How to Implement Knowledge Management in Emerging Governments in Africa and Beyond: A Case Study on the South African Government

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Abstract: This paper is based on the premise that public officials in developing countries lack the necessary skills to implement Knowledge Management (KM) successfully, so a framework is required to facilitate this process. South Africa is the case study. It is therefore necessary to develop a Knowledge Management Implementation Framework (KMIF). Consequently, one of the objectives of this paper is to validate this need and then outline a KMIF that can help government departments in developing countries implement KM and foster a KM culture. A mixed methodology approach was used, combining qualitative and quantitative data collection. Based on the Taro Yamane formula, 139 people were selected from a target population of 221 officials involved in KM in the South African government. DATAtab, a web-based statistics application, was used to analyze the responses. A comprehensive review of several secondary literature sources was carried out. For the literature review, relevant peer-reviewed articles were downloaded from Google Scholar, ResearchGate, Scopus, and Phil Papers. The study posits that officials charged with KM implementation in the South African government lack the necessary implementation skillset, that a need for a KMIF exists, and subsequently outlines a three-stage KMIF to facilitate their efforts. This study recommends that the proposed three-stage KMIF be adopted since it will provide the government (i) a simplified and structured way of realizing KM; (ii) it will be an effective tool that officials can use to guide them on how to implement KM, and (iii) it will cultivate a KM culture within the government. Even though the study is original to the South African government, the findings, however, may be applied to other emerging governments in Africa and beyond. Despite its theoretical nature, the paper lacks empirical validation, leaving it open to further investigation.

Keywords: knowledge management; knowledge management implementation framework; service delivery; South Africa; South African government.

Introduction

For the past few decades, KM had been gaining attention in the private sector as a key factor of success and the South African government took note. Hopeful of related results and eager to improve service delivery, the government adopted it. This bold decision was taken more than 15 years ago, and with it, came a wave of optimism that government functions would see a similar level of success. The South African government had high hopes for the implementation of KM, expecting it to streamline operations, reduce costs and increase efficiency concerning public service delivery (Koenig, 2018; Ondari-Okemwa & Smith, 2009; Theriou et al., 2011). Unfortunately, despite these ambitions, the implementation of KM has been sluggish and disjointed (DPSA, 2019), leading some to question whether it has achieved its intended goals of improving public service delivery (Davenport & Prusak, 2000; DPSA, 2019; Jayasingam et al., 2020; Ming Yu, 2002; Rowland

& Syed-Ikhsan, 2004; Zack et al., 2009). Barbier and Tengeh (2022) argue that while the South African government is eager to embrace KM, its public officials lack the required implementation skillset to make it a reality. This lack of skills, coupled with other challenges such as limited resources and resistance to change, particularly, reluctance to adopt new technologies or methods of learning can hinder the adoption of KM practices in government departments. It is important to address these challenges and develop strategies to overcome them to ensure successful inter-generational learning (Bratianu et al., 2011; Bratianu & Leon, 2015). Thus, to address these issues, a KMIF is proposed to provide a practical approach to implementing KM and fostering a KM culture within government departments. Without a clearly defined and structured framework with guidelines to follow, successful implementation will not happen.

The case study for this paper is South Africa, but the proposed framework can benefit other emerging governments in Africa and beyond. Because the primary goal of this paper is to justify the necessity for the KMIF, the following research questions were devised. If these questions are answered, the goal will be met, namely: *"Do public officials in developing countries lack the necessary skill set to implement KM successfully, is a framework required to facilitate this process, and what might such a framework comprise?"* Furthermore, the paper uses a mixed methodology approach, combining qualitative and quantitative data collection, to validate the need for a KMIF and outline its components. Overall, this paper seeks to contribute to the literature on KM implementation in developing countries and provide practical guidance for public officials responsible for implementing KM within their organizations.

Literature review

Why a knowledge management implementation framework (KMIF)

KM has gained significant momentum as a critical component of private-sector success (Davenport & Prusak, 2000; Jayasingam et al., 2020; Ming Yu, 2002; Rowland & Syed-Ikhsan, 2004; Zack et al., 2009). According to World Bank President Jim Yong Kim, implementing knowledge is the key to success in service delivery, referring to KM as the bold initiative to tackle the scale of global service delivery challenges (World Bank, 2012). According to Sawe and Rotich (2016) and Kimani (2013), several government departments have difficulty implementing KM. Without a clearly defined, structured framework with guidelines and a well-defined implementation method, Barbier and Tengeh (2022) state public officials will not be able to implement KM successfully. This justifies the need for a KMIF.

Knowledge management (KM)

KM is a complicated and diversified term that has yet to be consistently defined. This lack of a consistent definition means that organisations can interpret the concept differently, depending on their own unique needs and objectives. As such, a wide range of approaches to KM from the use of tools to the implementation thereof exists (Igbinovia & Ikenwe, 2017; Koenig, 2018; Theriou et al., 2011). However, getting the right knowledge to the right person at the right time is the common thread of KM. In this paper KM is defined as follows: KM is not about capturing, storing, or using knowledge for the sake of capturing, storing, or using knowledge. KM is about ensuring the correct knowledge reaches the correct public official at the correct time so that well-informed decisions are made that provide value to the South African government for it to achieve its objectives outlined in Section 195 of Chapter 10 of the Constitution of the Republic of South Africa, 1996.

Additionally, as Barbier and Tengeh (2022) put it, KM reduces the gap between what employees know and what they can do.

Benefits of KM

As the economy transitions to a knowledge-based economy, employers' competitiveness is dependent on their employees' knowledge and skills (Figurska, 2014). Knowledge is therefore, more valuable than labour, property, and financial wealth. It has been proven that KM can enhance employee, team, and organisational productivity and give them a competitive advantage over their competitors (Figurska, 2014). As a result, they make better decisions, solve problems, build a sense of community within their organisation, and remain up to date on procedures and technology. The following are some of the benefits of KM: good decision-making; Smarter, faster, more efficient knowledge-based workforce that reduces duplication of efforts, saving money, time, and resources (Koenig, 2018; Ondari-Okemwa & Smith, 2009; Wiig, 2002); employees that can 'do more with less' (Wiig, 2002); successful citizen participation in public decision-making; competitive increase of society's intellectual powers; closes the gap between knowing and doing (skills) (Sawe & Rotich, 2016); innovative employees (Sawe & Rotich, 2016); efficient performance (Theriou et al., 2011); reduction in effort (DPSA, 2019); little to no mistakes and malpractice (DPSA, 2019); process and work method improvement (DPSA, 2019); and decreased dependence on consultants (DPSA, 2019). Most of the benefits of KM come from improving decision-making by using intellectual capital (Chib & Sehgal, 2019; Mohajan, 2017).

Knowledge management critical success factors (KMCSF)

KM is not an easy task to implement in any organization (Hai Sin et al., 2009). Having well-defined criteria for success is essential (Winkler & Mandl, 2007). In the past few years, several criteria considered vital to the success of KM have emerged. According to Theriou et al. (2011), they are known as Critical Success Factors (CSFs) (see Table 1).

Table 1. KMCSFs

Author	Year	Knowledge Management Critical Success Factors
Arthur Andersen and APQC	1996	Leadership, organization culture, technology, and measurement.
Earl	1997	Information Technology, people, and corporate culture.
Skyme and Amidon	1997	A strong link to business imperative, a compelling vision and architecture knowledge leadership, knowledge-creating and sharing culture, continuous learning, well-develop technology infrastructure and systematic organization knowledge processes.
Holsapple and Joshi	1997	Managerial influences, Resource influences and Environment influences.
Davenport et al.	1998	A clear purpose and language, a standard and flexible knowledge structure, multiple channels for knowledge transfer, organization culture, technical and organizational infrastructure change in motivational practices and senior management support.
Liebowitz	1999	Strategy with the support of senior management, chief knowledge officer (CKO) or equivalent and a Knowledge Management infrastructure knowledge ontologies and repositories Knowledge Management systems and tools, incentives to encourage knowledge-sharing and supportive culture.
Arthur Anderson Business Consulting	1999	Information Technology, people, and corporate culture.

APQC	1999	Leadership, organization culture, measurement, and technology.
Stankosky and Baldanza	2000	The organisation's technology, leadership, and learning
Holsapple and Joshi	2000	Culture, leadership, technology, organization adjustments, employee motivation and external factors.
Andrew et al.	2001	Information Technology, organization structure, corporate culture, knowledge obtainers, knowledge, transfer, knowledge application and knowledge protection.
Chourides et al.	2002	Strategy, human resource management (HRM), IT, quality, and marketing.
Hasanli	2002	Leadership, organization culture, structure, roles and responsibilities, IT infrastructure and measurement.
Davenport and Probst	2002	Leadership, performance measurement, organization policy, knowledge 2002 sharing and acquisition, information systems structure, benchmarking, and training.
Bixler	2022	Leadership, organization technology and learning.
Mathi	2004	Culture, Knowledge Management organization systems and IT infrastructure effective and systematic processes and measures.

Source: adapted from Theriou et al. (2011, pp. 103-104)

It is common for KM terms to be used interchangeably. A KMCSF can also be referred to as a KM Enabler (UKEssays, 2018).

Due to its popularity in the private sector, particularly among consultants, and its substantial benefits, the South African government adopted KM over 15 years ago (Adler, 2019; Davenport & Prusak, 2000; DPSA, 2019; Jayasingam et al., 2020; MingYu, 2002; Rowland & Syed-Ikhsan, 2004; Sawe & Rotich, 2016; Zack et al., 2009). Consequently, according to DTPW (2019), today, the South African government is legally mandated by the following pieces of legislation to implement KM in their respective government departments, namely: Constitution of the Republic of South Africa, 1996; Minimum Information Security Standards of 1996; Public Service Act, 1994; National Archives and Records Service of South Africa Act, 1996; Provincial Archives and Registry Service Act of the Western Cape, 2005; Promotion of Access to Information Act, 2000; Protection of Personal Information Act; Public Finance Management Act, 1999; State Information Agency Act, 1998; and Intergovernmental Relations Framework Act, 2005. As such, in the South African government, it is the responsibility of the DPSA to embed KM. The DPSA developed a National KM Strategy Framework to be implemented across all levels of government in South Africa (see Figure 1). With this framework, departments are provided with structure and direction for KM (Williams, 2015). KMIF must include the CSFs as they are vital to the South African government's KM implementation.
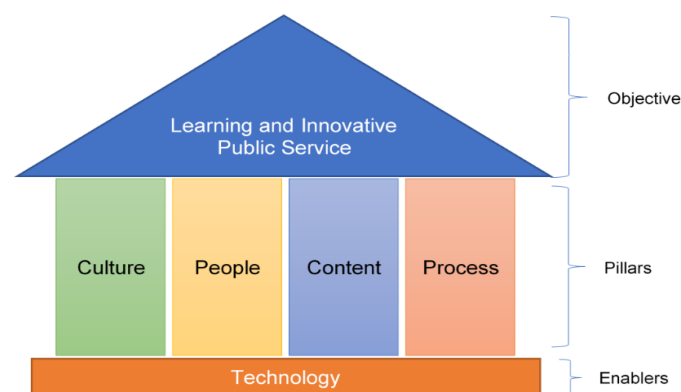

Figure 1. DPSA KMCSFs
(DPSA, 2019)

Culture, people, content, and process comprise the four pillars of DPSA's National KM Strategy Framework, while technology serves as an enabler (DPSA, 2019). The KMIF embodies these pillars and incorporates them with the skills and mechanisms required for improved service delivery. In the South African context, improved service delivery is attained when the key objectives outlined in Section 195 of Chapter 10 of the South African Constitution are achieved. Figure 2 below illustrates how the KM Objectives, Pillars, and Enablers are distinct but interrelated and how it contributes to a KM Culture.
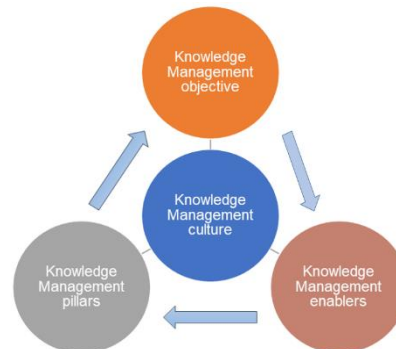

Figure 2. KMCSFs
Source: own construct

The KMCSFs are briefly explained below:

- KM Objective: The strategic goal to be achieved;
- KM Pillars: Supports the achievement of the KM Objective. The three well-known KM Pillars are People, Process and Technology (Chan, 2017):
  ▪ People at all levels of the organization, from the top to the bottom, are involved in KM (Chan & Lau, 2021);
  ▪ Organisations use the intentional KM Process Pillar to capture, store and use knowledge (Chan & Lau, 2021); and
  ▪ Technology promotes quick knowledge flow and exchange among employees and organizations. KM is more successful in organizations that make technology-related services widely available to their employees (Chan & Lau, 2021);
- KM Enablers: KM Enablers support the KM Pillars in achieving the KM Objective.

Overall, since these three elements collectively collaborate to embed a KM culture in an organization it will be included in the KMIF. Furthermore, ignorance and oversight of the CSFs can deter an organization's effort to successfully implement KM (UKEssays, 2018). Hence, the CSFs are extremely important and form the basis for the KMIF.

KM tools

Koenig (2018) argues that to manage knowledge effectively, certain basic KM tools must be in place:
- Enterprise Content Management (ECM): ECM is a crucial part of KM, as it provides document management technology (Hajric, 2018). It is a major tool in the KM process;
- Knowledge Retention and Retirees: It is important to think about ways to protect the knowledge and skill base of both seasoned workers and those who are about to retire;
- Lessons Learned: Documenting lessons learned is an essential step to ensure that errors are not repeated, saving precious time and resources;
- Expertise Locator System: Wells (2016) states that an expertise locator system is a beneficial tool to identify and find employees with specific abilities or knowledge; and
- Communities of Practice: This is an inter-generational learning tool for industry experts to trade their most effective approaches and give advice, inquire about challenges and chances, examine proven strategies, deliberate lessons obtained, and help each other out,

especially the younger generation (Bratianu & Leon, 2015; Hajric, 2018; Wenger, 1998; Wenger & Snyder, 1999).

Snowden (2002) argued that it is not easy to assess if an employee is passing on their knowledge to other employees. That is, it is difficult to determine if intergenerational learning, described by Bratianu et al. (2011) as an open process where people of different generations learn from each other, is taking place. In intergenerational learning, tacit knowledge and competencies that require experience and skills are acquired rather than explicit knowledge, which is the knowledge that can be more readily articulated, codified, stored and accessed by the next generation. In intergenerational learning, according to the law of entropy, knowledge is transferred from experts to beginners (Bratianu & Leon, 2015). This, as Snowden (2002) states, is difficult to assess directly. However, he suggests that it is possible to assess if all the basic KM tools have been put in place and are being used properly by everybody. Subsequently, the new framework must assess the status of all tools and further assess whether the public officials are knowledgeable in implementing them. This way, any inadequacies in the implementation of KM will be accurately pinpointed and can then be suitably handled to ensure successful KM.

Methodology

Since this study is located within the social environment we inhabit, which is comprised of various interpretations, meanings and realities, the researchers adopted the interpretivism research philosophy approach. The researchers believe that all points of view on the subject matter will help answer the research question (Saunders et al., 2019). The issue was explored through a review of the literature on KM, as well as the results of an interview and questionnaire completed by officials responsible for the implementation of KM in the South African government. Overall, the scope of this paper was exploratory and descriptive. According to Saunders et al. (2019), the researcher, when planning how their research study will be conducted, must first determine whether it is a snapshot taken at one moment in time or if it more closely resembles journal entries made over an extended period. Consequently, this paper was cross-sectional as the research population was not monitored over time, which was appropriate because cross-sectional studies frequently employ the survey strategy to gather data (Saunders et al., 2019).

Sampling technique

Saunders et al. (2019) state that how a researcher plans their study has an impact on the type of data they need, the sources from which they must obtain the data and the subjects from whom they must collect it. Thus, the first step is to supplement the empirical survey with a representative sample of the research population (Veeran, 2012). To put it another way, determining "who, where, and what the research population is": who: 221 officials responsible for the implementation of KM in the South African government; where: South Africa's national and provincial government; research population: officials responsible for the implementation of KM. Among these is the official responsible for coordinating KM throughout the national and provincial governments of South Africa.

As a result of time, money, and resource limitations, a representative sample was generated to reduce the number of cases in the research population (UMSL.edu, 2021). With the Taro Yamane formula (n = N/K (1) + N (e)2), the large research population was reduced to 139 officials (Adam, 2020; Radhakrishnan, 2014; Taherdoost, 2017; Umsl.edu, 2021; Wisdom & Creswell, 2013).

Data collection

A survey questionnaire and a personal Internet interview were used to collect primary data. A literature review was used to gather secondary data. As part of the questionnaire, closed-ended, Likert, and open-ended questions were included (Makanyeza et al., 2013). The questionnaire was created in Microsoft Forms and distributed via the Microsoft Office 365 online platform to both national and provincial government officials. In Morton et al. 2012), it is stated that not all sampled individuals will complete the questionnaire. This resulted in the distribution of the survey questionnaire to all 221 government officials (research population). The purpose was to increase response rates and address questions related to quality and validity. In this study, the researcher conducted one-on-one online interviews with the respondent. In this way, those being interviewed could express themselves privately without being limited by the researcher's structure (Bolderston, 2012). Information was gathered from the interviewee based on the interview schedule. Additionally, the researcher, to increase the validity of the results, used more than three data sources - documents, organisational records, a survey interview as a survey questionnaire, as well as a personal Internet-based interview.

Data analysis and interpretation

Both quantitative and qualitative data were collected. For quantitative purposes, both national and provincial government officials were asked to complete an online survey questionnaire. The quantitative survey questionnaire was created using Microsoft Forms. The target population was sent an email with a link to the online questionnaire to collect the data. The data were collected in real-time in Microsoft Excel, i.e., when respondents finished the online survey questionnaire, their data were immediately recorded in a Microsoft Excel file in the Microsoft Office 365 online cloud, accessible by the researcher. The collected data were uploaded to 'DATAtab,' a browser-based statistical analysis application, for statistical analysis and processing (Alves, 2021; American Statistical Association, 2020; ComputeMeta, 2022; Hackl, 2021). For qualitative purposes, a personal Internet-based interview was held with the DPSA official responsible for coordinating KM implementation nationally and who hosts the DPSA National KM Forum.

The qualitative data collected from the personal Internet-based interview was separately analysed, which requires different analysing tools and techniques. Here induction data analysis (induction reasoning) was applied, which is the ideal qualitative content analysis method for this study. The purpose of the approach was to validate that the implementation skills of the respective officials responsible for implementing KM are lacking and that a need for the proposed framework exists. The research objectives were achieved, and the KMIF was developed. Also, despite its theoretical nature, the paper lacks empirical validation, leaving it open to further investigation.

Results

Of the questionnaire respondents who took part in the survey, 63.1% (n=41) were female, while 39.9% (n=24) were male. Of the respondents, 69.2 % (n=45) were between the ages of 41 and 60. The data shows a broad range of experience i.e., 73.8% (n=48) who took the survey each have a total work experience of 15 years and more. About 58.5% (n=38) of the government officials who participated in the survey were from the provincial government, while 41.5% (n=27) were from the national government. According to the results, government officials responsible for implementing KM in their respective departments have varying employment levels. Less than half (43.1%) of the respondents were Deputy Directors, whereas 30.8% (n=20) were Directors and up. The remaining

value (26.2%) was from junior management and lower-level staff. Consequently, these officials have varying perspectives on how to implement KM. The key objective of the survey was to validate the claim that public officials responsible for implementing KM in government lacked implementation skills. Results show that 52.3% (n=34) of respondents believe they require KM training due to a lack of skills. The question was rephrased to further validate the response on skills. Consequently, 64.7% (n=42) of respondents did not believe they have the necessary expertise to implement KM in their department.

The qualitative results that validate and support the quantitative claims are discussed below.

During the internet-based personal interview, the interviewee made the following statement:

> Staff implementing KM do not have the prerequisite skills. One person I spoke with yesterday said, public service managers are not readers. People are confined to achieving targets and do not want to look at smart ways to enable them to achieve targets better. In the public service, the implementation of KM is very slow…We want to reach targets but the plans and strategies we develop are not well-informed…We plan from an uninformed space…The implementation of KM in the South African government is disjointed because currently, we have departments who do things just for compliance purposes…some departments developed their KM strategies without doing knowledge audits and then some departments hire consultants to develop some of their KM products. KM assists with providing factual and evidence-based knowledge that is needed to bridge the gap between the one who is providing a service and the one who is receiving a service… Most leaders do not understand the link between KM and the NDP goals… KM will be able to give the correct information. If we are well-capacitated, will also be able to develop guides and tools that will capacitate the department, to be able to provide excellent services. The policy papers we develop will provide the correct context and correct content that will inform the government's plans and everything else. Then the governments' strategies will provide value. We, KM, will also at the same time develop tools that will support the government's strategies… To shorten the timeframe and to be able to do well-informed projects.

Additionally, respondents were asked to list a problem that makes it hard for their department to implement KM, as well as how KM can be implemented better (see Table 2).

Table 2. Qualitative results

Problems that make it hard for your department to implement KM?	How can KM be implemented better?	Freq. %	Valid %
Senior management buy-in.	Structure it correctly.	1	1.5%
Officials do not feel the need to participate in KM initiatives to drive a knowledge-sharing culture.	Value the input and guidance provided by KM practitioners regarding KM practices.	1	1.5%
SMS involvement lacking.	Co-operate.	1	1.5%
Lack of understanding of the importance of KM initiatives by leadership and KM is not embedded as part of everyone's role and responsibility.	Ensure that KM is discussed at every strategic engagement and that the necessary investments to change the culture would be made.	1	1.5%
Staffing.	Ensure that the unit and all its Strategies lead the way we deal with Corporate Knowledge as a whole.	1	1.5%
Lack of Top Management involvement in KM initiatives and staffing KM units.	Participate in KM initiatives from the highest level.	1	1.5%
KM is utilised by office managers.	Implement it in its entirety.	1	1.5%
Not enough human resources to implement KM initiatives	Support it by investing in human resources and budget in the KM unit.	1	1.5%
Understanding the need for KM.	Recognise KM and appoint at least a records manager.	1	1.5%
Shortage of staff, No tools for KM and enough support from Management.	Design the Departmental structure to favour KM personnel.	1	1.5%
The unwillingness of the older generation to adopt new ideas and ways of work.	… Implement relevant systems to ensure a capable and effective public service.	1	1.5%

Problems that make it hard for your department to implement KM?	How can KM be implemented better?	Freq. %	Valid %
Lack of human resources - I am the only employee.	Provide basic resources to ensure that it is properly institution and sustainable	1	1.5%
The emphasis on KM's importance is only verbal but not in a form of policy.	Institutionalise it through performance agreements for each employee so that KM is not seen as an additional unnecessary task.	1	1.5%
KM is located under a specific line function and not under corporate services, where it should reside within the Strategic Planning unit, along with Monitoring and Evaluation and Risk Management (the department does not have a business process or organisational design unit as it is a small department)	Include the head of the KM team in all strategic planning meetings and all corporate governance committees.	1	1.5%
Reliance on SharePoint as the only official records management repository.	Prioritise the funding needed for KM programmes.	1	1.5%
Lack of participation by staff members in KM initiatives.	Ensure approval of a KM Strategy and policy.	1	1.5%
Resource constraints.	Beef-up personnel in KM.	1	1.5%
Budget.	Improve efficiencies and drive service delivery improvement	1	1.5%
Funding and adequate resourcing.	Implement and apply it fully.	1	1.5%
Lack of support from leadership.	Not duplicate projects.	1	1.5%
Dedicated resources to guide/onboard others as KM are everyone's responsibility	No comment.	1	1.5%
Buy in.	Implement and resource it.	1	1.5%
Lack of buy-in from management and unwillingness to share information within their functional area.	Actively promote the implementation of the Departmental KM Strategy.	1	1.5%
Not being sure of how to define KM and what its functions are.	Ensure that we have a fully equipped KM unit that is given the necessary support for them to fully implement KM.	1	1.5%
KM is not aligned with Department's strategies hence it is difficult to implement.	Support the KM activities and support the development process of the KM Strategy.	1	1.5%
The bottom-up approach in planning, implementation and no alignment of KM strategy with departmental strategy.	They would regard knowledge as a strategic resource.	1	1.5%
Buying in by Management and Leadership and lack of human and operational resources.	Drive it at the Executive Management level.	1	1.5%
Entrenched silos.	Invest more in research and development	1	1.5%
Many silo systems and processes.	Enhance and streamline processes.	1	1.5%
Capacity - staff already stretched to perform basic outputs and fill gaps.	Drive a large-scale information and awareness campaign on the need and means for KM.	1	1.5%
Shortage of staff.	They would not treat it as a separate unit instead locating it where it would be easier to be embedded in the processes of the department.	1	1.5%
Lack of understanding of the importance of managing knowledge.	We would be able to give the needed support on policy implementation as well as have an informed policy review process.	1	1.5%
Moral of staff is low. In terms of structure, the vacant posts must be filled.	Ensure that the framework is fully implemented and contributes toward skills development for continuous improvement within the Department.	1	1.5%
The implementation is not a problem, this we do subconsciously. It is the defragmentation of all KM components that is a challenge. E.g., there is no central point or fault to access KM info. access	By now have formalised a staff structure to support KM and equip it with the necessary tools.	1	1.5%
Institutional memory.	Have better planning processes.	1	1.5%

Problems that make it hard for your department to implement KM?	How can KM be implemented better?	Freq. %	Valid %
Manpower and expertise.	Be able to implement a great succession plan to continue to deliver excellent service.	1	1.5%
No Wi-Fi in some of the regions.	Learn more about it.	1	1.5%
Finances and buy-in from management.	Support it and put it on the strategic objectives.	1	1.5%
Buy-in and other 'strategic' tasks.	Prioritize the KM Assessment. When I refer to Department, I mean my Chief Directorate	1	1.5%
Officials do not have an interest.	Put it at a strategic level.	1	1.5%
Budget.	Implement it.	1	1.5%
Participation by other departments.	Appoint KM expert.	1	1.5%
Silos do not understand the need for KM and think is not everyone's responsibility.	Invest in KM principles i.e., people, processes and systems.	1	1.5%
Lack of top and senior management support for KM initiatives	Ensure that top management does value its importance.	1	1.5%
Lack of support from political office.	Support the KM unit.	1	1.5%
Know-how and misunderstanding of the knowledge impact.	Implement the KM strategy and policy in place.	1	1.5%
KM is seen as an add-on to daily activities and not as a platform to assist with service delivery.	Promote engagements in KM at all levels.	1	1.5%
Inability to identify a unit responsible for KM. Lack of understanding of the purpose of KM.	Follow up on information shared at KM workshops.	1	1.5%
Understanding KM and how it will be implemented KM is an enabler and dependent on core business.	Support the implementation, fund the initiatives and ensure that KM is embedded in the Performance Agreement of each employee to enforce the contribution	1	1.5%
Leadership buy-in and support.	Elevate it to the strategic level.	1	1.5%
Department has a poor ICT infrastructure to carry such a system needed.	Put more financial and human resources into establishing the KM system as soon as possible.	1	1.5%
Readiness, resource & capacity, understanding.	Make a concerted effort to orientate staff using experts in the KM field, who has gone through the lessons-learned process.	1	1.5%
Our office is not used to information sharing.	Improve the service delivery in the department.	1	1.5%
KM is not having a director.	Hire staff strictly for KM.	1	1.5%
Despite efforts to clarify the role of KM, the management of my department is still adamant that KM and Librarianship share the same things.	Recognise KM as a strategic function and support KM initiatives	1	1.5%
Not enough resources, not enough expertise and too much to implement with fewer resources.	Allocate enough resources (People) to the Unit to oversee and implement KM.	1	1.5%
Information is considered confidential business units working in silos.	Preserve departmental knowledge and avoid knowledge loss (institutional memory).	1	1.5%
Limited capacity / no dedicated capacity.	Change the culture to allow for knowledge-sharing	1	1.5%
Staff skilled in the practice.	Ensure we have all the resources needed to implement the tools and to include them in the APP and strategic plan of the department.	1	1.5%
IT is not a KPI across roles and is not linked to performance	Use it in their day-to-day work.	1	1.5%
We do not have an experience in KM to be able to implement it in our department.	Improve service access to best practices.	1	1.5%
Auditor-General requiring hard copy signatures.	Purchase the necessary software and hardware and develop internal capacity.	1	1.5%
Lack of interest, KM is not a priority.	Monitor and evaluate the effectiveness of services rendered in KM and improve on weaknesses.	1	1.5%
Extreme silos in working towards a common objective where managers are	Have a constant source of reliable, credible and timely evidence to inform decisions,	1	1.5%

Problems that make it hard for your department to implement KM?	How can KM be implemented better?	Freq. %	Valid %
only concerned about the work of their unit.	reporting and policy analysis across all areas of the business (mandate) of the department.		
Lack of knowledge and understanding by Management and Organization Design Unit. Lack of cooperation from Content owners.	Place it correctly in the Organizational Structure and allocate enough relevant human resources to the unit.	1	1.5%
Total		**65**	**100%**

Source: own elaboration

Based on both qualitative and quantitative results, the following conclusions can be drawn: KM is not a priority; Extreme silos in working towards a common objective where managers are only concerned about the work of their unit; Lack of knowledge and understanding by Management about KM; Lack of cooperation from content owners; Business units working in silos; Limited capacity or no dedicated capacity; Officials do not feel the need to participate in KM initiatives to drive a knowledge-sharing culture; and Senior Management Staff involvement lacking i.e., they lack interest in KM.

The following practical recommendations are provided by the respondents for solving the key problems preventing KM from being implemented in the South African government: establish a clear understanding of the goals and objectives of KM; preserve departmental knowledge and avoid knowledge loss by institutionalising KM; establish clear guidelines on what information can be shared and with whom; identify and engage key stakeholders who can support the implementation of KM; ensure that all the necessary resources (people, technology, tools) are available to implement KM; provide training and support to employees to ensure they are certified to understand their role in KM and how to use the KM tools provided; develop a comprehensive plan that outlines the steps required to implement KM successfully; and measure and evaluate the success of KM regularly, using metrics that align with the KM goals and objectives.

Furthermore, based on Table 3 below, the need for a KMIF exists.

Table 3. Cross-tabulation between "I do not need to be trained on how to implement KM. I have the skills to do so" and "I need a framework to guide me on how to implement KM in our department".

		I need a framework to guide me on how to implement KM in our department.					
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
I do not need to be trained on how to implement KM. I have the skills to do so.	Strongly Agree	2	2	1	0	1	6
	Agree	3	9	1	2	0	15
	Neutral	3	4	2	1	0	10
	Disagree	10	10	1	0	0	21
	Strongly Disagree	6	4	0	3	0	13
	Total	6	15	10	21	13	65

Source: own elaboration

Discussion

The central argument of this paper is that officials responsible for implementing KM in their respective departments lack the necessary implementation skills to do so. Without a clearly defined and structured framework with guidelines to follow, successful

implementation of KM will not happen. Therefore, the paper proposes a KMIF to provide officials with a practical approach to implementing KM and fostering a KM culture within their organizations. The proposed framework can benefit not only the South African government but also other emerging governments in Africa and beyond. Furthermore, according to the results of this study, it is clear that officials who are responsible for implementing KM in their respective departments lack the implementation skills to do so. Consequently, a KMIF, therefore, is in order. What such a framework may comprise is presented below.

KMIF components

The KMIF embodies the four pillars of DPSA's National KM Strategy Framework, which are Culture, People, Content, and Process. The framework comprises three stages: Stage 1 - Assess, Stage 2 – Address, and Stage 3 – Action. These components are aligned with the overall KM objective, which emphasizes the importance of providing accurate and timely information to decision-makers to achieve the government's objectives. This is discussed below.

KM goal and objective

In this paper, the goal and objective of KM in the South African government are "To ensure the correct knowledge reaches the correct government official at the correct time so that well-informed decisions that provide value to the South African government for it to achieve its objectives outlined in Section 195 of Chapter 10 of the Constitution of the Republic of South Africa, 1996."

Pillar 1: Culture
A KM culture can only be established with the support of political and administrative leadership (DPSA, 2019). By exhibiting passionate endorsement of KM from top-level leadership, an effective and healthy KM culture will be cultivated. When leaders are committed to the implementation of KM, they help create an environment of organized productivity. At an operational level, public officials will incorporate and apply KM into their everyday activities, eventually leading to it becoming part of the corporate culture. At a strategic level, a healthy and effective KM culture will ensure the correct information is used to provide maximum value (Barbier & Tengeh, 2022).

Pillar 2: People
If the relevant expertise and competencies are not available to the South African government, KM will not succeed. Among the service delivery skills public officials should be adept at are Results-Based Monitoring and Evaluation (RBM&E), Strategic Planning, Programme and Project Management, as well as Change Management. Having these skills is essential for implementation. Consequently, the aim of the people pillar must entail the cultivation of such skills using mentorship, coaching, succession planning, and recruitment (DPSA, 2019):
- RBM&E: The RBM&E framework has been widely used since the 1990s and focuses on results instead of activities (Bhattarai, 2020; Gebremedhin et al., 2010);
- Strategic Planning: Abazov (2019) argues that good, effective strategic planning is essential to achieving positive results, and that service delivery can only be effective if the strategy is excellent and coordinated. Therefore, public officials must incorporate strategic planning into their skill sets (Bryson & George, 2020). The VMOSA (Vision, Mission, Objectives, Strategies, Action Plans) is suggested as a planning framework since it can be used by the South African government and any other organisation to transform goals into actions (CommunityToolBox, 2022);
- Programme and Project Management: Before beginning any new venture, it is imperative to have a strong understanding of Programme and Project Management. Without it, the chances of achieving the desired outcome are slim. Because of its

importance, a standard and consistent methodology for Programme and Project Management is essential (Department of the Premier, 2015). The South African government must prioritise the training of its public officials in an effective Programme and Project Management methodology that is common both in the international and local public sectors. The three popular Programme and Project Management methodologies are Project Management Body of Knowledge (PMBOK), PRojects IN Controlled Environments (PRINCE2), and Agile (Department of the Premier, 2015). In the Western Cape Government, PMBOK is the current practice, and it works well (Department of the Premier, 2015); and

- Change Management: The goal of Change Management is to manage and reduce resistance to the changes that an organization undergoes from one state to another. As a result, Change Management is a key component of Programme and Project Management. Change management is crucial to the success of initiatives implemented by project managers. The respective public officials responsible for KM implementation must therefore be proficient in Change Management. KM cannot be implemented successfully without it (Hamdo, 2021). Four well-known Change Management models are:

- Kurt Lewin's Change Management Model: An American psychologist named Kurt Lewin developed his three-stage model of change in 1947: unfreeze, change, and refreeze, i.e., to change the status quo, you must first unfreeze it;

- Kotter's 8-Step Change Management Model: A Harvard University Emeritus Professor, John Kotter developed this model, which involves creating urgency, building a strong coalition, defining a clear vision for change, communicating the vision, empowering actions, achieving short-term wins, building on the change base reached, and stabilizing change;

- McKinsey 7s Model: This model was developed by Waterman, Peters, and Phillips in 1980. Companies are analysed from seven different perspectives: strategy, structure, system, skills, personnel, style, shared values; and

- ADKAR Model: The ADKAR Change Management Model was developed by Jeffrey Hiatt, an entrepreneur and founder of Prosci Learning Centre. Hiatt suggests five stages for addressing individual resistance to change: Awareness, Desire, Knowledge, Ability, and Reinforcement.

Pillar 3: Content
A document and a person are both sources of content. Therefore, effective, and efficient Content Management is a fundamental factor in KM (DPSA, 2019).

Pillar 4: Process
The Process Pillar is focused on Records and Information Management, covering aspects such as file planning, registry, and records management. The ambition of this Pillar is to make all records and information processes easier, faster and with documents or information easily accessed without being lost in the system (DPSA, 2019). Consequently, the following service delivery mechanisms are fundamental components of the Process Pillar in the newly devised KMIF:

- Batho Pele Initiative: In 1997, the Mandela administration launched Batho Pele, an initiative designed to transform public service delivery. As part of its Batho Pele strategy, public officials are encouraged to become more service-oriented and citizen-focused, as well as to continuously strive to improve service delivery. The Batho Pele Initiative is a simple, transparent way for people to hold elected officials accountable (DPSA, 2013). According to ETU, Batho Pele refers to eight principles: consultation, standards, redress, access, courtesy, information, openness, and transparency, as well as value for money (ETU, 2020). The Batho Pele brand has become a well-known symbol of government transformation, but according to the DPSA (2013), its implementation has been disappointing. So, in 2001, the Batho Pele Revitalization Strategy was adopted by government departments to revitalize the country. Unlike the original Batho Pele

initiative, the Batho Pele Revitalisation Strategy aims to instil Batho Pele culture in public officials and improve public service delivery (DPSA, 2013);

- Service Standards: The South African government utilizes service standards to assess their transformation agenda (The Batho Pele Handbook, 2003; DPSA, 2013). This metric, signal, or benchmark indicates the present state or level of achievement and gives an insight into how much progress is being made (Public Service Commission, 2005). Without service standards, it would be challenging for the government to determine the effectiveness and consistency of their transformational efforts (Batho Pele Handbook, 2003). Presently, service standards are used to evaluate how well government departments provide services (Public Service Commission, 2005);

- Public Service Charter: In recent years, public service charters have become a popular instrument used in the reform of Public Administration in many countries. Public service charters are essentially an agreement between the government, public servants, and people. that details what people can expect in terms of services offered by the government (Clark, 2012). Public service charters demand that public officials exhibit integrity, proficiency, excellence, truthfulness, and fairness, and take a stand against bribery and corruption, nepotism, mismanagement, and any other activity that could harm or detrimentally impact the public interest (South Africa, 2013); and

- Service Delivery Improvement Plans: The South African government discovered that it was difficult to get public officials to move from 'knowing' to 'doing' when the regulatory framework was being rolled out into the public sector (International Labour Office, 2011; DPSA, 2013), meaning they lacked implementation skills. To address these challenges, the Service Delivery Improvement Plan (SDIP) was developed (DPSA, 2013). According to the Public Service Regulations of 2001 (DPSA, 2013), all departments must implement SDIPs.

Enabler 1: Technology
Information, Communication and Technology (ICT) systems play an important role in facilitating KM (DPSA, 2019). It provides a platform for capturing, organizing, storing, sharing, and applying knowledge. ICT must be included in the new framework since it serves as both a support and a cross-cutting enabler for each of the four KM pillars (Igbinovia & Ikenwe, 2017).

KMIF stages

KMIF consists of three separate but interrelated stages: Assess, Address, and Action. Each of the three stages addresses specific deliverables and in turn, produces a tangible product. That is, the data collected from one stage feeds the subsequent stage and so on. More on this follows.

Stage 1: Assess
This stage deals with the current state of KM in departments (see Figure 3). Here the aim is to conduct a situational analysis of the existing condition of KM in each department. At the beginning of each financial year, a new baseline must be established and compared to the preceding baseline. If any deficiencies or gaps are found during this stage, they will be transferred to the 'Address' stage for resolution. A KM Maturity Assessment is a key output of this process, which must be performed annually to measure the state of each department's KM. Here the CSFs, i.e., KM Objective, KM Pillars (People, Process, Technology and Content) and KM Enablers are assessed.
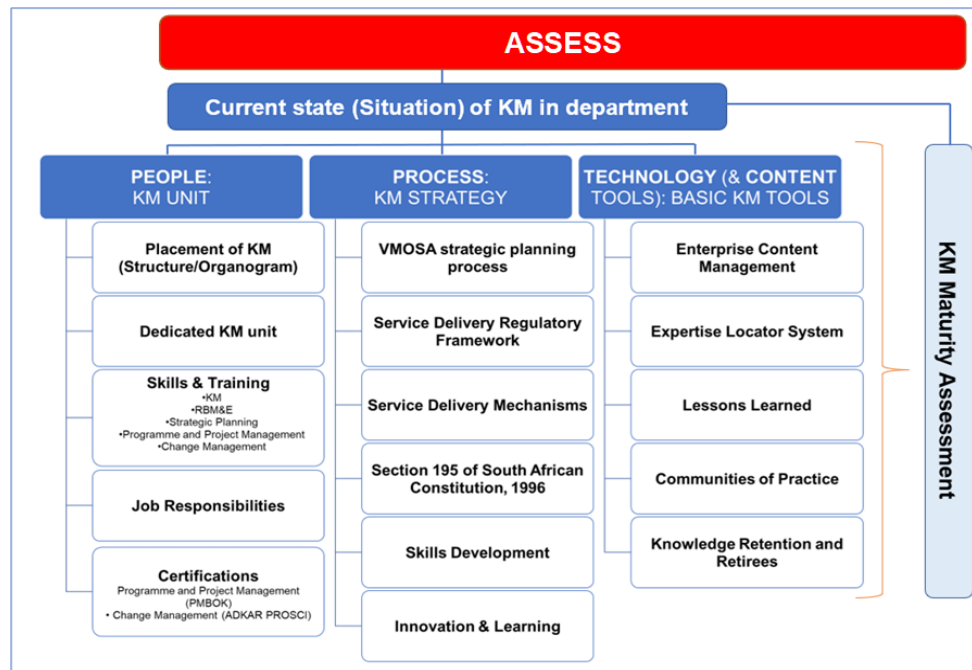
Figure 3. KMIF Stage 1- Assess
Source: own construct

Stage 2: Address

The second stage of the framework is tasked with the responsibility of developing and/or revising the strategies and plans that will be used by each department to successfully implement KM (see Figure 4). The shortfalls and gaps identified from the situational assessment activity conducted in the preceding stage inform this section. In addition to the KM Strategy, the Project Management Plan is the deliverable that must result from this stage, which includes the following:

- People: KM unit: Placement of KM (Structure/Organogram), Dedicated KM unit, Skills & Training (KM, RBM&E, Strategic Planning, Programme and Project Management, and Change Management), Job Responsibilities, Certifications (Programme and Project Management - PMBOK, and Change Management - ADKAR PROSCI);

- Process: KM Strategy (new or revised): VMOSA strategic planning process, Service Delivery Regulatory Framework, Service Delivery Mechanisms, Section 195 of South African Constitution, 1996, Skills Development, and Innovation & Learning; and

- Technology and Content: Enterprise Content Management, Expertise Locator System, Lessons Learned, Communities of Practice, and Knowledge Retention and Retirees.
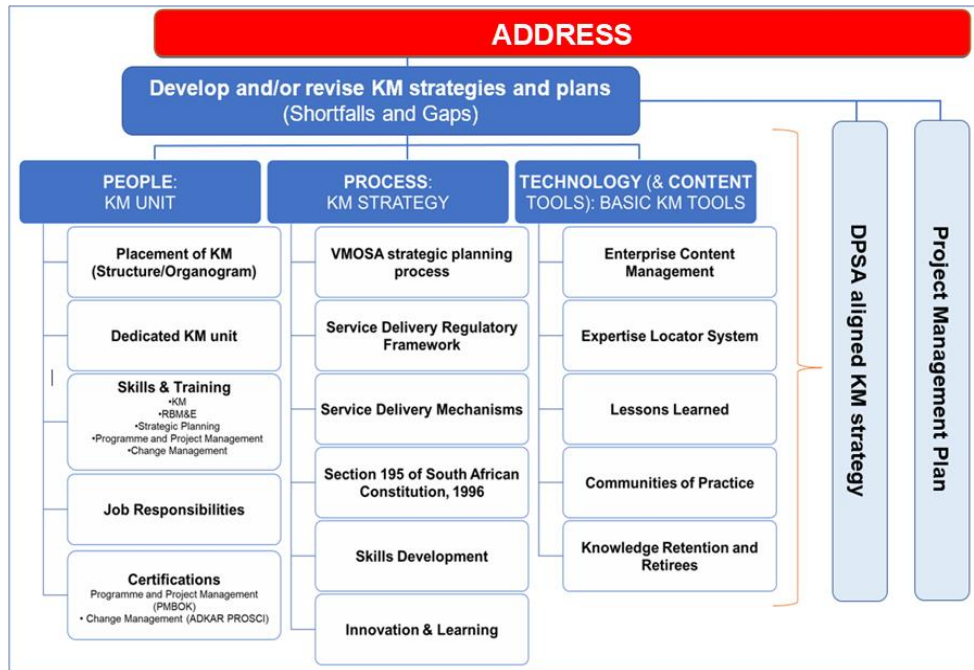
Figure 4. KMIF Stage 3 - Address
Source: own construct

Stage 3: Action
The KMIF's 'Action' stage must produce four key product deliverables (see Figure 5), namely:
- Project Implementation Plan: The Project Implementation Plan is the project in action;
- Project Management Status Reports;
- Project Scope Changes (if required);
- Quarterly Performance reports: These reports must be provided to management as well as the DPSA KM coordinator.

Figure 5. KMIF Stage 3 - Action
Source: own construct

As discussed, the KMIF is a framework that embodies the four pillars of the DPSA's National KM Strategy Framework - Culture, People, Content, Process, with technology being the enabler. The three stages of the KMIF are Assess, Address, and Action. The KMIF seeks to provide a practical approach to implementing KM within government departments and fostering a KM culture. The KMIF is shown in Figure 6 below.
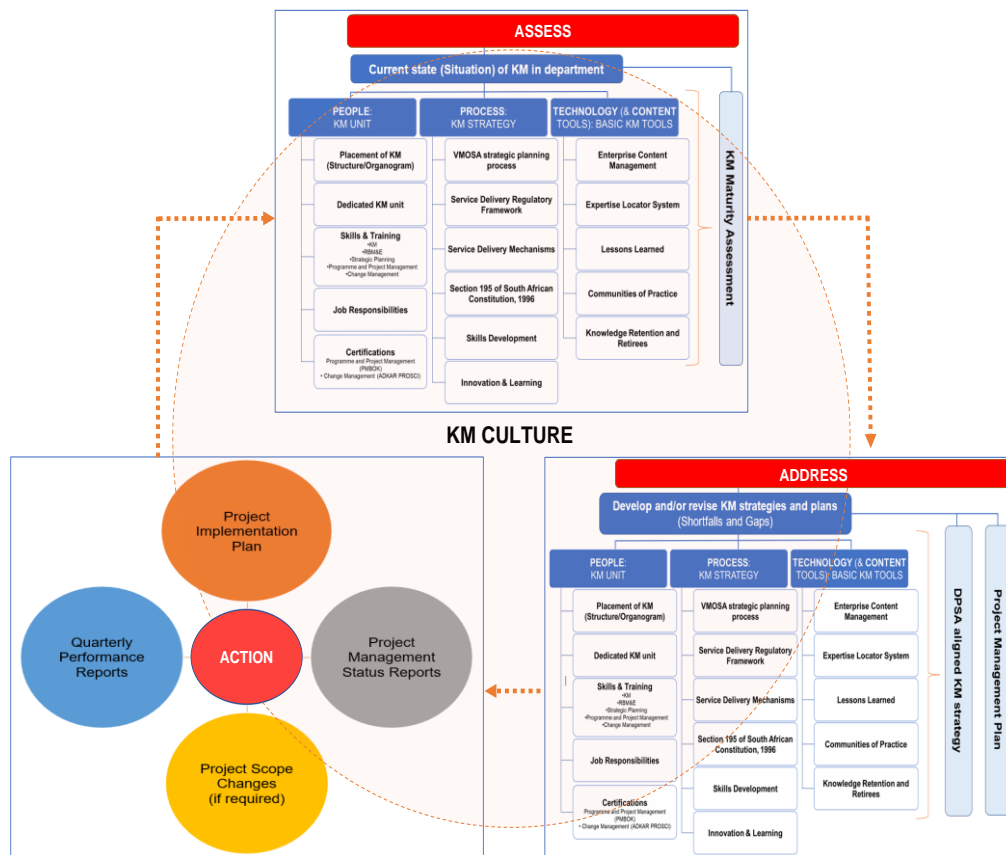
Figure 6. Three-Stage KMIF
Source: own construct

Conclusions

The paper's objective was to validate the need for a framework to facilitate the implementation of KM in government departments in developing countries, with South Africa being the case study. This was done by answering the following three research questions: *"Do public officials in developing countries lack the necessary skill set to implement KM successfully, is a framework required to facilitate this process, and what might such a framework comprise?"* The paper used a mixed methodology approach, combining qualitative and quantitative data collection, to achieve the objective of the paper and validate the need for the proposed framework.

The findings suggest that public officials in developing countries, such as South Africa, face several challenges when it comes to implementing KM successfully. These challenges include a lack of necessary skills, limited resources, cultural barriers to the adoption of KM practices (such as reluctance to share knowledge or hierarchical organizational structures that discourage collaboration), a lack of awareness and understanding of KM, as well as resistance to change (such as reluctance to adopt new technologies or methods of learning that hinders the adoption of KM practices). It is important for the South African government to address these challenges and develop strategies to overcome them and ensure successful inter-generational learning for instance.

The paper outlined a three-stage KMIF: Stage 1 - Assess, Stage 2 – Address, and Stage 3 – Action. The framework embodies the four pillars of DPSA's National KM Strategy

Framework, which are Culture, People, Content, and Process. The components of the KMIF are aligned with the overall KM objective of providing accurate and timely information to decision-makers to achieve the government's objectives. Furthermore, the proposed KMIF seeks to provide the South African government with a practical approach to implementing KM and at the same time cultivate a KM culture within their government departments. It provides public officials who are responsible for KM implementation with a straightforward and structured way how to implement and foster KM within their organization.

By following the guidelines provided by the framework, officials in developing countries can overcome some of the challenges they face when it comes to implementing KM. In terms of originality, the authors recommend that the proposed framework be adopted by the South African government and other emerging governments in Africa and beyond. While it was acknowledged that this theory is yet to be validated empirically, it nonetheless serves as an over-arching framework for further exploration into this area.

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