Chapter 10

Use of Information and Communication Technologies Tools to Capture, Store, and Disseminate Indigenous Knowledge:
A Literature Review

Petros Nhlavu Dlamini
University of Zululand, South Africa

ABSTRACT

This chapter explores the role played by Information and Communication Technology tools in the management of indigenous Knowledge in general. Of importance to note, therefore, is the fact that the emergence of Information and Communication Technology tools has opened new avenues in Indigenous Knowledge Management (IKM) which have the potential of playing important roles in the society by making the valuable knowledge available to everyone who recognizes and uses it. Given the nature of indigenous knowledge which is commonly exchanged through personal communication and demonstration exemplified as deriving from the master to the apprentice, from the parents to the children, from the one neighbour to the other and so on. Information and Communication Technology tools appear to be providing as a solution in forestalling the possible extinction of IK.

INTRODUCTION

This study is largely informed by Nonaka's (1995) SECI model/theory known as Knowledge Creation Theory. According to Nonaka and Takeuchi (1995), knowledge is created in a four-way mode and is transferred and converted based on socialisation, externalisation, combination and internalisation. Presumably, Nonaka's model has been widely quoted and accepted by scholars in creating, sharing, docu-

menting, and transferring knowledge through knowledge management approaches (Lwoga, Ngulube & Stilwell, 2010; Ngulube, 2003). Nonaka and Takeuchi (1995) argue that knowledge creation is centred on four distinctive interactions between tacit and explicit and vice versa:

1. Socialisation is where tacit-to-tacit knowledge is shared and converted through shared experiences.
2. Externalisation is the process of conversion of tacit knowledge into explicit knowledge.
3. Combination is the process of converting explicit knowledge into more systematic sets of explicit knowledge.
4. Internalisation involves the conversion of explicit knowledge into tacit knowledge, for example learning by doing.

This study uses knowledge creation theory as it promotes the management of tacit knowledge like indigenous knowledge. Knowledge creation is considered a pathway that shows the possibility of managing indigenous knowledge using ICT tools. The researcher argues that tacit indigenous knowledge needs to be managed because it is at risk of becoming extinct if appropriate measures are not taken to preserve and manage it. Lwoga et al. (2010) suggest a need to manage IK using knowledge management theories. It is argued that much of IK is preserved in the memories of elders, thus gradually disappearing due to loss of memory and death. Mosoti and Masheka (2010) sum up the drive to manage knowledge in African culture with an old African proverb that states, "In Africa, when an old man dies, the entire library is burnt." In this sense, knowledge management models, such as knowledge creation, can be used to promote the management sharing of IK in communities that recognize its relevance and its importance.

This chapter explains how the four modes of knowledge creation theory can be used to manage IK. Firstly, it demonstrates socialization as a tool which mandates owners or custodians of traditional knowledge to share their experiences, skills, local knowledge and beliefs with people who do not have access to that knowledge, but who may view it to be valuable through conversation and close interaction. In other words, socialization eradicates selfishness and promotes knowledge sharing among communities and organizations for the benefit of all. For example, Ngulube (2003) posits that in the past, when rural communities wished to remember or celebrate the values of their society, they composed or performed songs, proverbs, myths, poetic forms and oral prose, including folktales and riddles. In this regard, indigenous knowledge was shared and created through cultural roles, such as apprenticeships, initiation rites during adolescence, age set systems, etc. (Lwoga et al., 2010).

Secondly, externalization is considered to be an important element in managing IK. For example, externalization takes place when a person holding tacit knowledge converts it into any secondary form (for example, document or image, or rock painting) where another can retrieve it even in the absence of a person holding it (Ngulube, 2003; Lwoga et al., 2010). In that regard, Nonaka and Konno (1998) argue that the results of the externalization process enable people with different backgrounds to share their former tacit knowledge. This study uses externalization because it minimizes lack of trust and promotes understanding among rural based and urban based people, particularly users of ICTs. Externalization is adopted because it allows the interaction between owners or custodians of IK and users of ICTs. For instance, users of ICTs visit villagers to observe methods they use in IK, for example, in drying food like pumpkins, meat, or green vegetables, and document it for future generations. In the same vein, Ngulube and Lwoga (2007) agree that technological tools can be used to capture, manage and make IK accessible. The two authors assert that one of the advantages of using technology to manage IK is that it facilitates the presentation of knowledge in databases and documents.

21 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/use-of-information-and-communication-technologies-tools-to-capture-store-and-disseminate-indigenous-knowledge/165746

Related Content

Governing Digital Divides: Power Structures and ICT Strategies in a Global Perspective
Francesco Amorettiand Fortunato Musella (2011). *International Exploration of Technology Equity and the Digital Divide: Critical, Historical and Social Perspectives (pp. 193-209).*
www.irma-international.org/chapter/governing-digital-divides/47511

Indigenous Knowledge Intelligence and African Development
Alexander Maune (2017). *Handbook of Research on Theoretical Perspectives on Indigenous Knowledge Systems in Developing Countries (pp. 173-197).*
www.irma-international.org/chapter/indigenous-knowledge-intelligence-and-african-development/165744

Hybrid Method for Exploring Efficacy of Indigenous Management of Common Cold through African Therapy
David Mphuthiand Abel Jacobus Pienaar (2017). *Handbook of Research on Theoretical Perspectives on Indigenous Knowledge Systems in Developing Countries (pp. 359-374).*
www.irma-international.org/chapter/hybrid-method-for-exploring-efficacy-of-indigenous-management-of-common-cold-through-african-therapy/165752

The Role of Service Level Agreements (SLAs) in Leveraging ICT in Tanzania
Veronica Mirongeand Dennis M. Lupiana (2016). *International Journal of ICT Research in Africa and the Middle East (pp. 1-13).*
www.irma-international.org/article/the-role-of-service-level-agreements-slas-in-leveraging-ict-in-tanzania/170411

Exploring Online Shopping Adoption for Innovations in Market Development
Neeta Baporikar (2022). *International Journal of Innovation in the Digital Economy (pp. 1-29).*
www.irma-international.org/article/exploring-online-shopping-adoption-for-innovations-in-market-development/303615