A KNOWLEDGE AUDIT OF A HIGHER EDUCATION INSTITUTION: A CORE PROCESS APPROACH

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Abstract

Many adopters of knowledge management commit the mistake of not including the knowledge audit in the organisational overall knowledge management strategies and methods for conducting their knowledge management activities. This makes it important for organisations' managers to identify the knowledge the organisation needs as well as knowledge assets, and determine where this knowledge is and where it is needed, hence a knowledge audit. This paper is a knowledge audit of an institution of higher education focusing on its core processes. A mixed method research approach was used whereby a questionnaire was distributed to fifty respondents while fifteen managers were interviewed at the same time. The results of the study revealed some gaps in the knowledge possessed by the employees of this institution and its distribution which need to be addressed. Strategic knowledge among organisational employees, that is the knowledge of vision, mission, and objectives of the institution, is inadequate. The results also revealed that a reasonable number of employees lack a good theoretical and practical knowledge of the organisation's processes; employees' level of information technology skills still show some gaps that need filling in.

Keywords: Knowledge Management, knowledge audit, core process, explicit knowledge, tacit knowledge, strategic knowledge

INTRODUCTION

According to Edwards, Shaw, and Collier(2005) and O'Delland Grayson (1998), different companies need different Knowledge Management solutions, and hence adhoc or standard solutions are not a good idea. Therefore, investigating the unique environment and knowledge culture of an organisation is a necessary step in conducting knowledge Management initiatives

(Riege, 2005).Hylton (2012) states that many of the mistakes that both earlier and more recent adopters of knowledge management make emanate from the serious oversight of not including the knowledge audit in the organisational overall Knowledge Management strategies and methods for conducting their Knowledge Management initiatives.

There is no doubt that the 21st century economy has become predominantly knowledge-based and those organisations that do not have a clear and effective strategy to harness and utilize knowledge will find it extremely difficult to compete on the local, regional and global markets (Alaviand Leidner, 2001; Becerra-Fernandez, 2004; Beckerand Knudsen, 2000;Boisot, 1999). This makes it important for managers of organisations to be able to identify the knowledge needs as well as knowledge assets of their organisations and how to manage them effectively and efficiently to give them a competitive edge over their rivals. Some organisations operate without utilising the knowledge they need because they do not know where to find it. Consequently, there are often significant gaps in consistencies and duplications in knowledge resources within the organisations (Chong, 2004;Chuaand Lam, 2005). This institution, as one of the thirteen private tertiary education institutions registered with the Tertiary Education Council and receiving government sponsored students, is operating in an environment that is dynamic, highly uncertain, very sensitive and risky from a business point of view. There is therefore every reason for the institution to be able to fully exploit its intellectual capital to enable it to know what it knows and know what it does not know in its core processes and then determine how it is managing and how it should manage what it knows. This Study is a knowledge audit of an institution of higher education focusing on its core processes

LITERATURE REVIEW

Knowledge Audit

Hylton (2012) and Davenport and Prusak (1998) aver that the fundamental cause of most of the failures in KM is the serious oversight of excluding a knowledge audit in the organisation's overall knowledge management plans and initiatives. Yet an audit can uncover important insights about the state of knowledge in an organisation and how it flows. This helps an organisation to shape and determine an effective KM strategy (Debowski, 2006; Donnelly, 2008).

A knowledge audit is therefore a critical step in a KM programme. It is generally viewed as an assessment of the business needs of an organisation and its culture as well as an examination of the form of knowledge that is needed, available, and missing, and also who needs this knowledge (Paramasivan, 2003).

What necessitates a knowledge audit?

Paramasivan (2003) believes that a knowledge audit is a practical way for the organisation to get to grips with knowing what it knows, which enables it to identify owners, users, uses and key attributes of its core knowledge assets. It is often carried out in conjunction with a KM assessment as a baseline on which to develop a KM strategy. A knowledge audit should be carried out when the situation demands it. Debenham and Clark (1994) postulate that indicators that make a knowledge audit worthwhile include:

- Managers and professionals feel the symptoms of information overload;
- Key knowledge and information is difficult and slow to find;
- Useful sources of information and knowledge are accidentally stumbled upon too frequently;
- There is a duplication of knowledge gathering activities taking place across different departments;
- Questions are being raised about the value and quality of available knowledge or information systems; and
- Employees are too frequently not sure where to go for expertise in their work.

A knowledge audit is a planning document which provides a structural overview of a designated section of an organisation's knowledge as well as details of the qualitative and quantitative characteristics of the individual chunks of knowledge within that designated section. The document also identifies the knowledge repositories in which those chunks reside (Debenham and Clark, 1994). The idea is to discover what knowledge is possessed in order to find the most effective method of storage and dissemination of available knowledge. This is then used as the basis for evaluating the extent to which change needs to be introduced in terms of how the organisation is managing its knowledge assets to gain competitive advantage (Perez-Soltero, 2007).

Analyzing knowledge flows

Prinzand Syri (2007) postulate that aknowledge flow analysis examines how knowledge moves around the organisation from where the knowledge is residing currently to where it is needed, depending on the organisation's operational activities. An analysis of knowledge flow seeks to discover how people find the knowledge they require in their day to day activities, and how they

share the knowledge that they possess in the process of going about their core activities. It focuses on people, processes, and systems as briefly explained below (Paramasivan, 2003) as:

- People

  The focus of knowledge flow analysis is employee (people) attitudes towards knowledge sharing and use, as well as their behaviours and habits concerning their skills in knowledge sharing and use.

- Processes

  This implies looking at how people go about their daily work activities and to what extent they seek, share and use knowledge in the process of undertaking those daily responsibilities. The audit at this stage also looks at what policies and practices currently affect the flow and use of knowledge in the organisation.

- Systems

  An assessment is required of key capabilities that will be used in any recommended actions or solutions. The focus will be on technical infrastructure, that is, information technology systems, management of content, accessibility and ease of use of technology, and current levels of use of the technology. In other words, the question to be asked and answered here is to what extent the organisation's systems effectively facilitate knowledge flows and help to connect people with information and the people who need information.

This paper is a knowledge audit of a higher education institution focusing on its core processes. It is premised on the audit model shown in Figure 1.

Firstly, the model shows the diverse elements with which an organisation counts, that is, the strategic elements namely mission, vision and organisational objectives, and the structural elements namely workers, processes, and technologies.

Second, the model considers the core processes of the organisation, that is, cross-functional activities that are essential for the achievement of organisational goals. They integrate people, materials, equipment, information, and so on.

Valuable knowledge that exists in these core processes is identified, evaluated, and classified, while the people who determine the efficiency of the knowledge flow are also identified.

Figure 1: Knowledge Audit Model considering organisational core processes
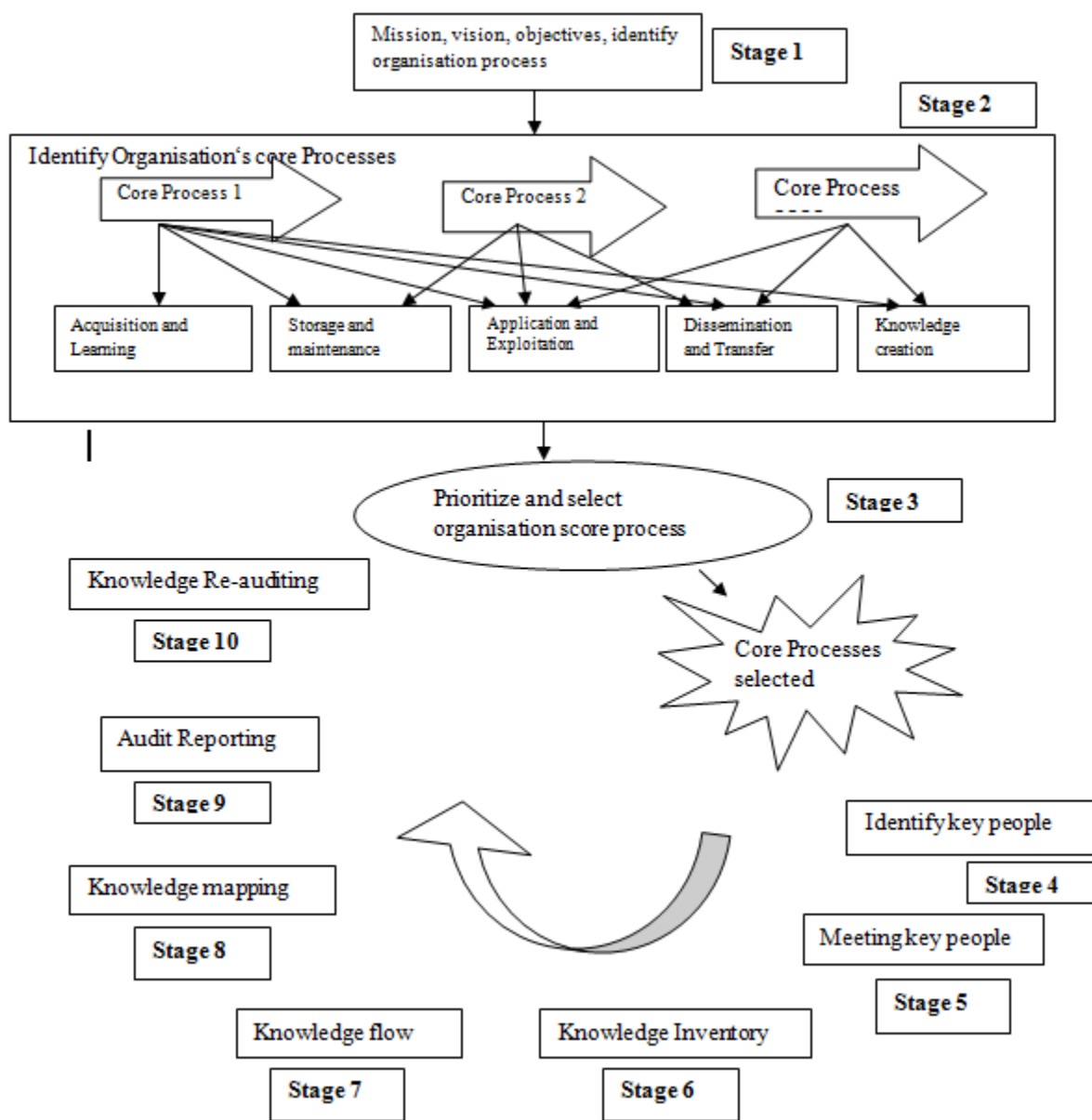
Source: Perez-Soltero et al.

RESEARCH METHODOLOGY

This study used the mixed methods approach in collecting data. The concurrent mixed method design was applied whereby quantitative data through the questionnaire was collected at the same time with qualitative data through interviews, and then the major findings from all strands subsequently synthesised. Results of the interviews were used to corroborate and buttress the outcome of the questionnaire and probe further to remove any doubt about the authenticity of the findings.

The questionnaire was used to determine the availability and effectiveness of the flow of knowledge in the institution as well as identifying its core processes. Stratified random sampling (chance sampling) was adopted for this paper, a technique used to acquire a representative sample when the population to be sampled does not constitute a homogeneous group (Kothari, 2011). The population was stratified into several sub-populations (strata) that were individually more homogenous than the overall population. The different strata comprised academic and non-academic staff in middle management, lower management and non-managerial positions. From the qualitative side, units of analysis were selected based on some characteristics from which the most can be learned about the research problem. Purposive sampling was therefore used to select interview respondents with a good knowledge on the topic.

In order to get a firmer understanding of the state of knowledge in the organisation and its core processes, interviews were conducted with selected members of senior and middle management. All in all, fifteen respondents were interviewed ranging from junior to top management. The interviews enabled participants to discuss their understanding and interpretations of the vital phenomena under investigation and to express how they regard situations with reference to knowledge sharing at the institution from their own points of view. Questionnaires were distributed to fifty employees of the organisation and forty-six were returned translating to a 92% response rate.

ANALYSIS AND RESULTS

The college and its core processes

The organisation is a higher education institution registered with the Tertiary Education Council (TEC) and the Botswana Training authority (BOTA). It offers degrees and diplomas in Information Technology, Engineering, Accounting, and Business Management among others. It also offers professional accounting qualifications such as Association of Certified Chartered Accountancy (ACCA), Chartered Institute of Management Accountancy (CIMA), and Association of Accounting Technicians (AAT).

According to the college's website, its core processes are as follows:

Education- This key process is the foundation or basis of the organisation's existence. It involves teaching, setting and marking examinations, and research.

Assessments- This key process is concerned with organising, managing and conducting all examinations and projects at the institution. It is concerned with the publishing of assessment results which should be done in a transparent and fair manner ensuring utmost confidentiality. The success of any academic institution is, to a large extent, determined by the success of its examination processes hence the importance of this process.

Management Information Systems (MIS)- This department is the central repository of all student related personal and academic information at the institution. The process involves monitoring all student attendance, keeping students records, providing students with their academic transcripts, certificates and resolving any issues to do with academic records management system.

Admissions- This process encompasses the admission of students into the college. It involves application of the admission criteria in selecting students, administering the selection test, managing the exemption policy, checking applicants' results, initiating offer letters and passing the information to MIS.

The processes outlined above are the major (core) processes at the college that are supposed to benefit immensely from an effective KM programme. It is the essence of this paper to carry out a knowledge audit around these core processes and identifying knowledge gaps.

Strategic knowledge

This theme was an attempt to determine respondents' knowledge of their organisation's vision and mission so as to depict if they are working towards the vision and mission. The majority of respondents have no knowledge of the vision and mission of their institution. Of the forty-six respondents who returned questionnaires, sixty-five percent did not agree to have knowledge of the organisation's vision and mission as illustrated in Figure 2:

Figure 2: Knowledge of vision and mission of the college
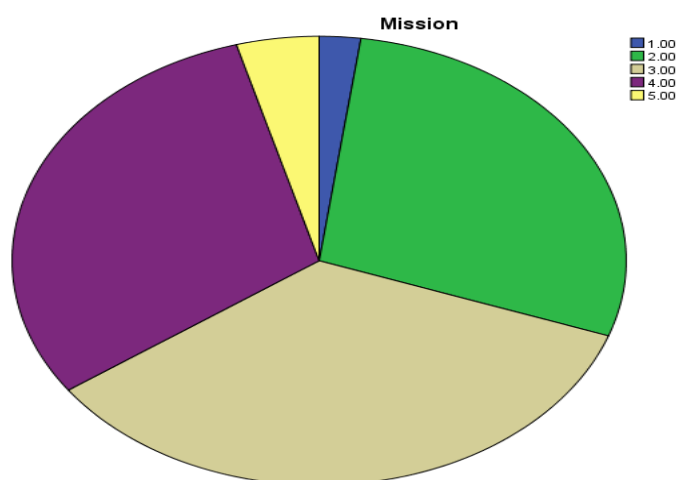
Again, about seventy-four percent of the respondents did not agree to the statement that they have knowledge of the objectives of the institution. Most responses ranged from neutral to disagree.

Table 1: Knowledge of objectives of Botho College

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	4.3	4.3	4.3
	2.00	12	26.1	26.1	30.4
	3.00	20	43.5	43.5	73.9
	4.00	10	21.7	21.7	95.7
	5.00	2	4.3	4.3	100.0
	Total	46	100.0	100.0	

Figure 3: Knowledge of objectives of Botho College
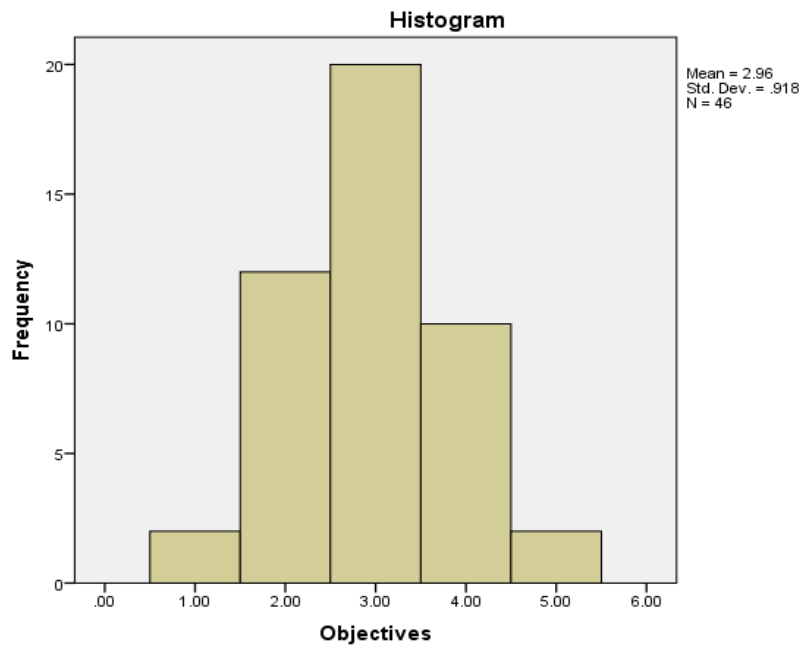
Respondents exhibited poor knowledge of objectives of their organisation. For instance, only 12 respondents agreed to the statement that they have knowledge of the college's objectives, while 20 were neutral, and 14 did not agree with the statement.

Table 2: multi-response_ Strategic Frequencies

		Responses		Percent of Cases
		N	Percent	
Knowledge of strategic information	Strongly disagree	13	5.7%	28.3%
	Disagree	53	23.0%	115.2%
	Neutral	103	44.8%	223.9%
	Agree	49	21.3%	106.5%
	Strongly agree	12	5.2%	26.1%
Total		230	100.0%	500.0%

The table above shows that 73, 5% do not have knowledge of the strategic vision and mission of the college. This is shown as Pearson correlation below.

Table 3: Knowledge of the college's vision and mission
* Sharing of the college's vision and mission cross tabulation

		Sharing of BC's vision and mission					Total
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Knowledge of BC's vision and mission	Strongly disagree	2	0	0	0	0	2
	Disagree	2	9	1	0	0	12
	Neutral	0	0	16	0	0	16
	Agree	0	0	0	10	4	14
	Strongly agree	0	0	0	0	2	2
Total		4	9	17	10	6	46

The results show that 10 of the respondents that agree to have knowledge of the vision and mission of the college also agree in sharing that vision and mission. Furthermore, four of those that agree to having knowledge of the vision and mission of the college strongly agree to the sharing of that vision and mission too. Two of them strongly agree to have knowledge of vision and mission of the college and they also strongly agree to the sharing of the same.

Table 4: Symmetric Measures

|		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.945	.015	19.191	.000[c]
Ordinal by Ordinal	Spearman Correlation	.970	.013	26.284	.000[c]
N of Valid Cases		46			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Results are between -1 and 1. A result of -1 means that there is a perfect negative correlation between the two values, while a result of 1 means that there is a perfect positive correlation between the two variables. A result of 0 means that there is no linear relationship between the two variables. The closer the value of r gets to zero, the greater the variation the data points are around the line of best fit.

High correlation: .5 to 1.0 or -0.5 to 1.0. These scenarios are shown below.

Figure 4: Correlation Cofficients

| r = 0.4 | r = 0 | r = -0.4 |
| Positive Correlation | No correlation | Negative |
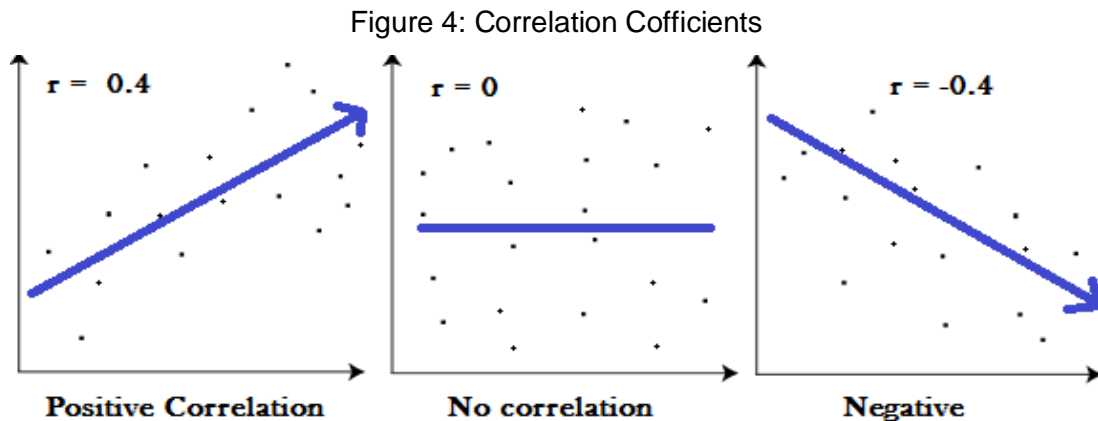
As the statistics show an r value is 0.945, this means there is a high correlation between knowledge of vision and mission of the college and sharing of that vision and mission.

Knowledge of organisational processes

The majority of the fifteen interviewees (ten of them) indicated that while they may have good knowledge of their work processes owing to their level of education and training, there are times their performance is hampered by lack of knowledge on certain processes. There are times they become stuck due to lack of procedural knowledge and have to postpone some processes while consulting their superiors. They indicated that there are so many things about their work that they still need to know. This is confirmed by the fact that at times they fail to perform some tasks under their jurisdiction because such tasks and activities will also be new and unfamiliar to them. Two lower level managers gave examples of separate incidents when students fought during lectures. They did not know the next step to take after stopping the fight since for both of them that was their first time to come across such a scenario. Most middle managers asserted that while training and instructions have been given by top management, these have not been enough because some of the work processes are not directions and routines, but emanate from tacit knowledge. They felt that this has impacted negatively on their own effectiveness reducing their productivity as they seek more information and knowledge. One lower level manager indicated that some knowledge they receive from their supervisors seems to be more of a matter of individual generosity than responsibility particularly on matters of student discipline, professional conduct and so on. Most team leaders interviewed cited lack of knowledge on student disciplinary matters as their greatest challenge as there is no explicit policy on the matter leaving them to have to use their own discretion. For instance, one team leader intimated

that he once got himself into trouble after expelling a misbehaving student from class. The student reported the issue to the Director who gave the Team Leader a verbal warning arguing that there was no policy authorizing lecturers to exclude students from class. Only senior management can do so. What complicates issues of student discipline further is that it involves a number of different departments such as Education, Security, and Students Services yet there is no clear explanation on what role each of these departments plays and at what stage, or where the whole issue is kick started.

Most interviewees indicated that top management is trying hard to improve knowledge of their work. Business programmes Team leaders particularly feel their theoretical knowledge is way above the requirements of their work since they all have Masters' degrees yet they are all teaching at the foundation year level. They indicated that management tries to improve their knowledge through regular briefings, training, and workshops. However, there is a feeling among most of them that workshops are too few and far between. The diagrams below represent the extent to which at times the college employees are unaware of how to handle certain work processes in the organisation:

Table 5: Knowledge of the college processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	4	8.7	8.7	8.7
	2.00	5	10.9	10.9	19.6
	3.00	3	6.5	6.5	26.1
	4.00	29	63.0	63.0	89.1
	5.00	5	10.9	10.9	100.0
	Total	46	100.0	100.0	

Figure 5: Knowledge of the college processes
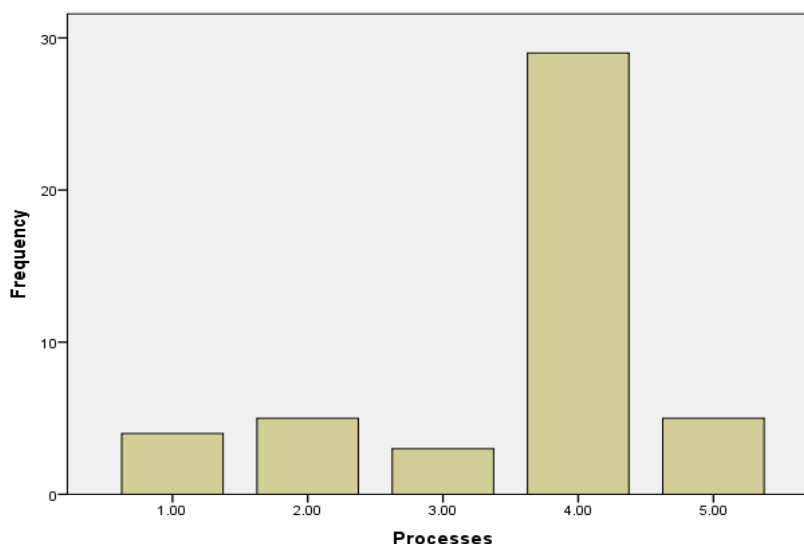
This question sought to determine the extent to which the college's employees are well versed with the organisation's processes while doing their work. Thirty-four respondents agreed with the statement that there are times they are not sure what to do when confronted with some work situations. Only eight respondents believe the statement to be untrue to them.

Information technology (IT) skills

Most college employees have good knowledge of IT skills which is quite commendable as most of the college's work processes are computer- based. Figure 6 illustrates this scenario from responses to the questionnaire:

Table 6: IT skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	4.3	4.3	4.3
	Disagree	4	8.7	8.7	13.0
	Neutral	4	8.7	8.7	21.7
	Agree	20	43.5	43.5	65.2
	Strongly agree	16	34.8	34.8	100.0
	Total	46	100.0	100.0	

Figure 6: IT skills
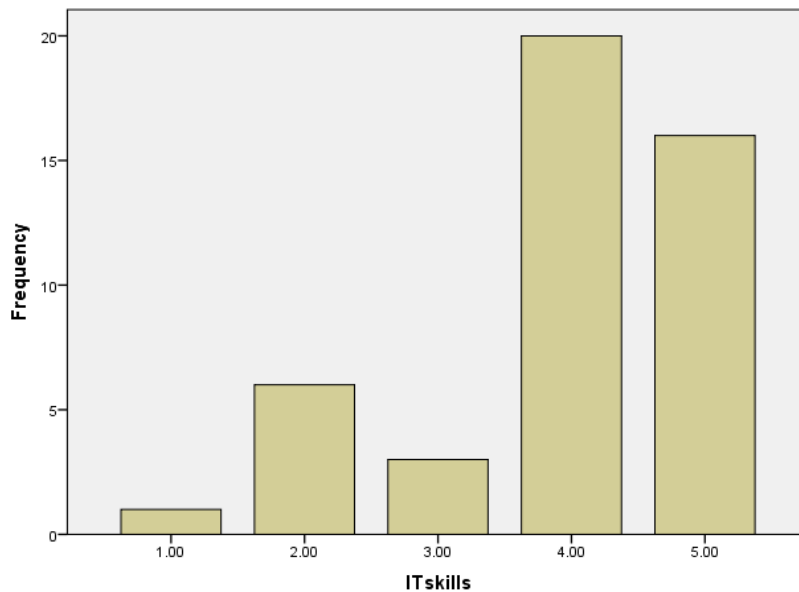
Seventy-eight percent of the respondents agreed to the statement that they have excellent IT skills, while about ten respondents (about twenty-two percent) did not agree with the statement.

However, the figure that does not agree to the statement is still high considering that all respondents came from key process areas and that the institution is technology – based.
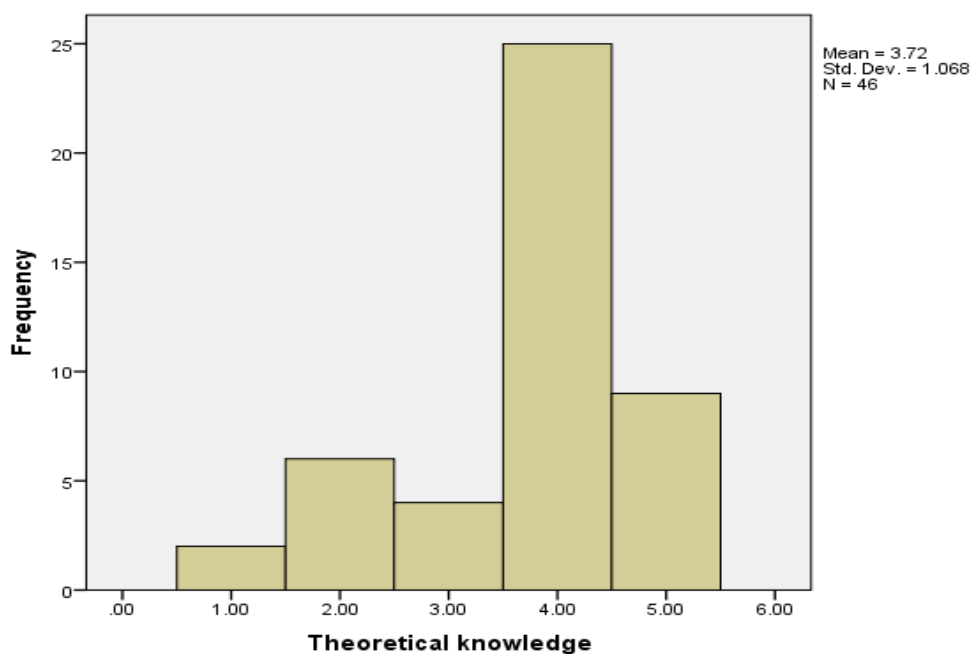
Theoretical Knowledge

A good number of the college employees have a good knowledge of their work owing to their good education. Table 7 shows the distribution of respondents by this aspect and whether other employees are aware of this theoretical knowledge:

Table 7: Theoretical Knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	4.3	4.3	4.3
	Disagree	6	13.0	13.0	17.4
	Neutral	4	8.7	8.7	26.1
	Agree	25	54.3	54.3	80.4
	Strongly agree	9	19.6	19.6	100.0
	Total	46	100.0	100.0	

Figure 7: Theoretical Knowledge

Seventy-four percent of the employees are aware of the theoretical knowledge of their colleagues while the remainder (twenty-six) is not aware of who holds what qualifications in the institution.

Explicit and tacit knowledge

Fourteen of the fifteen interviewees indicated that they have access to both explicit and tacit knowledge at the college in the form of written instructions and directives from the Directors, regular emails, telephone calls, the website, several databases such as the Leave Management System, the Student Feedback System, the I-Tracker and others, meetings with their supervisors as well as briefings and workshops. Should they become stuck in their work processes as is normally the case, they always appeal to their immediate supervisors and superiors for guidance. Five Team leaders interviewed feel expertise particularly in some departments such as Assessments, MIS, Technical, Projects Office, and Career Services is too concentrated in the hands of the managers in charge such that in their absence it is difficult to undertake certain processes effectively. A case in point was the previous week when the Assessments Manager did not turn up for work. Two departments failed to access the examination server because the Assessments Team Leader did not have the credentials required to access the data base. The director had to call the Assessments manager from home to get the credentials. When those were accessed, it was discovered that the server could only be accessed from the Assessments manager's laptop, which he had at home. Someone had to drive there to collect it. The examination started three hours late.

Those in charge of franchised programmes run in partnership with other institutions have access to the databases of these institutions as well as access to the staff portals of the particular heads of departments of these institutions and communicate directly with these departmental experts through emails and telephone. For all email communication, they have to copy the Associate Director and Director for purposes of transparency. Such knowledge helps the college junior and middle level managers entangle complex issues when they confront them. However, eight of the fifteen interviewees intimated that such knowledge is not always readily available due to communication breakdowns, internet failure, distance and other barriers. Instances were recorded, for example, where examinations had to be postponed after the section head failed to connect to the server and the expert was not readily available. Seven respondents out of fifteen indicated that some of the explicit knowledge they receive from experts is not clear particularly through the phone and emails due to differences in accent and vocabulary especially that coming from experts in the United Kingdom and India. On training and development opportunities, eleven of the fifteen respondents indicated that training is given though it is far and wide especially by the external partners owing to distance. Assistance given by the local Directors is inadequate as they too have inadequate knowledge of some work processes of these external programmes. Sometimes it takes a number of emails and telephone calls before solutions to challenges are obtained.

A good number of respondents at the lower rungs of the college agreed to the statement that there are times they are not sure as to whom exactly to approach to solve certain problems related to their work. Table 8 illustrates the distribution of responses on the matter:

Figure 8: Explicit and Tacit Knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	4.3	4.3	4.3
	2.00	5	10.9	10.9	15.2
	4.00	36	78.3	78.3	93.5
	5.00	3	6.5	6.5	100.0
	Total	46	100.0	100.0	

Figure 8: Explicit and Tacit Knowledge
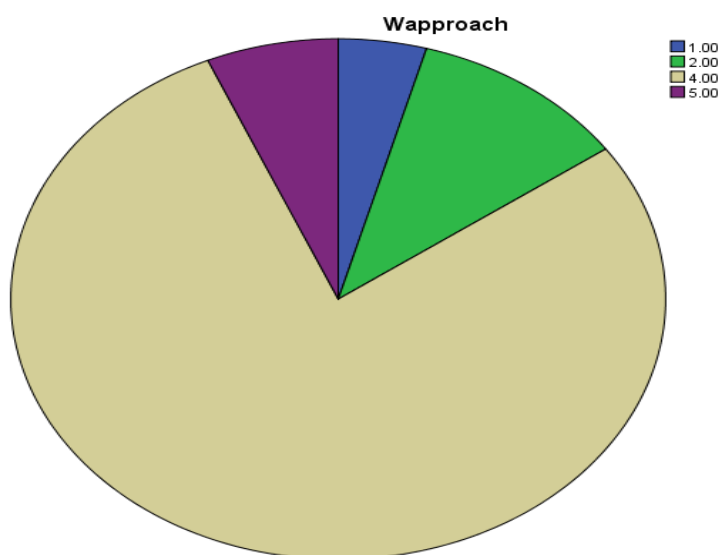
Staff development

On staff development through further education virtually all the fifteen members interviewed feel senior management is making considerable effort to improve the knowledge of their staff. Citizen staff is being sponsored for further education but only with local institutions that offer part time study, or external institutions that offer distance learning as there is no provision for sponsorship of full time study. For expatriate staff which constitutes about 70% of the teaching staff, sponsorship for further study is through soft loans with an attractive interest rate of 1,67%. According to the records obtained from the Human Resources department, about twenty- three teaching and non-teaching staff members have benefited from this sponsorship between 2008

and 2012. However, all the eleven interviewees who happen to be expatriate staff are of the view that the sponsorship policy is discriminatory as it is too generous to local staff who they feel contribute much less to the development of the institution than expatriate staff. They also feel that the criteria used to select beneficiaries is not clear or is absent, leaving it to the discretion of the directors to decide who they want to sponsor or who they do not.

CONCLUSIONS

The results of the audit of the higher education institution, focusing on its core processes, revealed knowledge gaps that need to be filled. Strategic knowledge among organisational employees is inadequate, and there is need for institutional top leadership to conduct workshops to educate employees on the vision, mission, and objectives of the institution, and motivate them to believe and support the vision, mission, and objectives of the organisation. This view is supported by O'Dell and Grayson (1998) who argue that vision plays a crucial role in propagating knowledge sharing and that knowledge of overall organisation's vision generates a clear organisational purpose so that it can achieve its desired future goals, which in turn, are important to engender a sense of involvement and contribution among employees.

The research discovered that while knowledge of organisational processes is reasonably good, there is still much room for improvement. The findings confirmed that a sizeable number of employees, including those in middle, lower, and even top management lack effective theoretical and practical knowledge of the college's organisational processes. The net effect of this scenario is hampering of the productivity and performance of such employees in particular and the organisation in general. There is therefore need for more induction and enhancement of both explicit and tacit knowledge of organisational processes among employees at all levels of the organisation.

Results of the study revealed that employees' levels of IT skills are reasonably good (78% as opposed to 22% who do not have good IT skills). However, considering that most organisational processes of this institution are imbedded in technology, the figure of those who are not fully conversant with issues of technology is unacceptable. All employees in this kind of environment need to possess excellent IT skills for them to be effective in their work processeseffective technology is pivotal in formal knowledge management (KM) processes. This view is buttressed by Kokemuller (2013, p.113) who believes that without effective technology and employees' ability to use it effectively, KM is "little more than instinctive or intuitive decisions based on experiences and expectations". KM is facilitated by IT departments that help establish technology infrastructure and then assist an organisation's employees to learn how to effectively use the infrastructure to extract useful data and information in a way that

is usable for gaining knowledge. This view is reinforced by Hansen et al (2009) who posit that IT enables codification of knowledge through common storage in order to achieve economic reuse of knowledge (electronic knowledge repositories). IT also enables personalisation of knowledge where more tacit and unstructured knowledge is shared largely through direct personal communication, and here IT helps people to locate each other and communicate so as to achieve complex knowledge transfer (Huang and Pan, 2010).

Though the contribution of this study to the genre of knowledge management is immense, it is useful to acknowledge the existence of limitations that leave room for further research. The most obvious limitation is that the study was a knowledge audit of a single higher education institution and the results of the study may not be generalisable to all similar institutions. However, at least in learning institutions, the results should be valuable. Without the prohibition of cost and time, a larger sample would have rendered the results much more reliable than they are. Qualitative research is particularly subject to researcher bias although the researcher tried to reduce the effect of bias by approaching the discussion objectively. Due to cultural differences of the respondents, further research is required focusing on different cultural dimensions and how they influence KM processes.

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