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The Need for Process-Aware Knowledge Management Systems in South Africa

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ABSTRACT:

This study had as an aim to identify whether there is a need for process-aware knowledge management (KM) systems in South Africa. The research question that had to be answered was: Is there a need for process-aware KM systems in South Africa? As such, the study focused on the benefits of KM systems, whether there is a need for process-aware KM systems, as well as the challenges associated with implementing KM systems in the context of the South African environment.

The methodological choice utilised was the mono-method qualitative, which was used as a tool to examine the main objective: To determine whether there is a need for process-aware KM systems to be implemented in South African organisations. In tackling the objectives, a literature review was used together with non-standardised, semi-structured interviews of 5 participants working at a knowledge management consultation firm. In the end, it was found that South Africa is still at the first stage of KM, which is the initiation stage. This stage mainly focuses on increasing awareness of the field. This suggests that South African organisations are at a stage where introducing a system has more to do with how people will react to it as opposed to what the system does.

Another key finding was that the attitude of people is more important than implementing a system. At this early stage of KM in South Africa, a KM system is regarded as only an enabler, meaning, it does not matter what system you implement, should people not use it or should they reject it, then organisations would have wasted resources in implementing the system. As such, it is more important to have measures in place that encourage positive attitudes towards any system that is implemented. A system being process-aware has little effect on the success of the system.

Keywords: *Knowledge management, systems, benefits, challenges, behaviour.*

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1. Introduction

Numerous organisations have begun to implement Knowledge Management (KM), however, there is a rise in KM implementation failure (Rusly, Corner & Sun, 2012:329). Due to failure to manage change in the Information Technology industry, there are reports of project failure, which have led to a waste of money, time and project desertion due to poor performance (Brown, Rose & Gordon, 2016:793). The inevitability of change to occur makes it necessary for change management to happen in a systematic manner (Karimidorabati, Haas & Gray, 2016:554).

Knowledge is very important to organisations (Gao, Li & Clarke, 2008:3). Due to the increase in importance of knowledge, it is essential for it to be managed, making KM important as well, and to the extent of KM being a decisive competitive element in business (Hanisch, Lindner, Mueller & Wald, 2009:148). In general, KM is described as the obtaining, saving, accessing, application, creation and review of knowledge resources found in an organisation in a systematic way (Kamaruzzaman, Zawawi, Shafie & Noor, 2016:70). It is realised that KM supports people in performing their everyday functions in a knowledge centred manner (Woitsch & Karagiannis, 2002:253).

Growing investments in Knowledge Management Systems (KM systems) prove that KM is crucial to organisations (Zhang & Venkatesh, 2017:1275). Some of the benefits of implementing KM systems include the following: driving economic development, lessening training costs, improving employee performance, and facilitating social growth (Zhang, 2017:811). KM systems are utilised for supporting KM in knowledge development, preservation, distribution and application (Centobelli, Cerchione & Esposito, 2018:108). Both Zhang and Venkatesh (2017:1275) and Zhang (2017:811) define KM systems as being a group of information systems implemented to manage an organisation's knowledge.

Although KM systems bring great benefits to organisations, these systems are not always perfect. This is in part due to the fact that KM systems, to large degrees, were designed and implemented without taking organisations' business processes into consideration (Sarnikar & Deokar, 2017:693). In providing answers to the main research question: Is there a need for process-aware KM systems in South Africa? Five key players at a knowledge management consultation firm were interviewed using semi-structured interviews. The literature consulted

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together with the findings will help the researcher draw recommendations on what organisations need to do to ensure that they successfully implement KM systems.

2. Literature review

2.1. Change management

There are cases where change practitioners are brought in to manage change, however, they are sometimes unable to do so effectively as they do not have adequate access to executives, only have access to narrow terms of reference, as well as bad decision making by project heads (Brown et al., 2016:793). According to Rusly et al. (2012:329), there are two essential change cycles in the Institutional Change Framework: Being ready for change as well as change implementation. Prior to implementation it is vital to determine whether an organisation is ready for change or not. Historically, change management has been utilised to assist organisations successfully execute programmes and projects that require changes to take place; changes in processes and behavioural sequences of people who would be affected by the change (James & Frank, 2015:55).

The focus of change management is on getting people who will be affected by change ready to accept and adjust to the changes that will occur due to the implementation of a certain project (James & Frank, 2015:55). For organisations to effectively manage change, it is important that the right information, regarding the changes, be made available to the right person at the time and in an appropriate format (Karimidorabati et al., 2016:554).

As early as the 1980s, project managers were expected not only to have knowledge in technology and technological processes, but also to understand that the successful implementation of any technological tool relied heavily on its acceptance by employees (James & Frank, 2015:55). Numerous studies indicate that there are change initiatives that have failed (Brown et al., 2016:793). Throwing large amounts of money into acquiring technology and infrastructure will not automatically lead to successful KM implementation; instead, it is suggested that successful implement depends heavily on the willingness of employees to commit to taking part in new KM initiatives (Rusly et al., 2012:329).

2.2. Knowledge Management

Lambe (2011:175) claims that it is widely agreed that KM arose as a field of study in the early 1990s. This is not entirely true for South Africa as KM became part of the eThekwini

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Municipality in 2005 as the vast amount of knowledge being created at the City was lost whenever people left the institution (MILE, 2010:5). Due to the dematerialisation of the value chain, knowledge, as an intangible asset of institutions, plays an increasingly important role in economic development (Hanisch et al., 2009:148).

Woitsch and Karagiannis (2002:253) reported that organisations lost up to twenty dollars daily and per employee due to the absence of information. They added that KM could lessen such losses. Hanisch et al. (2009:148) define knowledge as being information, a set of expertise, experiences and abilities people use to solve challenges. The essence of KM is the association amid people and information, which is interceded by systems and procedures (Kamaruzzaman et al., 2016:70). KM refers to a set of actions an institution utilises to develop, store, utilise and distribute knowledge (Hanisch et al., 2009:149).

The KM field looks to create a strategy for acquiring, utilising and sharing knowledge effectively throughout organisations as a way to enhance efficiency and create a maintainable competitive advantage (Barber, Munive-Hernandez & Keane, 2006:1002). KM assists organisations with discovering, obtaining, and using information properly (Lee, Lu & Yang, 2010:10). Through learning from previous projects, KM is regarded as being an effective way for constant improvement (Ahn, Lee, Park & Roh, 2007:313). KM not only pushes employees to share knowledge, it also enhances an organisation's competitiveness, performance, and efficiency (Lee et al., 2010:10).

In the event that an organisation does not utilise all the knowledge it holds, that can only mean that there are some hindrances to their knowledge sharing and use, which stop the process of learning (Kamaruzzaman et al., 2016:71). KM systems are important because they facilitate the sharing of knowledge between workers (Zhang, 2017:811). Due to commercial organisations becoming more intricate, they have implemented different technology solutions and strategies to manage their knowledge (Lee et al., 2010:10).

2.3. Knowledge Management Systems

It is crucial for organisations to continuously enhance their operating models as well as their comprehension of the suitable processes of locating, saving, duplicating and applying relevant knowledge (Lee et al., 2010:10). One core reason KM systems are implemented is to foster job results, for example, work satisfaction and employee performance (Zhang & Venkatesh, 2017:1275).

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Even though KM systems are being implemented in organisations, there is not enough research on how they are integrated (Lee et al., 2010:10). There are many cases where KM systems implementations have been reported to have failed to accomplish their goals of job satisfaction and improving employee perform. One reason given was that employees may not have knowledge on how the systems are to be utilised to improve job outcomes (Zhang & Venkatesh, 2017:1275).

KM systems can be considered a kind of social technology (Zhang, 2017:811). Knowledge technologies need to push users to be innovative, simplify organisational activities, encourage never ending knowledge development and continuous improvement, as well as support development through innovation (Barber et al., 2006:1003). KM systems are systems made to manage knowledge and they are one of the highly promising information systems today (Ahn et al., 2007:313). KM systems support continuous improvement through making available a formal structure to gather relevant information, retrieve key performance indicators, evaluate processes, as well as plan, execute and examine enhancement initiatives systematically (Barber et al., 2006:1003).

2.4. Process-based KM systems

Process-aware information systems have assisted in improving organisational productivity as well as the productivity of knowledge workers through enhancing communication and being an effective instrument for automating repetitive tasks (Sarnikar & Deokar, 2017:693). There are two key reasons KM systems are ineffective and hardly used – inherit issues in the system, as well as managerial issues in organisations (Ahn et al., 2007:313). Information systems have flaws, which could lead to users refraining from using the system (Dong, Hung & Cheng, 2016:808), this has to be prevented as implementing these systems is expensive.

The core limitations to KM systems adoption are inclusive of a difficulty in identifying the objectives of knowledge sharing as well as an absence of interactive knowledge sharing practices within an organisation's culture (Lee et al., 2010:10). KM systems that have failed to provide constant improvement are hindered by a controlled, top-down method and an unproductive transferring tool. However, this can be solved by a process-based KM system that assists with obtaining and transferring knowledge utilising blogs on a process basis as opposed to knowledge maps (Ahn et al., 2007:313).

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A process-based KM system is able to make available a systematic approach to assimilate distinct operating systems and management in order to support enhancement initiatives (Barber et al., 2006:1004). Different organisational cultures impact knowledge sharing differently, as such, organisations cannot assume because one system works for another organisation, it will work for them (Lee et al., 2010:10). A KM system is able to provide a link between sustenance information and an organisation's goals and strategy (Barber et al., 2006:1004). Additionally, it is important that KM systems design consider organisational culture to make certain that procedures are suitable to specific organisations (Lee et al., 2010:10).

3. Research Design and Methodology

3.1. Philosophical and research paradigms

The selected research paradigm for this study was the mono-method qualitative, which is in most cases linked to interpretivism as it necessitates the investigation of subjective meanings encouraging the actions of participants to allow researchers to comprehend these actions (Saunders, Lewis & Thornhill, 2009:111). The investigative traits of the research question implied that induction be adopted as the research approach (Saunders et al., 2009:61). The study aimed to explore the implications that come with implementing new technologies in organisations.

Additionally, the aim of the study was to obtain data through interviewing the senior associate consultant, two associate consultants (referred to as associate 1 and associate 2 in the results discussion), a knowledge officer and a knowledge management systems specialist consultant from a KM consulting firm. The data collection tool utilised were semi-structured interviews to uncover not only the participants' true characteristics, but also the hidden facts of the organisation (Qu & Dumay, 2011). These participants were identified and chosen because they hold knowledge regarding KM systems. This required purposive sampling to be utilised. Purposive is utilised when working small samples (Saunders et al., 2009:237).

The data collected was analysed narratively, which allowed researchers to describe the experiences of the participants and detail their stories through writing (Thorne, 2000). The researcher utilised ATLAS.ti. as a coding tool to help with the analysis of the data. It is important to note that ATLAS.ti. does not analyse data, it is merely a tool that makes analysis easy for researchers (Friese, 2014:1). A limitation to the study is that it focused on only one KM consulting organisation, as such, the views provided cannot be generalised to every KM

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consulting firm. This limitation can be alleviated through conducting similar research at other KM consulting firms.

4. Results and Discussion

Associate 1 of the consultation firm argued that it is important to manage knowledge within an organisation so that it becomes easier to find important information especially critical information. In agreement with this statement Zhang (2017:811) provides that Cisco implemented a KM system to enable its 250 new service support managers to retrieve and distribute important information, thus considerably lessening their learning curve as well as time-to-efficiency. The senior associate believes that organisations need to manage knowledge because knowledge is very important, as it can be used and reused. However, if it is not managed, you will not be able to retrieve knowledge and reuse it. She adds that it might not be used immediately, but in future it could be very important and could come as an important tool to use when solving problems. In line this thinking, Gao et al. (2008:11) argue that it is important that organisations have clear objectives for knowledge management in business, for example, the effective and efficient administration of present organisational knowledge as well as the deployment of personal knowledge to help with accomplishing organisational goals.

The main point of managing knowledge, according to associate 2, in the organisation is to create a knowledge transfer system because organisations constantly have people coming in and out and never know who or what sort of information will be beneficial, or who has that information that will make a big difference in the company. As such, organisations need all of that information to remain with the organisation, as it can help them get to their objectives. Another benefit of knowledge transfer according to Boh, Nguyen and Xu, (2013:29) is that it can develop a competitive advantage for organisations. The KM systems specialist consultant suggested that it is important for any organisation to manage their knowledge because they retain their IP. For example, "think of an organisation where people have come in and have worked for 20 years, they have gained experiences and learnt lessons and then leave. A group of new people comes in and they have nothing to start with, KM will also help save the organisation money and time by preventing new people starting from scratch". This fits the definition of knowledge transfer, which according to Wilkesmann, Fischer and Wilkesmann (2009:465) refers to the procedures through which components are impacted by the experience of an alternative component.

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Associate 1 also stated that a benefit of KM is finding information quickly which allows you to save time. It becomes easier for one to get back to what they were doing and reach the objectives of the organisation. Other benefits of KM systems implementations include driving economic development, enabling social development, lessening the cost of staff training, and improving job performance (Zhang, 2017:811).

The KM systems specialist consultant asserted that KM helps organisations stop reinventing the wheel. For instance, through accessing previous works, newcomers can refrain from committing the same mistakes from the past or they can improve on old ideas. The knowledge officer concurred and suggested that KM facilitates communication which can help workers know what others are doing and refrain from duplicating work. This is fact, per Ilesanmi (2012:187) who claims that collaboration could assist organisations stop the duplication of work.

Associate 1 indicates that getting buy-in is important when implementing a new KM system. Mallon (2017:228) provides an example stating that not having buy-in from, for instance, financial stakeholders could block implementations of, in the context of this study, KM initiatives. The senior associate believes that people are reluctant to change and as such implementations may not succeed due to that. Scholars such as Schlak (2015:394) present the same idea in that buy-in is important to have a smooth transition into a new era.

Another challenge pointed out by associate 2 and the senior associate is the actual use of the KM system. Explicating that the structuring of the KM system may be confusing and that if there is no guidance or training material put in place, then it can be challenging for employees to use the system. According to Hurn (1996:33) the sharing of skills can occur through training. Furthermore, Nikandrou, Brinia and Bereri (2009:255) explain that the main purpose of training is to help employees improve on their skills, thereby assisting the organisation achieve success.

The KM systems specialist consultant and the knowledge officer contend that the behaviour of employees is the main reason the implementation of KM systems would fail. They believe that even if organisations choose to use the best technology, if the behaviour of employees towards it is negative, the implementation will not succeed. The KM specialist consultant complains that even in their organisation the usage of the KM system is a problem, as people choose to work in silos and save documents on their personal workstation as opposed to on the system. The knowledge officer however, provides that it is important to remember that technology is merely an enabler and not necessarily a solution on its own. It is argued by Asad and Javaid (2011) that,

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employee behaviour is influenced by job security, motivation, attitude of leaders to other employees and job motivation. An additional concern is that older staff members may feel threatened by new developments and think of their positions as "experts" as being in danger as they may not encompass the necessary skills to deal with the new technology (Pandey & Misra, 2014:140; Asogwa, 2011).

There is a rise in user involvement in designing technological systems (Damodaran, 1996:363). Three participants see user involvement in the development of KM systems as highly important. This is because these are the people who have to use the system and deal with its challenges on a daily basis. This can also help with the acceptance of the KM system, which one of the main challenges to the acceptance of KM systems is employee behaviour (Kamaruzzaman et al., 2016:71). The knowledge officer believes that change management is a key part in implementing KM systems. She argues that executives also have to support the KM departments by adding the usage of the system to the biannual clarifying where documents are to be stored and ask questions such as "have you shared documents with your team?" to employees.

All participants agree that no one system can work for all organisations in the world and in some cases even departments within the same organisation may need to use different KM systems. The identified benefits of process-aware KM systems include automating routine activities and communication, which can lead to enhanced productivity of both knowledge workers and organisations (Sarnikar & Deokar, 2017:693). Even so, the KM systems specialist consultant and the knowledge officer continued to stress the fact that technology is merely an enabler and that employee behaviour is at the head of the KM systems implementations success.

All participants shared the sentiments that KM is fairly new in South Africa and organisations are increasingly becoming aware of its importance, for example, it is reported that the KM became part of the eThekwini Municipality only in 2005 (MILE, 2010:5). As such, there is huge potential for KM to grow and be a mainstream discipline in South Africa. The knowledge officer believes that KM has a long way to go in South Africa and it is only in the initiation stage of the American Productivity and Quality Center stages of KM maturity.

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5. Conclusions and recommendations

The main finding was that, the type of KM system implemented has little impact on its success; rather it is the behaviour of users that determines whether or not a system is successful. The behaviour of employees is the main reason the implementation of KM systems would fail. Even at the consultation firm, the usage of the KM systems is a problem, where people choose to work in silos and save documents on their personal workstation as opposed to on the system. It is provided that it is important to remember that technology is merely an enabler and not necessarily a solution on its own. It is continuously argued that one of the main challenges to the acceptance of KM systems implementations is employee behaviour. Another key finding was that user involvement in the development of KM systems is extremely important. This explains the rise in user involvement in the designing of technological systems

The recommendation is for effective change management to be conducted. The focus of change management is on getting people who will be affected by change ready to accept and adjust to the changes that will occur due to the implementation of a certain project. For organisations to effectively manage change, it is important that the right information regarding the changes be made available to the right person at the time and in an appropriate format. Another recommendation is for organisations to involve users in the design of KM systems as these are the people who have to use the system and deal with its challenges on a daily basis. This will also help with the acceptance of the system and employee behaviour towards the system.

6. REFERENCES

[1] Ahn, C., Lee, H., Park M. & Roh, S. (2007). *Project-based knowledge management system using blog*. Available from: https://www.irbnet.de/daten/iconda/CIB11189.pdf

[2] Asad, M. and Javaid, M.U. (2011). *Factors influencing employee behavior towards organizational change: A diagnostic study*. Available from: https://www.researchgate.net/publication/271642129_Factors_Influencing_Employee_Behavior_towards_Organizational_Change_A_Diagnostic_Study

[3] Asogwa, B.E. (2011). Digitization of archival collections in Africa for scholarly communication: Issues, strategies, and challenges. *Library philosophy and practice*, **November 2011,** 1-13.

[4] Barber, K.D., Munive-Hernandez, J.E. and Keane, J.P. (2006). Process-based knowledge management system for continuous improvement. *International journal of quality & reliability management*, 23(8): 1002-1018.

[5] Boh, W.F., Nguyen, T.T. and Xu, Y. (2013). Knowledge transfer across dissimilar cultures. *Journal of knowledge management*, 17(1): 29-46.

[6] Brown, D.R., Rose, D. and Gordon, R. (2016). De-commoditizing change management: A call for the re-positioning of change management on IT projects. *Journal of organizational change management*, 29(5): 793-803.

[7] Centobelli, P., Cerchione, R. and Esposito E. (2018). Aligning enterprise knowledge and knowledge management systems to improve efficiency and effectiveness performance: A three-dimensional Fuzzy-based decision support system. *Expert systems with applications*, 91: 107-26.

[8] Damodaran, L. (1996). User involvement in the systems design process – a practical guide for users. *Behaviour & information technology*, 15(6): 363-377.

[9] Dong, T., Hung, C. and Cheng, N. (2016). Enhancing knowledge sharing intention through the satisfactory context of continual service of knowledge management systems. *Information technology & people*, 29(4): 807-829.

[10] Friese, S. (2014). *Qualitative data analysis with ATLAS.ti*. London: Sage Publications.

[11] Gao, F., Li, M. and Clarke, S. (2008). Knowledge, management, and knowledge management in business operations. *Journal of knowledge management*, 12(2): 3-17.

[12] Hanisch, B., Lindner, F., Mueller, A. and Wald, A. (2009). Knowledge management in project environments. *Journal of knowledge management*, 13(4): 148-160.

[13] Ilesanmi, T.C. (2012). Library consortium: IITA, Ibadan, Nigeria experience. *Interlending & document supply*, 40(4): 187-191.

[14] James, H.H. and Frank, V. (2015). Cultural change management. *International journal of innovation science*, 7(1): 55-74.

[15] Kamaruzzaman, S.N., Zawawi, E.M.A., Shafie, M.O., Nur, S. and Noor, A.M. (2016). Assessing the readiness of facilities management organizations in implementing knowledge management systems. *Journal of facilities management*, 14(1): 69-83.

[16] Karimidorabati, S., Haas, C.T. and Gray, J. (2016). Evaluation of automation levels for construction change management. *Engineering, construction and architectural management*, 23(5): 554-570.

[17] Lambe, P. (2011). The unacknowledged parentage of knowledge management. *Journal of knowledge management*, 15(2): 175-197.

[18] Lee, C., Lu, H. & Yang, C. (2010). A process-based knowledge management system for schools: A case study in Taiwan. *The Turkish online journal of educational technology*, 9(4): 10-21.

[19] Mallon, M.R. (2017). Getting buy-in: Financial stakeholders' commitment to strategic transformation. *Management research: Journal of the iberoamerican academy of management*, 15(2): 227-243.

[20] MILE. (2010). *eThekwini knowledge strategy and implementation plan 2010 – 2014*. Available from:

http://www.mile.org.za/Come_Learn/Knowledge_Management/Knowledge%20Management%20Strategy/KM%20Strategy/KM%20Strategy.pdf

[21] Nikandrou, I., Brinia, V. and Bereri, E. (2009). Trainee perceptions of training transfer: An empirical analysis. *Journal of European industrial training*, 33(3): 255-270.

[22] Pandey, P. and Misra, R. (2014). Digitization of library materials in academic libraries: Issues and challenges. *Journal of industrial and intelligent information*, 2(2): 136-141.

[23] Qu, S.Q. and Dumay, J. (2011). The qualitative research interview. *Qualitative research in accounting and management*, 8(3): 238-264.

[24] Rusly, F.H., Corner, J.L. and Sun, P. (2012). Positioning change readiness in knowledge management research. *Journal of knowledge management*, 16(2): 329-355.

[25] Sarnikar, S. and Deokar, A.V. (2017). A design approach for process-based knowledge management systems. *Journal of knowledge management*, 21(4): 693-717.

[26] Saunders, M., Lewis, P. and Thornhill, A. (2009). *Research methods for business students*. London: Pearson education limited.

[27] Schlak, T.M. (2015). Social capital and leadership in academic libraries: The broader exchange around "Buy In". *Library management*, 36(6/7): 394-407.

[28] Thorne, S. (2000). Data analysis in qualitative research. *BMJ*, 3(3): 68-70.

[29] Wilkesmann, U., Fischer, H. and Wilkesmann, M. (2009). Cultural characteristics of knowledge transfer. *Journal of knowledge management*, 13(6): 464-477.

[30] Woitsch, R. and Karagiannis, D. (2002). Process-oriented knowledge management systems based on KM-services: the PROMOTE approach. *International journal of intelligent systems in accounting, finance and management*, 11: 253-267.

[31] Zhang, X. (2017). Knowledge management system use and job performance: a multilevel contingency model. *MIS quarterly*, 41(3): 811-840.

[32] Zhang, X. and Venkatesh, V. (2017). A nomological network of knowledge management system use: Antecedents and consequences. *MIS quarterly*, 41(4): 1275-1306.