote from a senior manager working for a large financial institution: "At the moment some members of the board are of the opinion that KM is part of IT management and should thus be incorporated into the IT department. This is creating confusion on who does what." A senior manager at a large ICT company made a similar statement that, "Our organization has not yet reached a level of whereby KM is able to seamlessly integrate with the eco-system of the enterprise. KM is still a separate entity although there is a great awareness, but its effectiveness is still yet to be realized." At another large pharmaceutical company, managers indicated that various initiatives have been explored to effectively handle data and information. These managers are in agreement that there is an understanding of the importance of managing, securing and protecting knowledge as a strategic resource. However, according to one of the manager interviewed, "Although our company realizes the importance of KM policies and strategies, our implementations of KM as well as our level of ubiquitous knowledge are at lower maturity levels"

Apart from Section 5, in Extra-Large organizations, scores attributed to senior (56.26%) and middle managers (55.62%) are significantly higher, and smaller in difference, than the scores recorded by operational personnel (49.45%). In some instances scores recorded by middle managers were even slightly higher than the scores recorded by senior managers (Sections 2 - IM and 4 - implementation of KM). This hint at differences in perception regarding the formulation of KM Issues, Policy and Strategy possibly being more the result of insufficient communication and/or the time delay associated with the diffusion of policy beyond the strategic domain, than unwillingness by management to implement KM. This argument is supported by a comment made by one of the executives interviewed in an Extra-Large organization saying, "The organization has realized the importance of KM as a strategic resource and has decided on KM. What is still outstanding is the formulation of an organizational-wide knowledge policy that will enable the organization to implement KM initiatives." In the words of a senior manager from a major automotive parts manufacturer, "Leadership and organizational culture are the two distinguishing inhibitors of levering existing knowledge to enhance performance and gain competitive advantage." This manager also supplied an explanation for differences in scores by different managerial levels and argued that, "While pockets of the company are advanced in knowledge creation and management, initiatives are not corporate-wide and therefore not sustainable."

3 CONCLUSION

The South African scenario can be considered a benchmark for developing economies characterized by continued change, diversity and even elements of silent intolerance and conflict. The research results meet the demand for qualitative research in providing an understanding within the particular context of South Africa. In this paper it is argued that the debate surrounding ICT, IM and KM is drawing attention away from the determining factor in KM's survival, acceptance and use. Current literature is largely neglecting this phenomenon. To date, not many studies are focusing on the amount of KM growth that is occurring in ordinary organizations, if organization size plays a role in the establishment of KM maturity or if employees and managers hold similar opinion regarding KM.

In contrast, KM might be a fallacy not able to withstand the test of time as Wilson (2002) would contest since only 33.60% of South African organizations indicating that no growth or a decline in KM growth occurred over the period 2003 to 2006. Due to the South African industry being considered a benchmark for Western industry with an environment characterized by continued change, diversity and even elements of silent intolerance and conflict, this finding is of extreme importance to KM practitioners, scholars and professionals. In moving past theoretical propositions and investigating KM as it relates to different organizational settings and managerial levels, it can be concluded that KM is taking on a new dimension, one where it is growing in stature and becoming a self-governing entity dependent upon but separate from ICT and IM.

As a point of departure, in the quest to answer the question "What role does organizational size play in the establishment of KM maturity?" analysis of KM maturity as it relates to different organizational sizes, revealed that there are significant statistical differences between the KM maturity score reported by Small, Medium, Large and Extra-Large organizations. Findings support Moffet and McAdam (2006) argument that, irrespective of organizational size, knowledge-orientated issues are applicable to all organizations. However, there is a question mark surrounding Moffet and McAdam (2006) argument that the manners in which knowledge-orientated issues are addressed differ only slightly depending on organizational size. With significant differences is scores recorded over all maturity sections, findings strongly hint that different sized organizations address knowledge-orientated issues differently. Smaller sized organizations prefer a more personal approach, while bigger sized organizations prefer knowledge transfer via technology.

Findings revealed that although Large organizations (NOT Extra-Large organizations) outperformed Medium-sized organizations in Section 1 (ICT management) and Section 5 (Ubiquitous Knowledge) of the questionnaire, they were often outperformed by Medium-sized organizations with regard to the management of information (Section 2), the vesting of KM Issues, Policy and Strategy (Section 3), and the institutionalization of formal KM endeavors (Section 4). As far as Medium to Large sized companies are

concerned, findings are therefore supportive of Connelly and Kelloway (2003) plus Serenko, Bontis and Hardie (2007) argument that there could be a "break-even point" between resources available (technology in support), the size of the organization and the ability to share knowledge. However, in contrast to Connelly and Kelloway's (2003) and Serenko, Bontis and Hardie's (2007) findings that there is often a negative relationship between organizational size and knowledge sharing, Extra-Large organizations recorded the highest scores over most maturity levels. Of interest was that high scores were not only the result of consistency in achievement over all maturity levels, but also the result of higher than average scores recorded by middle management. This strongly indicates that diffusion of KM has a much larger impact on KM maturity than often anticipated.

Viewed holistically, in answering the question "How do different managerial levels view their organizations KM maturity?", scores decided upon by senior, middle and operational personnel differ primarily between the scores decided upon by operational personnel and managers especially with regard to maturity in IM (Section 2), the identification of KM Issues, Policy and Strategy (Section 3), and the Implementation of KM (Section 4). An interesting observation is that there is about a 10% discrepancy between the scores allocated by senior and middle managers to Section 3 of the questionnaire, which deals with the formulation of KM Issues, Policy and Strategy. Middle and especially operational personnel are not sharing the same sentiment regarding the success of KM as senior management. Although this finding is not directly related to the argument proposed by King, Kruger and Pretorius (2007), the finding support the notion that individuals with more than eight years experience are more likely to view organizational culture as supportive of KM. Excluding Small organizations, senior managers scored KM maturity fairly even over all maturity sections. In contrast, middle managers within Extra-Large organizations scored maturity considerably higher than middle managers in other organizations. Of interest is that the decline in score between senior and middle managers is the smallest within Extra-Large organizations, and the largest within Large organizations. In contrast, the difference in score between middle and operational personnel is the smallest within large- and Medium-sized organizations, and the largest in Extra-Large organizations.

Findings confirm that there is a symbiotic relationship between diffusion of KM between managerial levels and organizational size and the two should not be studied in isolation. These findings therefore support Connelly and Kelloway (2003) plus Serenko, Bontis and Hardie (2007) that the size of the organization does play a role in the diffusion of KM between the different managerial levels. However, there findings add a new dimensions to the argument that there is a negative relationship between organizational size and knowledge sharing and that as the size of an organization unit increases, the effectiveness of internal knowledge flows dramatically diminishes while the degree of intra-organizational knowledge sharing decreases. Findings hint that, depending on the size of the organization, the spread in diffusion between different managerial levels changes from large differences between all the lower levels of management (operational personnel and middle management) and senior management, to large differences between all managers (middle and senior management) and operational levels.

When findings are viewed holistically, it becomes clear that although organizational size and the availability of resources are influencing the successful institutionalization of KM, the establishment of sound KM practice and the sharing of knowledge might be more dependent on a deliberate, conscious and calculated managerial effort. Irrespective of organizational size, commitment holds the key to KM success. Such commitment by especially middle management, we belief, in future will differentiate leaders from followers.

3.1 Limitations and applicability of the study

A limitation of the study was that it was based solely on South African Industry. A second constraint in the same area is the level of aggregation. This could be overcome by closer examination of the component organizations. Replicating this study in other developing as well as developed countries would be most informative. In the same light, a longitudinal study might identify trends in different industries, regions, and

capital markets. The questionnaire used is also intended to assess a company operating on free market principles and might be ineffective for use in assessing companies operating in an oligopolistic market.

The use of a four point Likert scale, used in the KM Maturity Questionnaire may not be sensitive enough. Expanding the number of possible responses might offer a more nuanced analysis of trends. Due to the subjects of research being drawn in as integral parts of the research design, manipulation due to "overly emotional or subjective involvement" could have occurred due to respondents serving their own, rather than the research needs. Another quandary to be further investigated is why respondents in Extra-Large organizations, by middle management are consistently closer to the scores reported by senior management than by operational personnel.

While varying conceptions of knowledge management exist amongst eastern and western theorists, this study provides valuable baseline data which can support further studies of both local and global scope and significance. Such investigations can explore varying perceptions of technology, information, and knowledge outside the scope of this study. However, this study does set the stage for investigating diversity in conceptions and implications for perceptions of management modes. The baseline data presented can therefore inform other empirical studies that investigate differences regarding knowledge sharing in different sized organizations. These further studies can also probe the significance of cultural differences precipitated by race, age, ethnicity, gender, etc. in both further defining agreement on the meaning of these terms and also exploring the implications of such insights for usage and adoption of KM in all spheres of organizational diversification, including leveraging its potential for organizational innovation and advancement.

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