

Utilisation of social media tools to enhance knowledge sharing among knowledge workers: A case of Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha, Tanzania

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Abstract:

This paper reports on a study done to promote the inquiry about the need for utilising social media tools to enhance knowledge sharing and the adoption of these collaborative tools in higher learning institutions. This study investigated the extent to which social media tools are utilised to enhance knowledge sharing among knowledge workers in the Nelson Mandela African Institution of Science and Technology (NM-AIST), United Republic of Tanzania. The study conducted semi-structured interviews with NM-AIST library staff and ICT-RC personnel in 2014. The study found that, the utilisation of social media tools to enhance knowledge sharing among knowledge workers is still in its early stages in higher learning institutions in Tanzania. However, there was much interest amongst respondents for integrating and utilising social media tools to support knowledge sharing within such higher learning institutions in Tanzania. The study also provided a basis for further research on the utilisation of social media tools to enhance knowledge sharing in higher learning institutions.

Keywords: social media tools, knowledge sharing, knowledge workers and higher learning institutions.

1. Introduction

Social media tools utilisation has become part of everyday activities within higher learning institutions. It is therefore vital for higher learning institutions to utilise social media tools to enhance and to improve the quality of their services (Davis, *et al*, 2012:17). Knowledge sharing is among the services which are highly facilitated by social media tools. Thus, higher learning institutions and their libraries have been incorporating social media tools in order to enhance knowledge sharing practices (Veletsianos, 2013:640). Knowledge management is an umbrella which covers various components such as knowledge creation, knowledge generation, knowledge acquisition and knowledge sharing (Maponya, 2004:13; Pearson & Saunders, 2009:347; Raja, Ahmad & Sinha, 2009:701). This study focused on knowledge sharing aspect. Knowledge sharing has been identified as the most critical area for knowledge management not only to facilitate the exchange of ideas, experience and problems, but also to provide a link between knowledge workers, where knowledge resides, and institutions, where knowledge attains its competitive value (Du, Ai & Ren, 2007:39; Hendriks, 1999:91; Jain, 2001:385). Nevertheless, knowledge sharing is considered as the most prominent challenge as compared to other components of knowledge management because it is very difficult to attain and encourage people to share their knowledge (Gupta, 2008:186).

Generally, knowledge sharing practices is about communicating knowledge within a group of people (Cheng, Ho & Lau, 2009); therefore this study focused on a group of knowledge workers within the Nelson Mandela African Institute of Science and Technology (NM-AIST). Hislop (2013:71) defines knowledge workers as “someone whose work is primarily intellectual, creative and non-routine in nature, and which involves both the utilisation and creation of abstract/theoretical knowledge”. Furthermore knowledge workers are people who apply knowledge in most of their daily activities; whose work is primarily intellectual; and who utilise both conceptual (tacit) and theoretical (explicit) knowledge (Hislop 2013:71; Mladkova, 2011:248). The most valuable knowledge within any institution is stored within the minds of employees (tacit knowledge) who are knowledge workers (Kokavoca, Mal’as as cited in Mladikova, 2011:249), thus knowledge workers constitute a critical group within any institution to create, share and use knowledge for the benefit of the institution (Hislop, 2013:138).

The development of ICTs and the emergence of social media tools influenced knowledge sharing by lowering barriers among knowledge workers who refused to participate in knowledge sharing practices (Hendriks, 1999:91). Social media tools are online collaborative tools that enable people to communicate, participate, collaborate and thus share information (Chua & Goi, 2010:1; Harinarayana & Raju, 2010:70; Jain, 2013:1; Kelly *et al.*, 2009:315; Kim & Abbas, 2010: 211; Luo, 2009; 32; Lwoga, 2013:288; O’Dell, 2010:238; Sodt & Summey, 2009:97). Social media tools are used to turn communication into interactive discussions among like-minded people (Hislop, 2013:43). Therefore, individuals and researchers within higher learning institution can formulate various groups, discuss and share knowledge by using social media tools. Therefore, through the utilisation of social media tools, higher learning institutions can easily facilitate flow, transfer, communication and sharing of knowledge.

Unfortunately, there is still lack of empirical findings on the extent to which higher learning institutions have investigated various social media tools to enhance knowledge sharing. Thus, main objective of this study was to investigate the extent to which social media tools could be utilised to enhance knowledge sharing among knowledge workers with a case of NM-AIST. The specific objectives were:

- 1) To assess the extent by which knowledge workers at NM-AIST share knowledge.
- 2) To examine the factors which facilitate knowledge sharing practices at NM-AIST.

- 3) To assess the utilisation of social media tools at NM-AIST.
- 4) To discuss social media tools which are used to enhance knowledge sharing practices at NM-AIST.
- 5) To determine the challenges which hinder the utilisation of social media tools to enhance knowledge sharing practices at NM-AIST.

In relation to knowledge sharing practices, social media tools utilisation is believed to have a positive impact on knowledge workers who utilise them and for institutions which utilise them. Therefore, there is a need to investigate the impact of utilisation of social media tools in enhancing knowledge sharing practices among knowledge workers with a case study of the Nelson Mandela African Institution of Science and Technology in Arusha, Tanzania.

The Nelson Mandela African Institute of Science and Technology (NM-AIST) is among the higher learning institutions which have been employing a number of social media tools since its inception in 2012 in order to enhance online communication, participation, collaborate and share information within the institution (NM-AIST, 2009:3). The NM-AIST is located in Arusha, Tanzania; and is among the network of Pan-African Institutes of Science and Technology located across the continent (NM-AIST, 2009:5). NM-AIST is a public higher learning institution under the Tanzanian Ministry of Communication, Science and Technology. NM-AIST operates in a modern environment where information literacy is encouraged; therefore, knowledge workers in this institution are encouraged to participate in knowledge creation and sharing practices.

2. Knowledge sharing within higher learning institutions

Many of the higher learning institutions in Tanzania and in other countries employ knowledge management practices such as knowledge creation and knowledge sharing in order to improve their quality of services. Higher learning institutions not only serve as knowledge reservoir, but also manage, blend and encourage the creation and sharing of knowledge (Sohail & Daud 2009:126). Knowledge sharing is highly encouraged within higher learning institutions because it involves people to contribute and participate in knowledge production which can later be accessed, retrieved and stored for future use. Knowledge needs to be transferred from where it is created or stored to where it is needed in order to be communicated and shared effectively (Mtega, *et al*, 2014:189). This is due to the fact that knowledge sharing is a process of exchanging, transferring and communicating information, skills, experiences and understandings among people (Tsui, 2006:5). Foss, Husted and Michailova (2010:458) reported that, in order to transform individual knowledge into institutional knowledge, institutions are engaged in knowledge sharing practices. However, as most of the knowledge is created and initially stored within employees' minds (tacit knowledge) so such knowledge cannot easily be shared (Chow & Chan, 2008:458; Mladkova, 2011:248). Human beings are like libraries which preserve a lot of information; therefore various means must be employed to make sure that knowledge workers share knowledge, especially tacit knowledge. This is represented in the African quote by Malian philosopher Amadou Hampate Ba which states that, "when an old man dies, it is as if a library has burned down". Ardichvili, Page and Wentling (2005: 65) are of the opinion that allowing knowledge sharing members to talk about their experiences, skills and understandings can help people to share knowledge and internalise tacit knowledge. Thus, knowledge workers need to work with both dimensions of knowledge that is tacit and explicit knowledge (Mladkova, 2011:248).

Furthermore, individuals share what they have learned and transfer what they know to those who have a collective interest and those who have found the knowledge useful; and generally the value of knowledge expands when it is shared (Cheng, *et al*, 2009: 314). The outcome of knowledge sharing is thus the creation of new knowledge and innovation that will improve organisational performance (Sohail & Daud, 2009:129).

The quality of knowledge workers work depends on their ability to create, distribute, communicate and share their knowledge (Mladkova, 2011:248). Therefore, higher learning institutions need to find various means in order to encourage knowledge workers to participate in knowledge sharing practices

through the support of proper mechanisms. The provision of institutional rewards ranging from monetary incentives such as increased salaries and bonuses to non-monetary awards such as promotions and job security can be implemented to enhance knowledge sharing practices among knowledge workers (Lin, 2007:319). Having properly motivated, knowledge workers does not only encourage knowledge sharing practices, but also influences the loyalty of such knowledge workers to remain working within their institution (Hislop, 2003:186).

Besides motivation, there are other factors which higher learning institutions can implement in order to encourage knowledge workers not only to participate in knowledge sharing practices but also to use proper mechanisms which can enhance knowledge sharing practices within higher learning institutions. Human resource management (HRM) policies and practices are among such factors which can play a key role to enhance knowledge sharing practices within higher learning institutions. According to Hislop (2003:196) “HRM policies and practices can influence commitment levels, and underpin attitudes towards knowledge sharing”. Garanina (2014:15) mentioned the roles of HRM to support knowledge sharing practices among workers which include: relationship builder, developer of organisational processes and knowledge facilitator that assist knowledge migration, knowledge appreciation and knowledgeable action between employees and units. Therefore higher learning institutions need to employ skilled HR managers who can assist and support the integration of knowledge sharing practices.

Other factors which need to be implemented to support knowledge sharing practices within higher learning institutions include job design, institutional culture, management support and mechanism. Foss, *et al*, (2009:871) adds that, job design is an antecedent of actual knowledge sharing behaviours within higher learning institutions. Job design can enhance knowledge sharing especially when there is a risk that, highly knowledgeable employees want to leave the institution or when there are high costs of retaining knowledgeable personnel to the firm. On the other side, institutional culture has a connection with knowledge sharing practices within higher learning institutions (Azudin, Ismail & Taberali, 2014:144). Also Al-Alawi, Al-Marzooqi and Mohammed (2007:25) say that, “Each institution has its own culture which develops over time to reflect the organisation’s identity”. Institutional culture represents both significance and the advantages of the institutions and their employees’ willingness to share their knowledge (Yeh, *et al*, 2006:797).

Management support is an additional factor which can enhance knowledge sharing within higher learning institutions. In addition to the support which the management can offer to enhance knowledge sharing practices such as training, promotion and appreciation, establishing employee trust is very important for knowledge sharing (Wang & Noe, 2010: 118). Trust is a critical factor that influences knowledge workers to share their knowledge, especially the sharing of tacit knowledge (Hsu & Lin, 2008:68; Mladkova, 2011: 253). Therefore, higher learning institutions need to trust their employees to enable them participate fully in knowledge sharing practices. Knowledge sharing practices furthermore need mechanisms that facilitate the flow of knowledge from one individual to another. These mechanisms for knowledge sharing practices can include traditional mechanisms such as face-to-face conversations, documents and storytelling, technological tools such as groupware, email and intranet, and Web 2.0 as well as social media tools. In the following section the role of social media tools to enhance knowledge sharing activities will be discussed in more detail.

3. The role of social media tools to enhance knowledge sharing activities.

The emergence of social media tools has changed the way knowledge is retrieved communicated and shared among groups of individuals. Social media tools enable knowledge management and knowledge sharing practices by facilitating knowledge creation, sharing and collaboration among knowledge workers (Paroutis & Al Saleh, 2009:53). Many of the social media tools are built on open source therefore they can easily be integrated in order to enhance knowledge sharing (McKenzie & Van Winkelen, 2013:3). In line with this, Muneja and Abungu (2012:5) are of the opinion that, “being freely open source and easy to adopt the tools can revolutionize provision of services and lead to rapid growth of knowledge acquisition”.

Social media tools are therefore suitable for knowledge sharing practices since it allows and facilitate knowledge to flow and disseminated and to improve the extraction and utilisation of tacit knowledge. White (2010:92) adds that, social media tools are used to publish explicit knowledge (papers, blog posts, articles, tweets), to get exposure, to find knowledge from a global community of experts and to engage others to share knowledge. Furthermore, the utilisation of social media tools facilitates knowledge sharing across widely dispersed elements within institutions by involving people who have common interests to create and share knowledge (Levy, 2009:132). This can be achieved by allowing easy and instant communication among employees (Adamovic, Potgieter & Mearns, 2012:1).

Within higher learning institutions, social media tools are suitable for online research sharing, knowledge creation, storage, sharing and usage as well as creating suitable platforms for sharing innovations and electronic learning (Schneckenberg, 2009:512). Other advantages of social media tools utilisation within higher learning institutions are to enhance academic networking, to facilitate sharing information, to provide comments on published outputs and to documents and share various academic experiences (Mtega *et al.* 2014:193). In line with this, social media tools help higher learning institutions to expand the academics' ability to nurture social and professional connections and to potentially build and maintain larger networks for catalysing interdisciplinary collaborations, multisite research, and inter-institutional partnerships (Greenhow, Robelia & Hughes, 2009: 255). For example, individuals can set up the more casual and social Facebook accounts (<http://facebook.com>) and decide whether to add only colleagues or include students and others (Greenhow, Robelia & Hughes, 2009:255).

In addition, social media tools utilisation within higher learning institutions facilitates dissemination of reliable information to various scholars within and outside such institutions and hence makes such institutions to adapt and participate on conversations about individual scholarship within higher learning institutions (Greenhow, Robelia & Hughes, 2009:253). Lastly, these tools facilitate new methods of running universities such as to support electronic and mobile learning, to enhance virtual communities, to facilitate scholarly communication, social scholarship and communities of practice (Panahi, Watson & Partridge, 2013:379; Makori, 2011:34). In these, higher learning can easily participate in knowledge sharing practices by overcoming geographical boundaries and thus achieving more effective collaborative activities (Panahi, Watson & Partridge, 2013:379). Therefore, the following section discusses various categories of social media tools and how they can enhance knowledge sharing practise within higher learning institutions.

4. Categories of social media to enhance knowledge sharing

Social media tools can be divided into different categories in order to facilitate various activities within higher learning institutions. This study mentions the following categories of social media tools which can be employed to enhance knowledge sharing within higher learning institutions:

4.1 Wikis

Wikis are collaborative and communication space which provides freedom, ease of use and access, and a better way to organise knowledge (Grace, 2009: 65; Parker & Chao, 2007:57). Wikis provide links and references to other web sites that are related to various subjects in order to help users to better understand the context and therefore, to easily add and edit information (Grace, 2009:65; Levy, 2009:125; Murugesan, 2007:35). Wikis are also used to facilitate knowledge sharing, collaborative authoring and online discussion (Kim & Abbas, 2011:213). According to Grace (2009:69), researchers can easily add their articles on wikis and allow others to read, edit and link to additional relevant resources. Knowledge workers can use wikis to facilitate communication, to distribute documents, to collaborate and share knowledge (Grosbeck, 2009:479; Kumar, 2009: 106; Tripathi & Kumar, 2010:197).

4.2 Social networking sites

Social networking sites are sites which contain social media tools such as Facebook and MySpace which are used to facilitate communication, chat and sharing of ideas among people. According to

Boyd and Ellison (2008:210) social networking sites are defined as “Web-based services that allow individuals to (i) construct a public or semi-public profile within a bounded system, (ii) to articulate a list of other users with whom they share a connection; and (iii) view and transverse their list of connections and those made by others within the system.” Social networking sites provide a way to get and stay in touch with friends, family and associates (Mahmood & Richardson, 2011:370). Social networking tools such as Facebook and Twitter are very important social media tools to enhance knowledge sharing through providing the communication and sharing of information (Lwoga, 2013:291). Facebook provide users with the ability to personalise profiles with photos and information therefore to communicate more efficiently (Ayu & Abrizah, 2011:239 &240). Twitter allows users to share information including their thoughts with everyone (Kim & Abbas, 2010:214).

4.3 Blogs

Blogs are regarded as the central focus for discussion forums among knowledge workers (Hislop, 2013:217). Literature by Yu, Lu and Liu (2010:33) emphasised the use of blogs to enhance knowledge transfer and flow within organisations hence to encourage and support knowledge sharing. Weblogs can also be viewed as an evolved form of personal web pages used to publish personal knowledge. Blogs provide control to an individual or group of individuals for publishing contents or making commentary on it by providing quick feedback (Grosbeck, 2009:479; Kumar, 2009:107). Blogs are reported as useful knowledge sharing platforms for within a collaborative work environment (Chai & Kim, 2010:408).

4.4 RSS Feeds

Really Simple Syndication (RSS) feeds is a family of web feed formats used for syndicating content from blogs or web pages which are useful in knowledge creation and sharing (Grosbeck, 2009:479; Murugesan, 2007: 35). RSS feeds is a social media tool which contains an XML file that summarises information items and links to the information sources, and therefore, informs users of updates to blogs or other web sites which they are interested in or stored within their institutions (Murugesan, 2007: 35). RSS feeds is an excellent tool for obtaining information on a regular basis from news services, and can be employed within academic libraries in order to disseminate library news and current alerts, posts library announcements, exhibition of new and already existing acquisitions processes and to enhance reference services. (Akeriwa, Penzhorn & Holmner, 2014:3; Harinarayana & Raju, 2010:76). Chua and Goh (2010:204) add that, RSS feeds supports information dissemination within academic libraries whereby users can be kept informed of the changes made to the web content including blogs and podcasts without having to revisit the website.

4.5 Social tagging

Social tagging is a very important social media tool to enhance knowledge sharing. Tagging provides a way to organise information, store the selected articles under the chosen category and also users are able to provide a note that will remind them about the content of an article, so they can easily locate the information, trace their memory, and remember the content of the article (Kim & Abbas, 2011:213). Chua and Goh (2010: 204) add that, social tagging services support information organisation and facilitate subsequent search and retrieval by allowing users to annotate websites using freely assigned keywords known as tags so that these websites will be easily accessed in the future.

4.6 Social bookmarking sites

Social bookmarking sites are very important to support knowledge sharing practices within higher learning institutions (Gray & Thompson, 2008:113). Social bookmarking can be used to link academics to free bookmarking sites online and presents many opportunities for networking with other persons or scholars with similar interests in order for them to share knowledge easily (Akeriwa, Penzhorn & Holmner, 2014:3). Social bookmarking sites allow users to build and store collections of chosen web-based resources over time in a database that is automatically maintained and shared on a web site (Grosbeck, 2009:479). The user is able to assign his/her own keywords or “tags” and annotations (such as reviews) and may be able to add comments on other people’s bookmarked resources as well (Gray & Thompson, 2008:113). According to Grosbeck (2009:479), social

bookmarking tools help to create a set of resources that can be accessed on any computer connected to the internet, to conduct research and to share those researches with peers and track author and book updates.

4.7 Photo and image sharing

Social media tools such as Flickr or Picasa are used to enhance photos and image sharing within higher learning institutions (Penzhorn, 2013: 66). Grosseck (2009:479) adds that, photo/slide sharing can be used to inspire writing and creativity, create a presentation using the photos and use tags to find photos of areas and events around the world. Therefore, photo and image sharing tools can enhance knowledge sharing practices whereby individuals can post a picture with information which needs to be shared and others can tag and provide comments to that picture. Photo and image sharing is among the useful tools to enhance knowledge sharing because people can take few minutes to respond as compared to read an article.

4.8 Video and audio sharing

Video and audio sharing social media tools such as YouTube and Podcasts contain audio and video contents which are available on the internet and that can be automatically delivered to a personal computer or MP player (Harinarayana & Raju 2010:75; Kim & Abbas, 2010:214). Podcasts can be stored within academic libraries to support library users to share knowledge through listening to lectures, debates and various conversations. Penzhorn (2013:66) adds that, "Research has shown that information is remembered better if it is encoded both visually and verbally". Video sharing applications such as YouTube can be linked to library catalogues therefore making it easier for library users to retrieve their needed information (Webb, 2007:355). Webb (2007:356) further states that using YouTube helps higher learning institutions to upload videos in any format as well as helps to assist, to train and to notify library users with new arrival library materials and contents. Mahmood and Richardson (2011:371) add that, YouTube enhance sharing knowledge through videos, to conduct interviews and to upload various speeches.

In the following section attention will be given to the methodology employed in this study. The choice of data collection instrument, sampling methods and data analysis will also be discussed.

5. Methodology

Data for this study was collected by adopting a combination of document content analysis and semi-structured interviews. This study employed a qualitative approach. According to Yin (2011:4), the qualitative approach focuses on a specific group of people, therefore this study focused on a group of knowledge workers at NM-AIST. This is a case study design. The case study was suitable for this research because the focus was unique and sought to understand the particulars of the knowledge workers in utilising social media tools to enhance knowledge sharing practices. This study included knowledge workers working at the library and ICT-RC departments. These two departments are highly involved with information and communication technology (ICT) activities such as integration and utilisation of social media tools, integration and monitoring of information systems, integrated library systems supervision, purchasing hardware and software and ensuring internet connectivity. According to Toffler (cited in Mladkova, 2011:249), typical knowledge workers are regarded as scientists, engineers or persons who operate sophisticated technology; therefore, a knowledge worker must be able to create and improve his or her technological knowledge and/or to manage technological knowledge of co-workers. Thus, the library was selected because it stores various types of materials (printed and online) which provide information and knowledge to the entire NM-AIST community. The library also employed several social media tools to facilitate library activities including knowledge transfer and exchange. The ICT-RC was selected, because it deals with the integration and implementation of various social media tools within the institution, it ensures Internet connection within the institution, ensure information security and provision of enough bandwidth in order to facilitate information and communication technology services within the institution.

Sampling procedure is the process of selecting a sub-set of people or social phenomena to be studied, from the larger universe to which they belong (Kothari 2004:55; Payne & Payne 2004:204). This

study employed a non-probability sampling technique. It was reported that, most qualitative studies tend to use non-probability (non-random) sampling technique (Teddlie & Tashakkori, 2009:170; Welman, Kruger & Mitchell, 2005:56). There are three types of non-probability sampling techniques, which are quota sampling, convenience sampling and purposive sampling (Kombo & Tromp, 2006:81). Moreover, this study employed the purposive non-probability sampling technique because it sought to get in-depth information from respondents. Patton (as cited in Pickard, 2007: 64) is of opinion that, the logic of purposeful sampling lies in selecting cases which comprise of respondents which are information-rich; therefore, in this case, information-rich cases are those from which one can learn a great deal about issues of central importance to the purposes of the research. Thus a total number of twelve respondents were interviewed for this study that is six from the library and six from the ICT-RC department.

The objectives of data collection in this study were to understand how knowledge workers utilise social media tools in order to facilitate knowledge sharing practices. There are various data collection methods used when following a qualitative approach such as interviews, focus group discussions, document content analysis methods and observation. This study employed interview and document content analysis methods. Collected data was analysed by using emerging themes (thematic analysis). According to Kombo and Tromp (2006:118), emerging themes refer to topics or major subjects which come up during discussions of the findings. These themes will be discussed in more detail in the following section.

6. The study findings and discussions

The study findings are presented according to the following themes:

- Knowledge sharing practices at NM-AIST;
- Utilisation of social media tools at NM-AIST;
- Most widely used social media tools to enhance knowledge sharing practices;
- Challenges which prohibit the utilisation of social media tools to enhance knowledge sharing practices; and
- Recommendations on how to overcome the mentioned challenges.

These themes will now be discussed in more detail.

6.1 Knowledge sharing practices at NM-AIST

The study findings were obtained from both the interview and document content analysis. The study reviewed the following NM-AIST documents: NM-AIST Corporate Strategic Plan 2013-2027, NM-AIST monitoring and evaluation report 2013; ICT-RC policy 2013, NM-AIST library annual report 2013 and NM-AIST staff training and development manual 2013. The findings from this study revealed that, there is no clear knowledge sharing practices mentioned in document content analysis; however, NM-AIST appreciated the fact that, knowledge sharing is an important aspect to the fulfilment of the institution's vision, mission and values. Respondents reported to share knowledge when needs arises. This is due to lack of time, training, awareness, policies and guidelines which entail the advantages of sharing knowledge within higher learning institutions. Respondents reported that, knowledge sharing is very important to enhance teaching, learning, research and innovation. Other advantages of knowledge sharing practices as reported by respondents include to enhance effective communication, timely decision making and for an institution to achieve its intended goals. Therefore, in order to facilitate knowledge sharing at NM-AIST, the library plans to increase the collection of library materials, to train library users on various knowledge sharing mechanisms and to increase opening and closing hours in order to provide enough time for library users to utilise library resources properly.

6.2 Utilisation of social media tools in NM-AIST

The NM-AIST has the basic ICT structure to support the integration and utilisation of web 2.0 tools within the institution. Both groups of respondents reported the existence of computers connected to

the internet in their offices and in their workplaces. However, face-to-face communication was reported as the dominant mechanism for knowledge sharing by library respondents; while the departmental Google mail and Google drive reported as dominant mechanisms for knowledge sharing as reported by ICT-RC respondents. The study found out that, most of respondents are using some social media tools (e.g Facebook, Twitter and blog) to enhance their daily activities. Most of the activities reported by those utilising social media tools include: to communication, participation, collaboration and sharing of information within and outside their departments, to provide feedback to users (library) and to promote and marketing various services (library).

Respondents reported various types of social media tools which they think must be integrated at NM-AIST which are:

- i. **Social networking tools:** such as Facebook and MySpace to facilitate online communication and interactions.
- ii. **Professional networks:** such as LinkedIn to link people within and outside the institution and to enhance online collaboration, and to exchange and share professional information and knowledge.
- iii. **Wikis:** to enhance communication and sharing of information and people can be able to edit, comment and add updates to various posts/works posted.
- iv. **Social Tagging:** to tag various articles in order to be shared amongst members.
- v. **Blogs:** to post and to read other posts respectively.

ICT-RC respondents mentioned various supports which the department offers towards the integration and utilisation of social media tools to the institution which include: to train, to install, to register and to assist on how to use various social media tools. The department also collaborate with the management in order to ensure all resources and facilities are available for the proper utilisation of social media tools.

Respondents were also asked to mention their major roles which their departments are playing in order to facilitate the utilisation of social media tools at NM-AIST. Library respondents reported to train both library staff and library users will be provided on how to join, register and use social media tools especially for those which provide direct links to the library. Example is on how to tag various articles. The library also committed to provide support and to facilitate the installation, uploading and utilising various social media tools. Library will also recommend types of social media tools which are very useful within higher learning institutions. Library respondents reported to assist and sometimes to do the installation and registration of various social media tools which are currently employed to the library. ICT-RC respondents reported that the ICT-RC can facilitate the utilisation of social media tools at NM-AIST by ensure that, the institution secure enough bandwidth for internet connection and to make sure that, all IT equipment which stored within knowledge workers' offices are working properly.

6.3 The most widely social media to enhance knowledge sharing practices at NM-AIST

Respondents reported that, there is no social media tool which is current available or employed either to the library or to the ICT-RC to enhance knowledge sharing practices. However, respondents agreed that social media tools are useful to enhance knowledge sharing practices at the NM-AIST. Respondents mentioned the most widely social media tools which can be utilised to enhance knowledge sharing practices which include: social bookmarking sites (Delicious), video/photos sharing tools (YouTube), social networking tools (Facebook), professional networks (LinkedIn and Academia.edu), micro-blogging (Twitter), social Tagging and authorising tools (Blogs and wikis). Respondents mentioned advantages of utilising social media tools to enhance knowledge sharing practices at the NM-AIST which include the following:

- i. **Online communication:** Social media tools can foster online communication among knowledge workers whereby each one can easily share, contribute and add information.
- ii. **Knowledge flow:** Social media tools can facilitate knowledge sharing practices by allowing knowledge to flow online and reach many people who can easily share, comments and suggest in various issues.
- iii. **Social network:** Social media tools create social connection/network among people within a group, so that such group can easily communicate and share knowledge.
- iv. **Up to date information:** Individual can post up to date information about a certain issue with social media such as Blogs, so that people can be attracted and start to contribute and share to the post and this leads to the creation of new knowledge and hence knowledge sharing practices.

6.4 Challenges which prohibit knowledge workers in utilising social media tools to enhance knowledge sharing practices at the NM-AIST

Respondents reported a number of challenges which hinder the utilisation of social media tools to enhance knowledge sharing practices among knowledge workers at NM-AIST and in other higher learning institutions in Tanzania and in other countries in Africa. In this study challenges were divided into three major groups: institutional challenges, technological challenges and individual challenges.

6.4.1 Institutional challenges

These are challenges which are caused by institutions or management in general. According to Sohail and Daud (2009: 131), institutional challenges are challenges that are not derived from the individual personally and they can be environmental and may be caused by individuals which occupy managerial position within the institution. Respondents reported various institutional challenges which hinder the utilisation of social media tools to enhance knowledge sharing practices within higher learning institutions. Respondents reported lack of HRM/institutional policies and practice which is also supported by Grace (2009:71) who states that, lack of human resources and institutional policies and practices to support the implementation and utilisation of social media tools in order to enhance knowledge sharing practices is among the critical problem within institutions. Respondents also mentioned lack of knowledge sharing strategies and focuses can also limit the utilisation of social media tools to enhance knowledge sharing practices within higher learning institutions. This is also supported by Riedge (2005:23) who mentioned that, the main reason why most companies do not reach their knowledge sharing goals is the lack of a clear connection between knowledge sharing strategy and usability of social media tools.

Respondents also mentioned lack of rewards, recognition and incentives from the management as among the critical challenges. In line to this, Wang and Noe (2010:118) add that, lack of incentives including recognition and rewards have been identified among the major barriers to knowledge sharing. Paroutis and Al Saleh (2009:53) also report that, lack of motivational support and recognition from management prohibit knowledge workers from utilising social media tools to enhance knowledge sharing practices. According to Hosseini and Hashempour (2012:139) and Variant and Puspitasari (2013:7) also reported lack of rewards such as money, training, attending seminars and conferences could prohibit workers to utilise social media tools to enhance knowledge sharing practices.

Respondents mentioned lack of organisational culture to support the utilisation of social media tools. Schneckenberg (2009:512) also mentioned lack of institutional culture to encourage knowledge workers to share information. Other challenges as mentioned in this category include budget constraints, lack of institutional structure, lack of institutional commitments to support the utilisation of social media tools to enhance knowledge sharing practices, lack of good working environmental and lack of manpower.

6.4.2 Technological challenges

These challenges are associated with poor technological infrastructure and high cost of internet connectivity, lack of awareness and training on how to implement and utilise social media tools to enhance knowledge sharing practices among knowledge workers, lack of local expertise, lack of ICT technical support and lack of reliable power supply. Similar problems were also reported by other studies in Tanzania. Lwoga (2012:10) reported poor infrastructure including low internet bandwidth, lack of technical support and high cost of internet connectivity were the major barriers. Lwoga (2012:10) also adds that, one university in Tanzania is required to pay not less than 104 million per year which is very expensive for most universities to afford. Makori (2011:32) reported low rates of internet penetration and unreliable power supply are the main factors which hinder the utilisation of social media tools to enhance knowledge sharing practices within academic institutions. Makori (2011) also found that, internet connectivity in higher learning in Africa is inadequate, expensive and poorly managed.

Further, lack of reliable power supply was mentioned by respondents as among the critical technological challenge facing many higher learning institutions in Tanzania. Similar findings were also reported by the studies done by Muneja and Abungu (2012) that, only 10% of Tanzanian population is connected to the national grid electricity. Lwoga (2012) also reported power rationing since 2006 in the country which poses a great challenge to higher learning institutions in Tanzania in the implementation and utilisation of social media tools to enhance knowledge sharing practices.

6.4.3 Individual challenges

Respondents reported a number of individual challenges which include lack of awareness towards utilisation of social media tools to support knowledge sharing practices, lack of training, technophobia, ignorance, lack of trust, age limit, lack of knowledge to share and lack of motivations. Low of awareness of social media tools and change of mind-set were the main challenges reported by most of respondents. Most knowledge workers are reluctant to use social media tools for knowledge sharing and this is due to believe that social media tools are mainly for social interactions and entertainment such as chatting and uploading pictures.

Respondents also reported lack of management support towards the utilisation of social media tools to enhance knowledge sharing practices among knowledge workers in higher learning institutions. Lack of encouragement and motivations among knowledge workers to utilise social media tools to enhance knowledge sharing was reported as the main challenges. This was also reported by Paroutis and Al Saleh (2009:56) that, lack of organisational or management support in terms of communicating the benefits, lack of necessary training and lack of rewards and recognitions efforts are among the challenges which hinder the utilisation of social media tools to enhance knowledge sharing.

Respondents also reported lack of time, resources and interest in the utilisation of social media tools to enhance knowledge sharing are among the most common individual challenges which hinder the usage of social media tools to enhance knowledge sharing practices among knowledge workers in higher learning institutions. Respondents also reported lack of security and privacy in most of social media tools are among the challenges which prohibit the utilisation of social media tools to enhance knowledge sharing in higher learning institutions in Tanzania.

Inadequate knowledge and skills about social media tools, their benefits and how to go about using them, age limit and lack perceptions of certain risks and downsides associated with using social media tools are among individual challenges. In addition with regards to knowledge sharing, Vuori and Okkonen (2012:593) add that, employees may not know that they have reliable knowledge to share for the organisation, even if employees recognize the importance of the knowledge to the organisation, they may not be motivated to share it and lastly, even if employees are motivated to share knowledge, there may be no mechanism to enhance knowledge sharing within the organisation. Hislop (2003:186) reports that, most of knowledge workers claimed lack of fairness, friendship, lack of trust and openness prohibit them to utilise social media tools to share their knowledge.

7. Conclusion and recommendations

This study gives an insight on the current situation on the utilisation of social media tools to enhance knowledge sharing practices among knowledge workers. From the above findings, it revealed that, knowledge sharing practices among knowledge workers at NM-AIST are fairly new and that the reasons for knowledge sharing differ between the library and ICT-RC.

Knowledge workers need to be trained and motivated to share knowledge for the development of the institution. An understanding of knowledge sharing itself is not sufficient. This study revealed lack of important factors to support knowledge sharing practices. Therefore; despite the ambiguousness of knowledge management and sharing practices at the NM-AIST, this research concluded that, factors which can enhance knowledge sharing practices need to be documented and implemented. The study also concluded that, knowledge workers are very committed to their daily duties; however they admitted on the importance of knowledge sharing practices.

The study also concluded that, the utilisation of social media tools within the library can provide linkage to the other already existing technologies (ILSs) in order to share and use library resources more effectively. Higher learning institutions need to employ various types of social media tools not only for knowledge sharing but also to discover and improve service problems that can cause gaps between the institutions' targets and achievements. The utilisation of social media tools offers various advantages within higher learning institutions; for example, to enhance discussion forum within various groups to facilitate easy access to the institutional resources, to enhance teaching, learning, research and innovation and to support information and knowledge dissemination and other similar services. Higher learning institutions are, therefore, needed to adopt and utilise various types of social media tools in order to deliver more efficient, effective and accessible services to their clients. This study identified various challenges which affected the proper utilisation of social media tools to enhance knowledge sharing practices among knowledge workers. The study therefore makes recommendations in order to address the challenges.

The study recommends staff training and development which can make higher learning staff to be equipped with enough knowledge and skills on utilisation of social media tools to enhance knowledge sharing practices within higher learning institutions. Higher learning institutions also need to employ different types of motivations such as rewards, incentives and recognition in order to encourage knowledge workers to share their knowledge. Higher learning institutions must consider and implement knowledge sharing factors such as reliable technological tools, institutional structure, HRM policies and management support. Mechanisms for knowledge sharing practices must be clearly defined and recommended in order to enhance the flow, dissemination, retrieve and use of knowledge among users.

The utilisation of social media tools to enhance knowledge sharing practices among knowledge workers is well acknowledged as used in this study. Questions still remain about how these social media tools could be employed to improve other services offered within many higher learning institutions such as teaching, learning, research and innovation. Utilisation of social media tools to support creation of new knowledge among knowledge workers within academic institutions also need to be investigated. Knowledge creation and knowledge sharing are one coin with two sides; therefore, this study investigates only one side of knowledge sharing with the help of social media tools. It was also pointed out that, social media can also help people to create knowledge but the question of how to do these still remains. The area of using incentives to encourage knowledge workers to share knowledge is also requires further investigations. Incentives cannot only foster knowledge workers to share knowledge but can also foster knowledge workers to utilise social media tools to enhance knowledge sharing practices. The use of theories to support the utilisation of social media tools to enhance knowledge sharing among knowledge workers also need to be investigated. Social media

policies to assist various activities within academic institutions also need further investigations. The future research will be to recommend a framework for the successful design the utilisation of social media tools to enhance knowledge sharing practices in higher learning institutions.

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