Use of Knowledge Management Strategies to Prevent Knowledge Loss in a Government Agency

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Abstract: There is increasing evidence that tacit knowledge is "the important strategic resource that assists in accomplishing a task (Woo, 2004)." According to Haughton (2021), Knowledge is a valuable asset, and managing that knowledge is now recognised as a significant contributor to organizations in the current business climate'. When people with expertise leave a job, the organization often loses critical tacit knowledge because the person did not pass it on to others. This knowledge gap can be costly and time-consuming or impossible to replace (Leonard, 2014). However, government institutions and agencies are known to be not good when it comes to knowledge management (KM) implementation and thus often suffer knowledge loss when employees/people with expertise leave a job, retire, or pass away. A qualitative study was conducted in one of the government agencies which has recently embarked on KM initiatives to find out what their strategies and challenges are in preventing knowledge loss. The study used the Knowledge Management Capability Assessment Tool (KM CAT) theory to assess KM initiatives in the agency. The data was collected by purposefully interviewing senior officials/managers in the agency's KM directorate. Despite the results of the study revealing that there are several challenges experienced by the agency in its endeavour to implement an effective and efficient KM process and strategy to help stem the tight against loss of knowledge, there are signs of good improvement. However, the agency needs to be resolute in its adoption of a systematic approach to KM to ensure the full utilisation of the organisation's knowledge base, coupled with the potential of individual skills, competencies, thoughts, innovations, and ideas to create a more efficient and effective organisation.

Keywords: Knowledge management, Tacit and explicit knowledge, Loss of knowledge, Government agency, Knowledge sharing, Knowledge retention

1. Introduction

There is increasing evidence that tacit knowledge is an important strategic resource that assists in accomplishing a task (Woo, Clayton, Johnson, Flores & Ellis, 2004). According to Haughton (2021), knowledge is a valuable asset, and managing that knowledge is now recognized as a significant contributor to organisations in the current business climate. When people with expertise leave a job, the organisation often loses critical tacit knowledge because the person did not pass it on to others. This knowledge gap can be costly and time-consuming or impossible to replace (Leonard & Swap, 2014).

Knowledge is recognised as the most significant asset for those companies that focus on capabilities and intangible resources as tools to compete in the marketplace; however, it is not managed easily (Whelan & Carcary, 2011). The management of knowledge is becoming more important now as most organisational, economic, and social activities are knowledge driven (Muslim, Indra, Lystiardi & Anggiani, 2021). Furthermore, using knowledge resources effectively gives organisations the ability to be innovative, quickly respond to customer demands, and support operational activities (Daghfous, Belkhodja & Angell, 2013). This shows that organisations are realising that knowledge is becoming the most important asset they can leverage to achieve a competitive advantage. Massingham and Massingham (2014) state that companies in the United States invest in knowledge management by spending $73 billion annually on software related to the concept alone; however, they also lose approximately $31.5 billion a year by failing to share knowledge.

As a developing country, South Africa is witnessing fast population growth, which drives up the travel demand. Many of the country's citizens continue to rely on public transport to get to work, school, healthcare, recreation, and tourism sites. To manage an innovative rapid rail transport system in the country, an agency was formed as a public-private partnership (PPP) project to provide a more affordable and accessible transport system to alleviate traffic congestion, while also providing a reliable and quick mode of public transport. In the intervening process, a wealth of skills and technical knowledge, particularly in the management of the protracted design and construction review process and the legal and environmental compliance processes, are organically produced. Therefore, if this tacit knowledge residing in the minds of the organisation's employees is not captured and preserved, it could be easily lost when an employee exits the organisation at the end of the project.

Government institutions and agencies are known to be not good when it comes to knowledge management (KM) implementation and thus often suffer knowledge loss when employees/people with expertise leave a job,

retire, or pass away. A qualitative study was conducted with the objective of providing an overview of the knowledge management processes in one of the government agencies. This would help determine if there are any gaps in the implementation of KM in the organisation. Furthermore, the other objectives of the study were to examine the strategies used to capture tacit knowledge in the agency and the difficulties encountered in the knowledge capturing process, and to suggest effective strategies to prevent tacit knowledge loss in the agency.

The study used the Knowledge Management Capability Assessment Tool (KM CAT) theory to assess KM initiatives in the agency to provide an overview of the KM implementation process in the agency, examine the strategies and difficulties encountered, and suggest effective strategies to deal with the challenges encountered in the agency's KM processes

The data were collected by purposefully interviewing senior officials/managers involved in the agency's KM directorate. A thematic approach was used to analyse the data to obtain the results.

2. An Overview of the Current KM Strategy at the Government Agency

The agency's KM strategy (2016) was firmly established by the South African transport Act, Act 5 of 2006. Section 5 (e) and (f) of the Act requires the agency to establish and operate information and management systems for transport projects in Gauteng province, and liaise and exchange information with institutions, authorities, or professional bodies regarding rail matters in South Africa or in other countries. The agency as part of the Gauteng province is required to support and contribute to the implementation of the Gauteng 25-year Integrated Transport Master Plan (ITMP25). Given the mandate of the agency and public transport development imperatives for the province a KM strategy is critical for the organisation. There have been tremendous efforts put in place on the electronic document control and management particularly during the development phase of the transport projects in Gauteng province.

KM enjoys strategic leadership support in the organisation. KM communication initiatives need to be cognisant of this strength and leverage on the support for maximum benefit. Harvesting knowledge from employees and consultants is critical for the preservation of knowledge and corporate memory, this may be the most difficult yet critical of interventions for the successful implementation of the strategy.

However, the SWOT analysis conducted by the agency in 2015 identified several gaps in the agency that the needed to be addressed by the KM strategy implemented in 2016 which included:

- Loss of institutional memory
- Knowledge not captured during the crucial project stages
- Loss of skills due to retirement or resignation
- Lack of knowledge transfer
- KM not embedded in
- business processes
- Lack of KM resources

The vision for the agency's KM Strategy is to develop agency as a learning organisation with the ability to share and disseminate information to relevant stakeholders. The strategy can be achieved through active participation in the knowledge economy by prioritising; preservation of existing knowledge, sharing of existing knowledge and gathering of external knowledge or information to create new knowledge.

3. Problem Statement

Organisations are increasingly concerned about loss of knowledge due to unprecedented employee turnover. Noting the positive spin-off of KM trends, Lamont (2021) asserts that "at a time in which few organizations have been able to conduct business as usual, knowledge management solutions have sustained momentum and even accelerated their growth. Increased use of collaboration, cloud technology, AI, language processing solutions, and graph databases has all contributed to a robust environment for knowledge management". This shows that the harmful effects of knowledge loss from employee turnover can easily spill into other areas of the business.

In their position paper (2018), Knowledge Management South Africa claims that KM is still a black box in South Africa, understood only by KM practitioners and not valued as a corporate value-add. This is despite the inclusion of KM as a requirement in ISO 9001: 2015, clause 7.1.6, which is a step change towards formalising the discipline in organisations in South Africa. The concern raised by the Knowledge Management South African Position Paper (2018) is that KM in business is often concealed within other disciplines such as research and development, strategy, IT, and human capital (resources).

According to the agency's annual report (2021), the agency experienced a turnover rate of 2%. Although it has been consistently below the industry average norm of 10% in this financial year, this loss of talent equates to a loss of knowledge that could be difficult and costly to replace. This is because the agency operates in an industry where scarce and specialised skills are in great demand and it faces a high risk of knowledge loss which could significantly affect the agency's ability to carry out its mandate.

Through the agency's strategic workforce planning, the agency endeavours to continue to attract, engage, develop, and retain the best calibre talent needed to deliver on the agency's strategic outcomes (Annual Report, 2021). However, it is unclear whether the agency is doing enough to prevent knowledge loss. The risk of knowledge loss can significantly affect the agency's ability to carry out its mandate. This study, therefore, sought to investigate KM practices at one of the government agencies in South Africa to provide new insights into how KM is implemented in public institutions in developing countries. The assessment of challenges experienced by KM officials will be identified for proper remedial action to enable the agency to achieve a competitive edge.

4. Study Objectives

- To provide an overview of the KM implementation process in the government agency
- To examine the strategies used to capture knowledge in the in the government agency
- To examine the challenges encountered in the knowledge capture process in the government agency
- To suggest effective strategies to deal with the challenges encountered in the agency's KM processes

5. Knowledge Management Capability Assessment Tool (KM CAT)

To assess knowledge management maturity in the organisation, the study used the Knowledge Management Capability Assessment Tool (KM CAT). The KM CAT is best suited for reviewing procedures, recognising intellectual assets in an organisation, and developing KM solutions that enhance organisational performance such as improved efficiency, increased productivity, and knowledge retention (Kapofu (2014).

According to APQC (2022) the KM-CAT helps an organisation assess its capabilities and maturity in knowledge management (KM) and focus its KM investments to produce the highest return on value. This assessment maps the current "as-is" state of KM and the knowledge flow processes within an organization to:

- measure the current maturity of the enablers and infrastructures employed,
- evaluate the status of knowledge flow processes and supporting approaches,
- set an objective for the improvement of business processes through the flow of knowledge,
- guide the evolution of organizational change, and
- compare or benchmark with similar efforts of other internal units or external organizations.

The KM CAT is divided into four major sections and each section is also subdivided into subcategories assess as follows:

- Strategy (objectives, business case, and budgets)
- People (resources, governance structure and roles, change management, and communication)
- Process (knowledge flow process, KM approaches, and measurement)
- Content and Information Technology (content management and IT processes and tools)

The focus of the current study was limited to the KM process category. However, the objectives stretch across the subcategories of the four major sections mentioned above. Although this seems like the adaptation of the KM CAT, the results of this study provided a clear sense of strengths, gaps, and opportunities for improvement, as well as appropriate steps to enhance the KM process and strategies in the agency.

6. Literature Review

Knowledge is a key component providing organizations a competitive advantage in the current business environment (Fong & Kwok, 2009; Lin, Lai & Yang, 2016). Arsenijević, Trivan, Podbregar and Šprajc (2017) assert that knowledge is now a key source of wealth for many organisations.

There are various ways of categorising knowledge that exists in an organisation, namely explicit knowledge and tacit knowledge.

Explicit knowledge is tacit knowledge that is codified, documented, and shared, making it readily available to either a single person or a group of people at a minimal cost (Jasimuddin & Zhang, 2014). Some examples of

explicit knowledge are policy manuals, technical documentation, and reference guides (Terzieva & Morabito, 2016).

Tacit knowledge, also known as implicit knowledge, is present in the individual but cannot be expressed easily by the individual in either spoken or written form (Turner, Zimmerman & Allen, 2012).

According to Davenport and Prusak (1998), KM is defined as the process of developing, documenting, and applying knowledge to improve the performance of an institution. However, KM is also seen as an essential process for enterprises to determine where they are going and for organisational survival in the long run, given that knowledge creation is the core competency of any organisation (Leonard-Barton, 1995). The aforementioned definition provided the setting for the paper to discuss the various strategies that can be used to capture tacit knowledge in order to prevent knowledge loss in the organisation.

7. Knowledge Management Processes

Knowledge management is defined as a "process that enables an organisation to improve its performance by enabling learning and innovation whilst solving its problems, acknowledging, and resolving gaps in organisations, and recognising knowledge (comprising people and information) as an organisational asset which has to be managed through enabling policies and institutional tools." (Mavodza & Ngulube, 2012:2).

However, there is no single commonly accepted definition of KM in the literature, consequently, there are various models that can be followed to transform knowledge into a valuable strategic asset for the organisation. The Wiig model consists of four dimensions, namely completeness, connectedness, congruency, and perspective and purpose. The Meyer and Zack model (1996) proposes the following stages for refining knowledge: acquisition, refinement, storage and retrieval, distribution, and presentation or use. The Bukowitz and Williams model (2000) consists of six stages that support the strategy of the organisation. According to the Nonaka and Takeuchi model (1995), knowledge creation is a continuous process that follows four methods in terms of how knowledge is converted. These methods are socialisation, externalisation, combination, and internalisation. The McElroy (1999) model posits that organisational knowledge is held both subjectively in the minds of individuals and groups to produce knowledge and that four high-level processes must be followed, which are individual and group learning, knowledge claim formulation, information acquisition, and knowledge validation.

8. Barriers to Successful KM Implementation

When carrying out KM activities, several barriers or bottlenecks could be encountered. According to Wiig (1995:9), these include knowledge not being managed as a valuable asset; insufficient knowledge at point-of-action; and missed learning opportunities such as situations in which the feedback is not always given by those who performed earlier work, as this eliminates chances for knowledge workers to learn about the implications of their actions. Wiig (1995:12) also argues that "different entities (knowledge workers, departments) possess part of the knowledge required to perform the whole task", which may lead to unnecessary "divided knowledge".

In addition, Trivedi (2007) believes that effective KM can be or is hampered by, among other things, failure to document intellectual capital; the culture of not sharing knowledge in the organisation; obsolete information, which leads to overload if not removed; and rapid changes in technology that pose serious problems, especially in its adaptability and application in KM manipulation processes.

9. Knowledge Management Strategies

Knowledge loss is the result of a more mobile workforce, employees nearing retirement, employee turnover, and disability (Bratianu, 2018; Massingham, 2018). Collective knowledge resides in the minds of the organisation's employees, customers, and vendors. Tacit knowledge is often shared through face-to-face interactions, such as community of practice, storytelling, mentorship, or on-the-job training, which allow individuals to learn through direct observation and experience. Explicit knowledge is knowledge that can be easily documented and shared, such as facts, procedures, and processes. It is often shared through written documents, presentations, and formal training programmes. On the other hand, implicit knowledge is knowledge that is embedded in the practices, processes, and culture of an organisation. It is often difficult to identify and capture, but it can be shared through shared experiences, traditions, and cultural practices.

10. Methodology

To address the main research question, this qualitative study used a case study research design because a case study enabled the researcher to conduct an in-depth study of the KM process in the agency. The case study research design enabled the researcher to explain the complex situations where important factors could be lost or not described completely enough in a generalised method. This study used semi-structured interviews to gain an understanding of how the loss of knowledge (tacit) affected this South African government agency, rather than acquiring a more superficial overview.

The researcher purposefully selected senior management involved in the agency's KM directorate. The interview guide was prepared to help the researcher to comprehensively cover identified topics relevant to the study objectives. Each participant was allocated one and a half hours for the interview.

The interviews were conducted using the Microsoft Teams app, which is a virtual platform the researcher deemed fit to use due to the COVID-19 pandemic. The interviews were recorded with the consent of the participants.

Owing to the semi-structured nature of the interviews, participants were encouraged to elaborate on the subject and provide as much information as they could. Apart from the interviews, internal documents of the agency such as the KM policy and strategy plan were used to achieve data triangulation to enrich the data collected.

The collected data were analysed using ATLAS.ti version 9 according to a thematic approach, in which the data were aligned to the study themes, and a coding procedure was followed.

11. Profile of the Participants

The study initially targeted 10 senior managers in the KM directorate who are actively involved in the agency's KM projects and processes. These included the executive manager of KM, five KM specialist, a senior records officer, a registry officer, a senior manager for reputation, and a senior manager in stakeholder relations. Owing to the COVID-19 pandemic, four employees were unavailable because of ill health and death.

In the end, six senior managers in the KM directorate with the relevant knowledge and experience in KM programmes and processes of the agency were interviewed.

12. Discussion of the Findings

- Overview of the knowledge management implementation process

The study results revealed attempts have been made to develop a KM process that is anchored on four pillars of the KM life cycle, namely knowledge creation, acquisition, storage, sharing and application, and a high level of knowledge culture among employees which is a necessary condition for the development of an effective KM programme in the agency. To expand the potential capability of the current KM system to produce knowledge that can be used for productivity enhancement, a coherent and practical framework for how KM processes should be carried out or managed in the organisation, must be developed.

- Strategies used to capture knowledge in the in the agency

Most participants noted the use of technology to support knowledge initiatives in the agency such as knowledge portals, podcasts, intranet, LinkedIn, case studies, project wikis, corporate blogs, fact sheets, presentation repositories, exit interviews, taxonomies, and more. However, some participants shared that there was a pressing need to find or create new ways of capturing and preserving knowledge amid increasing staff turnover and shrinking budgets. Therefore, the availability of funding for IT infrastructure will encourage employees to use a variety of techniques to share lessons learnt, insights, and experiences to mitigate organisational knowledge loss.

- Challenges in the knowledge capture process

The study revealed that due to budgets cuts, the existing technologies are not sufficient to provide support for processes of acquisition, preservation, and dissemination of knowledge. A lack of trust, rewards and incentives, and little collaboration among employees hampers the organisation's knowledge capture and sharing efforts. Top management needs to intervene decisively, as this situation can result in high employee turnover rates, which can lead to knowledge loss if individuals with decision-making authority continue to exit the organisation.

13. Conclusion

This study showed that despite KM implementation being a black box in South African public and private sectors, there are islands of good practice in the implementation of KM in some government agencies in South Africa. Despite the current challenges experienced by the agency in its endeavour to implement an effective and efficient KM process and strategy to help stem the tight against loss of knowledge, there are signs of good improvement. However, the agency needs to be resolute in its adoption of a systematic approach to KM to ensure the full utilisation of the organisation's knowledge base, coupled with the potential of individual skills, competencies, thoughts, innovations, and ideas to create a more efficient and effective organisation.

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