A survey of Knowledge Management Practice among academic staff at the University of Botswana

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Abstract

Today Knowledge Management (KM) is considered as a strategic management tool for all types of organisations. Universities being the research-intensive and knowledge generating academic institutions are better placed to practice knowledge management than any other organisation. With the above in mind, this study sought to explore the knowledge management practices at the University of Botswana. The objectives of the study were to: identify valuable/critical knowledge; examine major knowledge management initiatives; find out the existence of basic KM infrastructure; explore key processes that are most critical in knowledge management; and determine the benefits of KM; and establish the challenges faced at the University of Botswana (UB). A structured questionnaire was used to carry out the study. The questionnaire was distributed to Deans, professors and Heads of Departments. The findings of the study revealed that at the University the most valuable and critical knowledge is considered research outputs. The major KM initiative is the digital repository based in the Library to showcase the University of Botswana research. The University has required technological infrastructure, but the findings suggest that it is not being utilised in promoting KM. Further, the findings revealed that the University lacks a KM strategy with policies and procedures to promote KM and the staff are not aware of the concept of KM. The paper concludes that UB requires to develop a KM strategy and train people in KM.

Keywords

Knowledge management, Academic institutions, University of Botswana

INTRODUCTION

Universities are going through fundamental changes like other organisations. Students, academia and researchers are persistently looking for new ways to support learning, teaching and research. This change can be attributed to various reasons, such as, the heterogeneity of knowledge production, democratisation of higher education, and the integration of information technology into academia. Increasingly, Knowledge management is becoming a vital competitive tool in higher education. Academic institutions, particularly universities are seen as 'knowledge hubs' because of diverse activities for the generation, preservation, diffusion and application of knowledge. Teachers, students and researchers are all engaged in these activities (Hoq & Akter 2012). Ever since their inception, "universities have been occupied with the fundamental elements of what we now call 'knowledge management', i.e. the creation, collection, preservation and dissemination of knowledge" (Oosterlinck & Leuven (n.d.:1) and their role has been always recognized as "poles for new scientific and technological development" (Oosterlinck and Leuven 1999:5).

In universities knowledge is created through research, disseminated through publications, and transferred through working with businesses and other organizations, and learning is supported through teaching and research training programmes. Consequently, universities are expected to adopt a proactive approach to the development of knowledge management strategies, and understand how to manage and optimize the value of their knowledge assets (Fullwood, Rowley and Delbridge 2013). Thus, universities need to be "consciously and explicitly managing the processes associated with the creation of their knowledge assets, and to recognise the value of their intellectual capital to their continuing role in society, and in a wider global marketplace for higher education" (Rowley 2000:329). In view of this, this research was intended to explore the knowledge management practices at the University of Botswana.

Background information on University of Botswana

The University of Botswana (UB) is a public academic university, which is fully funded by the Government of Botswana. It was established on 1st July 1982 by an Act of Parliament. The Vision of University of Botswana is to be "a leading academic centre of excellence in Africa and the world" and the Mission of the University of

Botswana is "to improve economic and social conditions for the Nation while advancing itself as a distinctively African university with a regional and international outlook". There are seven faculties at the University of Botswana: Faculties of Business, Humanities, Science and Social Science, Education, Engineering & Technology and Health Sciences. Being the national university of Botswana, it fulfills an important purpose: advancing knowledge in the country and through it improving economic and social conditions of the nation. The University stands at number 23 among the top 100 colleges and universities of Africa ranked according to 2014 University Web Rankings (4icu.org University Web Ranking 2014). The University academic staffs comprise deans, deputy deans, full professors, associate professors, senior lecturers and lecturers. Currently, the university has an enrolment of 18,717 students (17,025 under graduate and 1,692 post graduate) and staff establishment comprises of 2,794 (32% academic, 53% support and 15% Industrial) (University of Botswana 2014). University has a University of Botswana Research, Innovation and Scholarship Archive (UBRISA) the digital repository that showcases the University of Botswana research (UBIRISA Home, n.d.). University of Botswana has modern technologies to facilitate knowledge management. It has a modern library equipped with all modern technologies and facilities such as, Online Public Access Catalogue, Full Test Online Journals A to Z, e-books, learning commons to facilitate teaching, learning and research (and search engines (UB Library 2012). University of Botswana has Blackboard and Moodle for e-learning, students' administration system (Peoplesoft Enterprise) and Resource Management (ERP) system. Hence, this study sought to investigate KM practices at the University of Botswana.

RESEARCH OBJECTIVES

The main purpose of this study was to assess the knowledge management practices at the University of Botswana. To achieve this purpose, the following objectives were pursued:

- Find-out the type of valuable/critical knowledge at the University of Botswana;
- Identify the major knowledge management initiatives at the University;
- Investigate the existence of basic knowledge management infrastructure for successful knowledge management implementation at the University of Botswana;
- Explore key processes that are used to manage knowledge at the University of Botswana;
- Establish if participants were aware of the benefits of knowledge management, and,
- Determine the challenges faced by the University of Botswana staff in managing knowledge.

LITERATURE REVIEW

The concept of KM

Knowledge management has been defined in several ways. For the purpose of this paper, the definition given by Loh et al. (2003:12) is found most suitable. They defined Knowledge management (KM) as "the task of developing and exploiting an organization's tangible and intangible knowledge resources". They have described tangible assets as research and development outputs, strategic information about customers, suppliers, products, competitors etc. and intangible assets as competencies and knowledge resources of human capital within an organisation. Loh et al. (2003) further posit that KM refers to the totality of organisational strategies for creating an intelligent organisation that can leverage upon its tangible and intangible assets to learn from its past experiences and to create new knowledge. An organizational knowledge management system (OKMS) is a system "that provides for the creation of new knowledge, the assembly of externally created knowledge, the use of existing knowledge, and the finding of knowledge from internal and external sources" (Meso and Smith 2000: 226).

Like other institutions, Universities thrive to stay relevant in this knowledge society (Loh et al. 2003). Any institution of learning is considered relevant due to its all embracing commitment to knowledge. In order to keep abreast with the rapid societal changes, educational institutions especially at the tertiary level, need to understand and master the art of effective creation, collection, dissemination, application and sharing of information (Krubu and Krub 2011:166). Hence, universities are supposed to have "a clear understanding of desirable strategic knowledge (expertise and understanding that support the strategic direction of the university) and the sources of such knowledge in the community" (Hoq and Akter 2012:95). Therefore, a number of KM initiatives are instigated at universities including institutional repositories; (Davenport, Long and Beers 1998; Rowley 2000; Loh et al. 2003; Krubu and Krub 2011); knowledge portals (Loh et al. 2003, Krubu and Krub 2011); enterprise

resource planning for meaningful access to institutional expertise; communities of Practices (CoPs), and, knowledge management research group to share the expertise (Witt et al. 2007).

Theoretical Framework

Literature reveals a number of critical elements that form the basic KM infrastructure for the successful knowledge management implementation. The key infrastructure was drawn from the literature (Davenport, Long and Beers 1998; Meso and Smith 2000; Stankosky 2005; Albers 2009; Cristina 2009; Saito et al. 2009; Sanghan 2009; Rehman et al. 2010; Becerra-Fernandez and Sabherwal 2010; Krubu and Krub 2011). Based on the literature reviewed the research proposes the following KM infrastructure as a theoretical framework:

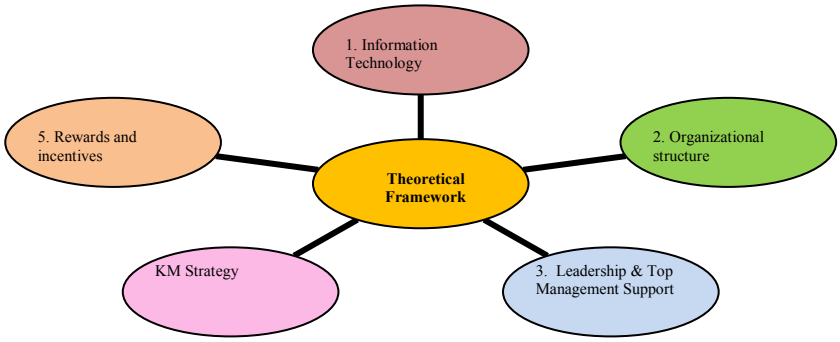

Figure 1: Proposed Knowledge Management Infrastructure

KM strategy

The main aim of any KM program is to support the strategic business objectives of an organisation. Therefore, the starting point for KM is to understand the organization's business strategies. The traditional strengths, weaknesses, opportunities, threats (SWOT) framework provides a basis for a knowledge strategy (Zack 1999). Organisations need to perform a knowledge-based SWOT analysis to better understand their strengths and weaknesses. After mapping the firm's competitive position, a gap analysis is essential in order to determine the gap between what an organisation must do to compete and what the organisation is currently doing. This represents a strategic gap. The gap between what a firm must know and what the firm does know is the knowledge gap, the purpose of KM is to fill this gap and maximise the returns on their knowledge asset. KM strategy is a plan that maps out how an organization will manage its knowledge better for the benefit of that organization and other stakeholders and employees (Albers 2009; Rehman et al. 2010).

Information technology

Information technology facilitates knowledge generation, storage and dissemination and connects people with people and people with knowledge contents (Davenport, Long and Beers, 1998; Meso and Smith 2000; Stankosky 2005; Albers 2009; Cristina 2009; Saito et al. 2009; Sanghan 2009; Rehman et al. 2010; Becerra-Fernandez and Sabherwal 2010; Krubu and Krub 2011; Mohayidin et al. 2007; Sarawanawong 2009). Since information technology is KM enabler, it is critical to have adequate technological infrastructure and expertise to initiate KM (Davenport, Long and Beers 1998; Meso and Smith 2000, Krubu and Krub 2011), such as, high-speed connectivity to the research hubs to improve knowledge access and sharing (Loh et al. 2003), knowledge transfer networks, business intelligence and collaborative software in place for effective KM implementation.

Organizational structure

Organizational structures have significant impact on knowledge sharing (Walczak 2005). Organizational structures refer to corporate culture, organisational intent, conducive environment, management style and philosophy, social architecture, organizational learning, knowledge and the people who form the organisational Knowledge Management Systems (OKMS) (Meso and Smith 2000; Loh et al. 2003; Krubu and Krub 2011). Organisational structure also consists of knowledge friendly corporate culture, management style and philosophy, info-structure support, infrastructure capacity, knowledge acquisition, generation, storage, and dissemination (Davenport, Long and Beers 1998; Meso and Smith 2000; Mohayidin et al. 2007; Albers 2009;

Cristina 2009; Sanghan 2009; Sarawanawong 2009; Rehman et al. 2010; Becerra-Fernandez and Sabherwal 2010).

Leadership and top management support

To develop appropriate capabilities and conducive environment, organizational leaders have critical roles to play for the successful KM implementation. The importance of leadership and senior management support has been voiced by numerous KM promoters (Stankosky 2005, Davenport et al, 1998, Rehman et al. 2010). Recently, Frost (2014) acknowledged inadequate management support as one of the casual failure factors of KM. Frost (2014:) argues that "the implementation of a KM programme involves the creation, acceptance, and adoption of processes, values, and systems that are either company-wide or in the very least span across functions, departments, and communities. The implementation and long term success of such far-reaching changes require top and central management backing, both from the perspective of resource and political support but also to ensure day-to-day acceptance of such measures". Frost (2014) offered several reasons on the importance of leadership and top management support such as, need for strong guidance, decision-making, change implementation; need for rewards and punishment standards; resource allocation. Thus, without the commitment and support from top management in an organization, not only KM but even any other course of action can not be followed or implemented (Rehman et al. 2010). Hence, top management support is vital in KM.

Rewards and incentives

Efficient reward systems are important in promoting knowledge sharing. "Academics are motivated to share if the incentives and reward mechanisms are encouraging to create a conducive knowledge sharing environment. Both monetary and non-monetary incentives are crucial to generate the passion toward knowledge sharing" (Cheng, Ho and Lau 2009:321). High levels of incentive systems promote higher level of motivation among employees (Fathi et al. 2011). Hence, appropriate rewards and incentives are essential to encourage knowledge creation and knowledge sharing.

METHODOLOGY

The University of Botswana has 7 faculties. Due to time constraints; this study was limited to only four faculties: Business, Humanities, Science and Social Science. Again due to time factor, the target population was restricted only to deans, deputy deans, head of the departments and full professor. The population was extracted from UB Internal Telephone Directory Year 2014. The target population consisted of 7 deans, 7 deputy deans, 67 heads and 55 full professors. Using a convenience sampling procedure, this study included only 76 academic staff from the four faculties: deans (4); deputy deans (4), heads of the departments (28), full professors (40), which represented 55.8% of the total 136. However, out of 76, the actual participants were only 42 (55%). The data collection received a 55% response rate.

A structured questionnaire was used to carry out the study, including largely quantitative questions. Questionnaire was piloted on three professors. Data was collected using a 5-Likert Scale. Since the data was small, for the clear results "strongly agree" and "agree" were combined and "Disagree" and "strongly disagree" were combined, while "Don't know" remained as it was. All data from the questionnaires were coded and processed using the statistical Package for Social Sciences (SPSS).

Limitation of the study

This research paper has the following limitations:

- Firstly, due to time limitation, this study was restricted only to four faculties out of seven and included only deans, deputy deans, heads of the departments and full professors. The results might not be the true representation of the whole University of Botswana KM practice. If all the faculties and staff were included all the faculties and staff the results may have been different.

RESEARCH FINDINGS AND DISCUSSION

The following section presents the results and discusses the implications.

Background of the participants: The participants of the study comprised of 2 deans, 2 deputy deans, 13 heads of the departments, 25 professors of which 38 were males and 4 females; 15 were from Faculty of Science, 8 Social Science, 18 Humanities and 1 from Business. The majority of the participants were professors; male and majority of them belonged to the Faculty of Humanities.

KM practice and awareness at the University of Botswana

The study sought to establish KM practises at the University of Botswana. Of the 42 participants, a majority of 25 (60%) indicated the University of Botswana was practising KM; 20 (47.6%) indicated that they were practising KM for more than 5 years; and only 9 (21.4%) indicated that there was a clearly defined vision. On the awareness of the concept of knowledge management, only 10 (23.8%) indicated that they were aware of it. This shows that more than 50% people did not have a common understanding of the concept of KM and hence, their claim of practicing KM is subjective.

Objective 1: Valuable/Critical knowledge at the University of Botswana

The participants were asked to list the most valuable knowledge in order of priority. The results are presented in Table 1 priority-wise:

Table 1: Type of valuable/critical knowledge at the University

Priority	Academic staff research outputs	Students' finished projects	Teaching materials	Lecture notes	Outgoing academic staff knowledge	Policies and procedures
First	21 (52.5%)	3 (7.9%)	5 (13.5%)	2 (5.9%)	2 (6.1%)	14 (37.8%)
Second	5 (12.5%)	13 (34.2%)	19 (51.4%)	1 (2.9%)	3 (9.1%)	
Third	12 (30.0%)	3 (7.9%)	10 (27.0%)	9 (26.5%)	3 (9.1%)	5 (13.5%)
Fourth		8 (21.1%)	3 (8.1%)	7 (20.6%)	7 (21.2%)	7 (18.9%)
Fifth	2 (5.0%)	10 (26.3%)		3 (8.8%)	9 (27.3%)	6 (16.2%)
Sixth		1 (2.6%)		12 (35.3%)	9 (27.3%)	5 (13.5%)
Total	40	38	37	34	33	37

Source: Filed data 2014

It is apparent from the Table 1 that academic staff's research output was considered the most valuable knowledge by a majority of participants, followed by the policies and procedures. Thus, policies and procedures are considered vital for the success of the University by a good number of respondents. They need to be well-managed and accessible by all the staff members of the university. Teaching materials scored the highest place under the second most valuable knowledge, followed by students' finished projects. Students' finished projects were also considered valuable under fourth and fifth category. Under the third category again staff research outputs were considered the most critical, followed by teaching materials. Lecture notes were categorised as the sixth critical priority. From the above, this is evident that although the staff considered students' projects and teaching materials valuable, research and publications are considered more important following the popular academic norm of publish or perish. Clearly, academic staffs seemed to pay more attention to their personal research to get promotions and recognition.

Objective 2: Major KM initiative

University of Botswana has established an Institutional repository to showcase the research outputs of academic staff and students as one of the major initiatives, which was acknowledged by 70.4% (30) respondents. There is Blackboard/ Moodle for student e-learning 71.4% (30), which is used by both students and staff for teaching and learning activities such as, posting lectures, student assessment reports, discussion, e-mails, safeAssign etc. (UB Blackboard, 2014). University of Botswana hosts 11 academic journals to share and disseminate reseach-outputs.

Objective 3: Basic KM infrastructure at the University of Botswana

To establish the existence of basic KM infrastructure this study investigated the five major components: information technology; organizational structure; good leadership and top management support; KM strategy and rewards and incentives. Regarding the adequacy of KM at the University of Botswana, Table 3 displays the availability of IT infrastructure in more detail:

Table 2: Information technology

S/N	Statement	Agree	Disagree	Don't know
a	The University/Faculty/ Department has adequate ICT tools for knowledge management implementation.	21 (50%)	13 (21%)	8 (19%)
b	There are Groupware and collaborative tools and technologies to collaborate internally and externally, e.g. networking technologies, chat rooms,	22 (53.7%)	14 (34.1%)	5 (12.2%)

	videoconferencing, discussion forums, Wikis, and groupware.			
c	There are business intelligence tools. E.g. e-learning technologies, expert systems, decision support systems, and intelligent agents.	24 (57.1%)	10 (23.8%	8 (19%)
d	There are content management tools, e.g. authoring tools, expertise profiling, knowledge maps, metadata tagging, and personalization of content.	6 (15.4)	16 (41%)	17 (43.6%)
e	There are social networking applications to create and share information and knowledge 24/7.	19 (45.2%)	11 (26.2%)	10 (23.8%)
f	There are integrated technologies.	15 (35.7)	15 (35.7)	12 (28.6%)
g	There is high speed connectivity to access and share knowledge.	17 (40.5%)	19 (45.2%)	2 (4.8%)

Source: Filed data 2014

From Table 2, it is evident that according to the respondents, the University does not seem to have adequate knowledge management tools and technologies in place in order to execute KM successfully. As mentioned earlier, University Botswana has hugely invested in modern information technologies; it appears from the results that participants were unable to establish a link between KM and available ICT infrastructure. However, the existence of adequate technological infrastructure is central for KM implementation, since the whole KM life-cycle is dependent on the availability of good technological infrastructure (Sarawanawong 2009; Krubu and Krub 2011; Fullwood, Rowley and Delbridge 2013).

Table 3: Organizational structure

S/N	Statement	Agree	Disagree	Don't know
a	There is a Knowledge Management Unit/Department.	10 (23.8%)	20 (47.6%)	12 (28.6%)
b	There is a knowledge manager/director to advocate and coordinate all Knowledge Management activities.	6 (14.2%)	23 (54.8%)	13 (%)
c	There is a knowledge friendly corporate culture in our work-place.	14 (33.3%)	21 (50%)	7 (16.7%)
d	Staff have positive attitude towards knowledge creation and knowledge sharing.	20 (47.6%)	20 (47.6%)	2 (4.8%)
e	University climate is favorable for knowledge creation and management e.g., staff have sufficient time for teaching, learning and research and publications and generate new knowledge.	14 (33.3%)	27 (64.3%)	1 (2.4%)
f	There are numerous opportunities for collaboration, learning and knowledge sharing.	24 (57%)	14 (33.4%)	2 (4.8%)

Source: Filed data 2014

About organizational structure, only few participants indicated that the University of Botswana has appropriate organizational structure for the execution of successful KM. A majority of respondents indicated that there was no KM unit and a knowledge manager/ director to advocate and coordinate all knowledge management activities and that a knowledge-friendly culture was missing. However, the views of respondents on staff attitudes towards knowledge creation and knowledge sharing were evenly divided. The respondents also indicated that the university provides numerous opportunities for collaboration, learning and knowledge sharing.

Table 4: Leadership and Top Management support

S/N	Statement	Agree	Disagree	Not sure
a	There is strong knowledge management leadership in the University/Faculty/Department.	10 (23.8%)	20 (47.6%)	12 (28.6%)
b	Clear directions are defined for knowledge management implementation.	5 (12%)	27 (64.4%)	9 (21.4%)
c	There is visible leadership and commitment of top management in all knowledge management activities.	9 (21.5%)	24 (57%)	9 (21.5%)

d	There is adequate funding for knowledge management infrastructure.	9 (21.4%)	19 (45.2%)	14 (33.3%)

Source: Filed data 2014

As shown in Table 4 most respondents felt that there was not strong KM leadership at the university; no clear directions were defined for KM; there was no visible leadership and commitment of top management; and, there was inadequate budget for KM initiatives. All of these are indicators that the top management did not seem to appreciate and give adequate support to KM. Effective leadership can certainly improve the success of KM initiatives in an organisation. To develop appropriate capabilities and a conducive environment, organizational leaders need to play active role in KM by translating the organization's vision and mission into a KM vision and mission and helping people realize that knowledge management is a behaviour not a project and maintaining employees' morale (Roche 2013).

Table 5: Knowledge management strategy

S/N	Statement	Agree	Disagree	Don't know
a	University has a knowledge management strategy.	9 (21.4%)	23 (54.8%)	10 (23.8%)
b	Knowledge management strategy has a clearly articulated vision and mission.	12 (28.6%)	23 (54.8%)	17 (16.7%)
c	Knowledge management strategy is aligned with the University's over all goals and objectives.	10 (23.8%)	22 (52.4%)	10 (23.8%)
d	Knowledge management strategy has been formulated with top management support.	7 (16.7%)	20 (47.6%)	15 (35.7%)

Source: Filed data 2014

Knowledge management strategy and knowledge audit are other key components for successful KM implementation. It is obvious from Table 6 responses that the majority of the participants feel that there is no KM strategy. Without a strategy KM cannot be fully executed. A case in point is most of Thai universities, where KM has not been successfully implemented due to a lack of good KM strategic planning (Sarawanawong 2009). Like any other initiative successful KM implementation depends on proper planning.

A majority of respondents (59.5%) said that there were not adequate rewards and incentives to encourage staff to fenerate and share knowledge. Only 16.7% said that the university provided adequate rewards and incentives in form of bonuses; career advancement; job security; and training on regular basis. However, sufficient reward systems are important in promoting knowledge sharing. High levels of incentive systems promote higher level of motivation among employees for knowledge sharing (Fathi et al. 2011) and encourage knowledge creation.

Objective 4: Knowledge Management key processes at the University of Botswana: This objective sought to establish the key KM processes at the University of Botswana including; KM creation/generation, knowledge storage/organisation, knowledge retrieval/access and knowledge sharing. The results are presented below:

Table 6: Knowledge generation and creation at the University of Botswana

In forms of Books	38 (90.5%)
Journal article	39 (93%)
Key note addresses	32 (76.2%)
Conference papers	38 (90.5%)
Theses	37 (88%)
Dissertations	34 (81%)

Source: Filed data 2014

From the Table 6, it is clear that the University of Botswana generates knowledge in various forms like other universities around the world. The generated knowledge is stored and organised for easy access at the University website 52.3% (22); Intranet 52.3% (22); Institutional repository 64.3% (27); and, library 75% (33). Organized knowledge is retrieved and accessed by students, staffs and other stakeholders from the Institutional repository 45.4% (20); Blackboard/ Moodle 71.4% (30); through search engines 52.2% (23); and, the library 70.4 % (31) . The major platforms of knowledge sharing were identified as e-mails 81% (34) followed by discussion groups by 43% (18) participants.

Objective 5: KM benefits: This objective sought to establish the benefits of KM. Table 8 presents the results:

Table 7: Benefits of KM

Teaching	40 (95.2%)
Research	40 (95.2%)
Learning	36 (85.7%)
Curriculum Development	29 (69%)
Performance Improvement	27 (64.3%)
Individual recognition	29 (69%)
University visibility	34 (81%)

Source: Filed data 2014

The above table shows that the majority of the participants were aware of KM benefits.

Objective 6: Challenges in practising knowledge management: This section sought participants' opinions on the challenges; they might face in managing knowledge. The findings are presented in Table 8.

Table 8: Challenges

Staff attitude to knowledge management	33 (78.6%)
Not having top management support	26 (62%)
A lack of knowledge management strategy	29 (69%)
Inadequate information technological infrastructure	21 (50%)
Inadequate staff training	24 (57%)
Insufficient rewards and incentives	38 (90.5%)

Source: Filed data 2014

Table 8 lists the challenges faced by the University of Botswana community in managing knowledge, which need to be considered for the successful implantation of KM. As can be seen from the table, the greatest challenge is insufficient rewards and incentives followed by staff attitude to knowledge management

CONCLUSION

This paper is based on an exploratory study to investigate and ascertain knowledge management practices and infrastructure at the University of Botswana. To discover the KM environment the study focussed on six objectives. The findings suggest that although the University of Botswana might not have a formal KM setting a KM strategy and Unit with a clearly defined KM vision, staff are still generating, publishing and disseminating knowledge in the form of books, articles, keynote addresses, conference papers and theses and dissertations like other universities world-wide. To showcase the academic staff and student research outputs, the University's major initiative is institutional repository and there are Blackboards and Moodle for student e-learning. Staffs were appreciative of KM benefits and it is interesting to note that the University provides numerous opportunities for collaboration, learning and knowledge sharing. In terms of valuable/critical knowledge academic staff research outputs achieved the highest score. The strength of this study is its contribution towards knowledge management issues. This study has demonstrated how a small University in a developing country is adopting KM without having an established KM strategy and clear policies and procedures for the creation, storage and dissemination of Knowledge. Based on the findings it is suggested that University of Botswana formulates a knowledge management strategy to promote the concept knowledge management and utilize the available ICT infrastructure to its fullest potential.

Contribution of the study This study can be considered valuable in the following way:

- Other empirical studies have mostly focused on one particular aspect of knowledge management; this study looked at knowledge management comprehensively including the key KM infrastructure necessary for knowledge management and key processes of KM life-cycle.
- There are a number of empirical studies carried-out in Europe, America and Asia but there is a scarcity of empirical studies in Africa on university-wide knowledge management. This study will contribute to the body of literature in knowledge management in public universities.
- One of the major findings of the study is that most members of the staff were not familiar with the concept of knowledge management, which raises a concern. Should knowledge management be seen to concern only those few who directly deal with information? If so, this can be an obstruction to a

knowledge-based economy. However, it is important to make people aware of the concept of knowledge management to appreciate the extent of knowledge-based economy.
- This study can be seen as an anchor point to generate further studies in other academic institution especially in emerging economies.

Further research
- There is a need to carry out a more comprehensive study to capture data from all levels of staff to get an in-depth knowledge of knowledge management at the University of Botswana. In further research, students' should also be elicited in order to make the research more thorough.

References

International Colleges & Universities. 2014. "2014 University Web Rankings | Africa." Retrieved 11 October, 2014, from http://www.4icu.org/topAfrica/

Albers, J.A. 2009. "A Practical Approach to Implementing Knowledge Management," *Journal of Knowledge Management Practice* (10:1), Retrieved 11 July, 2014, from http://www.tlainc.com/articl174.htm

Becerra-Fernandez, I., and Sabherwal, R. 2010. *Knowledge Management: Systems and Processes.* Armonk, N.Y.: M.E. Sharpe.

Blackboard. 2014. "University of Botswana Blackboard." Retrieved 11 October, 2014, from http://www.ub.bw/

Cain, T. J., Branin, j.j., and Sherman, W.M. 2008. "Knowledge Management and the Academy," *Educause Quarterly* (4), pp. 26-33.

Cheng, M.Y., Ho, J.S.Y., and Lau, P.M. 2009. "Knowledge sharing in academic institutions: a study of Multimedia University Malaysia," *Electronic Journal of Knowledge Management* (7:3), pp. 313-24.

Cristina, T.M. 2009. "Critical Factors to Knowledge Management Implementation." The International Conference on Economics and Administration, Faculty of Administration and Business, University of Bucharest, Romania ICEA – FAA Bucharest, 14-15th November 2009, Retrieved 11 October, 2014, from http://www.itchannel.ro/faa/816_pdfsam_ICEA_FAA_2009.pdf

Davenport, T.H., De Long, D.W., and Beers, M.C. 1998. "Successful knowledge management projects," *Sloan Management Review* (39:2), pp. 43-57.

Fathi, N., Eze, U., and Goh, G. 2011. "Key determinants of knowledge sharing in an electronics manufacturing firm in Malaysia," *Library Review* (60:1), pp. 53-67.

Frost, A. 2014. "A Synthesis of Knowledge Management Failure Factors." Retrieved 11 October, 2014, from http://www.knowledge-management-tools.net/A%20Synthesis%20of%20Knowledge%20Management%20Failure%20Factors.pdf

Fullwood, R., Rowley, J., and Delbridge, R. 2013. Knowledge sharing amongst academics in UK universities," *Journal of Knowledge Management* (17:1), pp. 123 - 136.

Hoq, K.M.G., and Akter, R. 2012. "Knowledge Management in Universities: Role of Knowledge Workers," *Bangladesh Journal of Library and Information Science* (2:1), pp. 92-102.

Kidwell, J.J., Linde, K.M. V., and Johnson, S.L. 2000. "Applying Corporate in Higher Education. *Educause Quarterly* (4), pp. 28-33.

Krubu, D.E., and Krub, S.G. 2011. "Towards sustainable development: An assessment of knowledge management initiatives in Nigerian Universities," Journal of Sustainable Development in Africa (13:3), pp. 165-177.

Loh, B., Tang, Ai-Chee, Menkhoff, T., Chay, Y.W., and Evers, Hans-Dieter. 2003. "Applying Knowledge Management in University Research." Research Collection Lee Kong Chian School of Business at

Institutional at Singapore Management University. Retrieved 12 July, 2014, from http://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=2917&context=lkcsb_research

Meso, P., and Smith, R. 2000. "A Resources-based View of organisational knowledge Management Systems," *Journal of Knowledge Management* (4:3), pp. 224-234.

Mohayidin, M.G., Azirawani, N., Kamaruddin, M.N., and Margono, M.I. 2007. "The Application of Knowledge Management in Enhancing the Performance of Malaysian Universities," *Electronic Journal of Knowledge Management* (5:3), pp. 301-312.

Oosterlinck, A., and Leuven, K.U. n.d. "Knowledge Management in Post-Secondary Education: Universities". Retrieved 12 July, 2014, www.oecd.org/dataoecd/46/21/2074921.pdf

Rehman, M., Mahmood, A.K.B., Sugathan, S.K., and Amin, A. 2010. "Implementation Of Knowledge Management In Small And Medium Enterprises," *Journal of Knowledge Management Practice* (11:1). March, 2010. Retrieved 15 July, 2014, from http://www.tlainc.com/articl221.htm

Saito, M., N., Wickramasinghe, N., Fujii, M., and Geisler, E. 2009. *Redesigning Innovative Healthcare Operation and the Role of Knowledge Management.* eBook, IGI Global.

Sanghan, I. 2009. "Knowledge Management Implementation: Holistic Framework based on Indian Study." Pacific Asia Conference on Information Systems (PACIS), PACIS 2009 Proceedings, Association for Information Systems, posted at AIS Electronic Library (AISeL). Retrieved 15 July, 2014, from http://www.pacis-net.org/file/2009/%5B83%5DKNOWLEDGE%20MANAGEMENT%20IMPLEMENTATION_%20HOLISTIC%20FRAMEWORK%20BASED%20ON%20INDIAN%20STUDY.pdf

Sarawanawong, J. 2009. "Development of a Strategic Knowledge Management Model for Thai Universities." Retrieved 15 July, 2014, from http://www.kc.tsukuba.ac.jp/colloqium/081209.pdf

Stankosky, M. 2005. "Advances in Knowledge Management: University Research Toward an Academic discipline", in Stankosky, M. (Ed.) Creating the Discipline of Knowledge Management. Washington, Elsevier Butterworth-Heinemann. Retrieved 17 July, 2014, from http://v5.books.elsevier.com/bookscat/samples/9780750678780/9780750678780.PDF

University of Botswana. 2014. "About UB." Retrieved 11 October, 2014, from http://www.ub.bw/content/id/1895/About-UB/

UB Library 2012. Retrieved 11 July, 2014, from http://linyanti.ub.bw/

Walczak, S. 2005. "Organizational knowledge management structure," *Learning Organization* (12:4), pp 330-339.

Witt, N., McDermott, A., Peters, M., and Stone, M. 2007. "A knowledge management approach to developing communities of practice amongst university and college staff.." Proceedings ascilite Singapore 2007. Retrieved 14 July, 2014, from http://www.ascilite.org.au/conferences/singapore07/procs/witt.pdf

Zack, M. H. 1999. "Developing a Knowledge Strategy," *California Management Review* (41:3), pp. 125-145.

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