KMSA
Knowledge Management South Africa

IN THE KNOW

Newsletter of Knowledge Management South Africa

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IN THIS ISSUE

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FROM THE CHAIR

Welcome to our third edition of the KMSA Newsletter IN THE KNOW, the last edition of 2021. The purpose of this Newsletter is to keep members informed of programmes, the latest news, and upcoming events, academic and research studies. The new board has hit the ground running with consolidating the gains of the previous board, noting the lessons, and charting a new path. I am particularly excited about the energy, expertise, and commitment of the new board and the new programmes that are planned. We will continue to build strategic partnerships nationally and internationally to build a distinct KMSA brand.

A lot has changed, along with the rise of remote and hybrid work, have caused many organizations to re-evaluate their priorities when it comes to knowledge management and collaboration. At the same time, new technology continues to push the envelope in terms of what KM can accomplish. **IN THE KNOW** will continue to provide KM's current state and an exploration of what the future holds. I look forward to sharing more with you in the New Year.

As we wind down and bid farewell to 2021, may I take this opportunity on behalf of the KMSA Board and Secretariat to thank you heartily for your support of KMSA in 2021. We appreciate all the support we receive from members and partners through various activities and engagements. KMSA is growing because of your support, and we look forward to continuing this journey in 2022 and beyond. Sadly, the COVID-19 pandemic is still a big concern. South Africa and the world at large continue to be devastated by this pandemic and the new variants that are emerging. While we are worn out and tired, the virus is not tired of us. May we continue to take all precautions necessary, prioritise our physical and mental health, and support others where we can. Happy holidays, be safe, and let's meet again in 2022.

REFILOE MABASO
KMSA CHAIRPERSON

"Wherever there is a human being,
there is an opportunity for a kindness"
- Lucius Annaeus Seneca

KMSA PROGRAMME UPDATE

PROF HANLIE SMUTS
DEPUTY CHAIR

I am excited to share with you the programme updates of KMSA. The KMSA Board and Secretariat met on the 20th of November 2021, resolved to strengthen the value proposition of KMSA, sharpen the work of committees and deliver value for members.

This value will be delivered through the work of four committees: namely:

1. Content Strategy and Marketing
2. Professionalization Committee
3. Artificial Intelligence (AI) Committee
4. KMSA Awards Committee

The Content Strategy, and Marketing Committee focuses on the strategic use of content to drive member and partner engagements and build brand activation. The team is working hard to develop strategic initiatives and content, including preparing for the 2022 KMSA Convention. Please look out for the KMSA conference call for papers during January 2022 and we will share the integrated content and calendar plan for 2022 in due course.

KMSA aspires to be the professional association representing Knowledge Management professionals in South Africa. The Professionalization Committees is focused on achieving this goal in the first part of 2022, encouraged by the progress made thus far. The priority for this committee includes updating KMSA policies as per inputs received from SAQA, developing a Knowledge Management Competency Framework, Knowledge Management Curriculum, and Career Information to inform the SAQA application for recognition of our association as a professional body. The committee will continue to lobby and advocate for Knowledge Management in the public, private, academic, and non-profit sectors to build strategic partnerships.

The digital transformation is reshaping the value proposition of Knowledge Management. The components of the 4th Industrial Revolution, particularly Artificial Intelligence and Robotics, are playing a critical role in all sectors and professions, including in Knowledge Management. The newly established Artificial Intelligence Committee will be our NorthStar as we jointly navigate this new journey, equip ourselves with the knowledge and skills to contribute to our respective industries and sectors. The Feature article provides a summary of for the link to an article, published in November 2021.

Lastly and by no means least is the KMSA Awards Committee. The Committee will be implementing the KMSA Awards for Excellence to celebrate excellence, raise the profile of Knowledge Management and contribute to setting standards and best practices. The awards programme will be implemented incrementally with the support of our valued members and partners.

I wish you well during the holidays. Keep well and safe!

"Because that's what kindness is. It's not doing something for someone else because they can't, but because you can." ***Andrew Iskander***

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Prof Hanlie Smuts

Dr Candice Borgstein

Prof Hanlie Smuts and Dr Candice Borgstein write about how the AI4KM grid advances new methods for organising, accessing, and exploiting multidisciplinary knowledge. Read an abbreviated version of the article here or click through to the **RealKM website** for the original and longer version.

Artificial intelligence (AI) and knowledge management (KM): two sides of the same coin?

The significant and fast-paced advances in digital technologies enable organisations to collect, store, and analyse structured and unstructured data on a colossal scale. Therefore, these digital technologies undertake to automate repetitive and labour-intensive work and knowledge work. By leveraging this association between the proliferation of knowledge and big data, many disciplines such as the management of information, operations and innovation, have contributed to vast knowledge generation; knowledge such as a better perspective of customer needs, business operations and customer services, which may have been unknown to the organisation without having access to big data and advanced analytics.

To become data-driven and turn internal and external big data datasets into actionable insight, an organisation must assimilate, integrate, and analyse data rapidly. It may require a transformation in the process.

Advanced analytics

According to the Gartner information technology glossary, advanced analytics refers to "the autonomous or semi-autonomous examination of data or content using sophisticated techniques and tools to discover deeper insights, make predictions, or generate recommendations". Although various definitions exist for artificial intelligence (AI), this term generally incorporates the notion of achieving complex goals and solving problems by creating intelligent machines and applying machine learning (ML) to adapt to new situations and act in its environment. ML techniques are also well suited to discover the structure of a data set, the underlying patterns of a dataset or a model tailored to the data.

Data-driven decision making

Big data and advanced analytics have created a radical shift in how knowledge is defined, how information should be engaged, and how knowledge is constituted. Of significant practical and theoretical importance, is understanding the outcomes of emerging intelligent machine-knowledge worker reconfigurations. Organisations now conduct business based on the new technologies, challenging conventional division of labour between man and machine consisting of inter-related initiatives such as automation to diminish repetitive jobs, digitalisation of work to improve worker efficiency and AI to provide more reliable, useful, productive professional work.

Knowledge at the core of AI and KM

At their core, KM and AI are about knowledge. AI provides the mechanisms to enable machines to learn and allows machines to acquire, process and use knowledge to perform tasks and unlock knowledge that can be delivered to humans to improve the decision-making process. KM enables an understanding of knowledge, while AI provides the capabilities to expand, use, and create knowledge in ways we have not yet imagined. All these technical, scientific and social aspects involved in building, maintaining and using knowledge-based systems is known as knowledge engineering and is concerned with representing and implementing the expertise of a chosen application domain in a computer system.

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Knowledge acquisition is an activity of knowledge engineering that is very important in the initial phase of system shaping for building the fundamental knowledge base, as well as in the application phase of the system for knowledge base updating. Initially, knowledge acquisition made explicit the human knowledge that is relevant for performing a task, so that it can be represented and become operational in an expert system. Consequently, knowledge acquisition and knowledge engineering are closely related to human cognition, which is studied in cognitive science.

Cognitive computing uses computerised models to simulate human thought processes and involves deep learning artificial neural network software that uses text data mining, pattern recognition and natural language processing to mimic the way the human brain works. In its initial form, knowledge engineering focused on the transfer process, transferring the expertise of a problem-solving human into a program that could take the same data and make the same conclusions.

The AI for KM (AI4KM) grid

There are 3 ways human–AI collaborations occur: automation, conversational interface optimisation, and insight generation. Automation refers to the deployment of AI systems to substitute for the role of human agents in performing a task e.g. AI systems can write articles about sporting events, both in a fraction of the time and at a comparable quality level as experienced sportswriters. Conversational interface optimisation enables human and AI agents to augment one another in order to perform a task e.g. chatbots, and insight generation, where human and AI agents are dynamically brought together to perform an emergent task i.e. the human and AI agents work as an integrated unit to perform the task e.g. e.g. financial advisors.

In order to provide an overview of the potential 2 sides of the AI and KM coin, we created an AI4KM grid. Knowledge management activities such as knowledge creation and acquisition, knowledge sharing and transfer, and knowledge application were considered across the 3 ways human-AI collaboration occurs.

Knowledge creation and acquisition		
Automation	**Conversational interface optimisation**	**Insight generation**
AI systems: • are used to improve KM in terms of data-mining and processing. Solicit knowledge from experts to develop new content. • permits the capturing and representation of knowledge, considering several dimensions such as people, processes, best practice and associated lessons learned.	• Chatbots support clients in their complex tasks, dealing with customer or employee service requests. • AI facilitates the transformation of individual knowledge to organisational knowledge.	**AI:** • facilitates the development of KM through offering various tools for knowledge acquisition, codification, and analysis, sharing and use, leading to efficiency. • manages heterogeneous knowledge and also generates contextual and sharable new knowledge. • algorithms extract hidden knowledge from unstructured data and outliers. • uncovers knowledge through deep analysis, and amplifies the cognitive abilities. • offers a wider explanatory framework for the decision-maker.

Knowledge creation and AI define the rules and ontologies required for knowledge-based systems. Knowledge-based systems are based on the initial process of finding and interviewing domain experts and capturing their knowledge via rules, objects, and frame-based ontologies. Now, AI is applied to search for possible solutions, mining the information hidden in the data, making models of human intelligence, and building machines that simulate intelligent human behaviour.

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Knowledge sharing and transfer		
Automation	**Conversational interface optimisation**	**Insight generation**
AI: • drives search or recommender systems. • facilitates KM through intelligent agents' cooperation, coordination and collaboration in order to create and share knowledge for process and organisational effectiveness.	• Chatbots monitor the sentiment of customers to provide real-time feedback to customer specialists. • AI supports just-in-time knowledge handling and acquisition. • AI provides operational solutions related to daily activity.	**AI systems:** • discover relationships between people and projects, documents and other team members. • facilitate web knowledge acquisition, hierarchical document classification, intelligent search, and web-enabled knowledge sharing. • facilitate KM development through offering various tools for knowledge sharing and use, leading to efficiency.

AI and KM transformed the process of knowledge sharing and transfer as AI is used to scale the volume and effectiveness of knowledge distribution. Effective knowledge distribution is achieved by predicting trending knowledge areas and identifying targeted knowledge areas based on real-time employee engagement and content consumption.

Knowledge application		
Automation	**Conversational interface optimisation**	**Insight generation**
AI: • creates knowledge graphs as a powerful data structure that represents information in a graphical format. • enables the development of selection and analysis tools to optimise databases considering open and loosely structured sources, such as the internet.	• Staff members learn from the analysis of prior customers' chat transcripts to improve service levels. • AI offers expert systems that able to ensure the induction of tacit knowledge. • AI facilitates the knowledge spiral; between tacit and explicit knowledge. • AI ensures the design of knowledge flow from building blocks of applications that allow the successful communication of all stakeholders. • AI highlights irregularities in KM, including flaws related to the human dimension of knowledge handling.	• AI ensures rapid management of big data and integration into KM systems. • AI systems monitor learning outcomes and use them to create new knowledge. • AI helps KM to generate competitive advantage. • AI helps build expert and other intelligent systems to support and enhance KM. • AI systems optimise and enhance evidence-based decision-making processes.

Knowledge application is the process through which individuals utilise knowledge held by others without acquiring that knowledge. This is achieved through expert systems, decision support systems, advisor systems, fault diagnostic systems, and many more, in instances where normally one or more human experts would need to be consulted.

Conclusion

In conclusion, the AI4KM grid advances new methods for organising, accessing, and exploiting multidisciplinary knowledge. Just as knowledge impacts organisational performance and their capacity to innovate, AI brings additional knowledge modelling, knowledge processing, and problem-solving techniques. AI and KM – two sides of the same coin!

Some examples of AI-related KM applications can be found in the **original article**.

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ACADEMIC CORNER

This section covers academic and research studies, including profiling current and competed Masters and Doctoral Studies.

Are you studying towards a Masters or Doctoral Degree in Knowledge and Information Management? We would love to hear from you. Please share your journey with us, the highs and lows!

Have you recently completed Masters or Doctoral studies in Knowledge and Information Management? We also would love to hear from you, share your work and lessons with us.

Are you conducting research on Knowledge Management you wish to share with us, also get in touch with us using this email address kmsaservices@vdw.co.za.

PhD and Masters Studies

Dr. George Maramba

University of Pretoria

Thesis Title: Towards a Framework for Implementing a Computer-Based Knowledge Management System in Healthcare Organisations

Abstract

The use of computer systems, both simple and complex, has changed the world and the way businesses operate. In modern organisations, the preservation of knowledge has become a mandatory and pivotal obligation. Computer-based knowledge management systems provide sustainable management of organisational knowledge, which is fast becoming integral to the success of modern economies and drivers for success. The adoption of computer-based knowledge management systems further assists organisations to harmonise critical knowledge about their business procedures and processes to effectively collaborate, reuse, and coordinate their efforts. One such sector that requires the complete utilisation of collaborated knowledge is healthcare, seeing as the world population keeps growing while medical costs keep rising. However, available studies show that throughout the world, the implementation of computer-based knowledge management systems is problematic across a multitude of organisations, especially those in the healthcare sector. The implementation of computer-based knowledge management systems is a comprehensive process that requires a well-defined approach, methodology, and skilled- and experienced project teams. Therefore, the need for comprehensive frameworks that may guide implementation is ever increasing. In this study, a framework was developed to enable healthcare organisations to implement computer-based knowledge management systems successfully. The framework was evaluated as an artifact to provide an organisation with guidance when implementing a computer-based knowledge management system while the assessment tool served to measure and determine the organisation's preparedness in implementing a computer-based knowledge management system.

The benefit of the developed framework is that it will provide organisations in the healthcare sector, as well as other organisations, with guidelines to implement computer-based knowledge management systems, whereas the assessment tool will serve to determine their preparedness. The framework provides implementation teams with a holistic approach and guidance and conducts good practice towards implementing a computer-based knowledge management system, which reduces implementation costs and project run time. Additionally, it also provides the foundation and essential aspects from which organisations can develop their implementation strategies, execution, and action plans without having to conceptualise and design a system unaided.

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Why did you decide to study towards a Ph.D. in Knowledge Management?

I love to do research; therefore, it was prudent to acquire the highest level of research abilities to learn and acquire the above-the-norm skills. It is in me to solve problems, to share my experiences, that's the Ph.D. was going to mold me to be an informed better communicator and problem solver. I have always wanted to do a Ph.D. since when I was a child, this was the opportunity. I am passionate about enlightening and sharing what I know, the Ph.D. would make me a better independent researcher. The Ph.D. would open new opportunities in my line of research, advance my research and make me an expert in my subject area.

Why did you choose the topic you chose?

After working in a private healthcare organisation for two years as a Systems Administrator, I discovered that technology was not fully embraced particularly in the administration of patients. I identified a lot of manual work, the absence of integrated and coordinated processes and procedures. Manual documents with critical information were exchanged between the ministry of health and medical organisations. This gave me an idea of the need to bring together knowledge that could be reused effectively, after completing my masters it became clear that conducting research that would enable me to come up with a framework was the most ideal solution.

What was your contribution to the new knowledge on Knowledge Management?

A computer-based knowledge management system implementation framework and assessment tool were the artefacts developed in this study as a business solution to the research problem. The study provides guidelines for implementing computer-based knowledge management systems in the healthcare sector and non-healthcare. Also included in the study are sectional deliverables to enforce both managers and employees to be measured when implementing computer-based knowledge management systems.

The framework provides implementation teams with a holistic approach, guidlines and conduct of good practice towards implementing a computer-based knowledge management system, which reduces implementation costs and project run time. The study brings together scientific, methodological, and practical knowledge on how to implement knowledge systems. The assessment tool enbales an organisation to gauge their prepairedness before embarking on implementing a knowledge system. This study adds a comprehensive KM framework to the body of knowledge, particularly to the healthcare sector.

What challenges did you encourage during your studies?

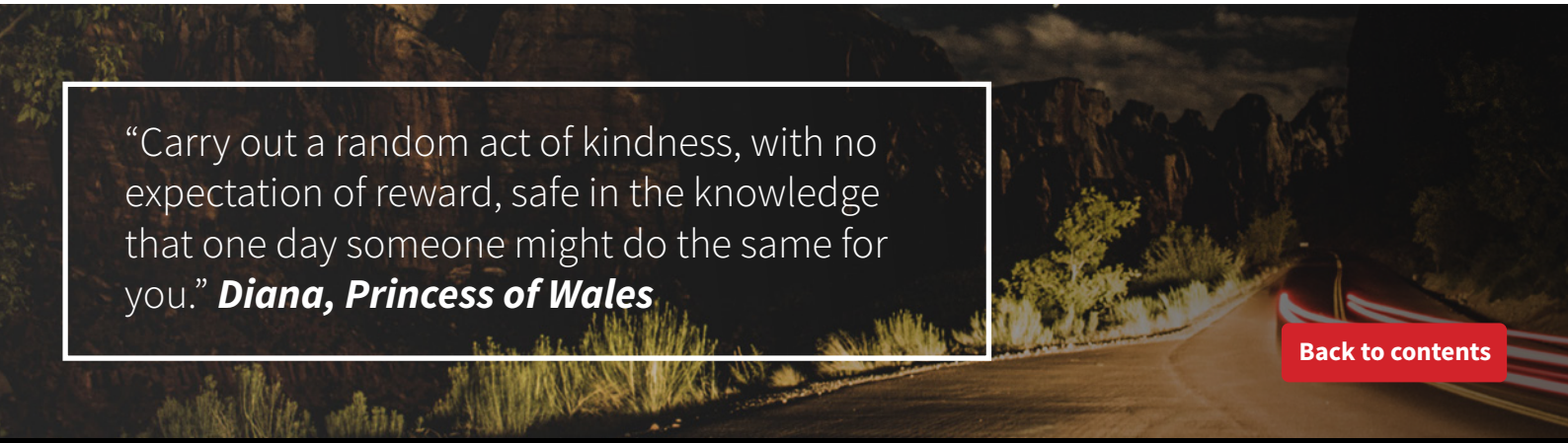
My thesis data collection coincided with the advent of the Corona disease virus 2019 (Covid-19). The data collection was to be performed in the health sector which was already strained by the covid-19 impact. The restriction of movement due to the outbreak of Covid-19 was a major challenge.

How did you remain motivated?

I informed my supervisor that I was not going to pause/stop, I was going to turn this into an opportunity if we were alive. My supervisor told me that this was a critical time where this type of research was needed. I organised and set up online interviews, this speeded up the data collection process, the first round of interviews proved to be very effective as all selected participants were comfortable with online interviews. When I informed my supervisor of the smooth conduct of the first set of interviews, she told me to go into full force and complete data collection earlier than planned.

What is your advice to others on this journey?

- Identify a topic that you believe in, understand the depth of your topic, take time to understand the domain of your topic.
- Investigate how other studies in the same domain to the identified topic has been conducted, envision your journey to test its possibility.
- Identify a supervisor who is in the same domain and who has supervised a thesis along the same subject – no compromising.
- Discuss with your potential supervisor, explain your topic and approach, determine if the supervisor is comfortable with the topic and your level of understanding.
- Once the supervisor has accepted, you need to start right away, follow all the advice given. Remember no supervisor wants their student to fail.
- The PhD is a long journey with ups and downs, it will interfere with every dimension of your life, try to communicate to your family, friends and work colleagues enlightening them about your gruesome journey.



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MULTIMEDIA GALLERY | KMSA LAUNCH

KMSA was formed to take advantage of the hype created by ISO 9001: 2015 (section 7.1.6), which recognised the growing importance of knowledge management (KM) in ensuring the quality of products and services as well as their continuous improvement. In addition, KM Israel was already lobbying ISO to facilitate a standard on Knowledge Management Systems that culminated in ISO 30401: 2018. Participating countries in the ISO process had strong local KM forums as a common characteristic. Public and private sectors in South Africa had widely divergent views on KM as well as belonging to different forums, many of which were only active in social media. As a result, we realised that in order to effectively champion KM in South Africa and participate in the global area, such as ISO, some sort of agreement must be reached, and a unified structure created. Subsequently, on the 8th of July 2016, the KM Study Group, representing private, public, and non-governmental organizations, was organised in order to facilitate the formation of a KM Society in South Africa.

Based on the KM Study Group resolutions, a constitution was drafted and later adopted on the 24th November 2016 at ATNS Office, OR Tambo Airport. It is also at this meeting that an interim board was nominated.

From the Archives – 24 November 2016: *The Launch of KMSA hosted by Air Traffic and Navigation Services (ATNS).*

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