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Prospects of Knowledge Sharing Among Ethiopian Institutions of Higher Learning

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Abstract

Over the past years, the number of public Higher Learning Institutions in Ethiopia has increased from 9 to 23. These institutions have knowledge repositories both electronic and paper based. They are also expected to facilitate the sharing of available knowledge among the academic community – a situation which needs particular attention. Based on a survey, review of available documents and discussions with relevant individuals, the paper presents the existing level of staff awareness and practice of knowledge sharing among higher learning institutions in Ethiopia, as well as the extent of organizational and infrastructural support. The paper also makes recommendations on strategies and mechanisms that need to be devised in order to overcome knowledge sharing barriers and promote effective utilization of ICT for knowledge exchange.

Keywords: knowledge, information, university, quality, higher education, ICT

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1. Introduction

In what is widely known as the "information spectrum", knowledge is information applied with experience and judgement. In this so called knowledge age, knowledge is considered as the most critical "means of production", even more critical than the traditional ones like land, labour, and capital. Therefore, knowledge needs to be managed if it is going to yield the required results.

There are a lot of definitions of knowledge management as every writer tries to mould one that fits her/his domain of operation. According to King (2009), a very simple definition "for knowledge management could be "[the] planning, organizing, motivating, and controlling of people, processes and systems in the organization to ensure that its knowledge-related assets are improved and effectively employed".

In the context of educational institutions, Kidwell et al. (2000) state that knowledge management promises better services to stakeholders, reduced costs, shorter development cycle for products like curriculum and research, and an overall improvement in performance. In their widely cited work, "The knowledge-creating company", Nonaka and Takeuchi (1995) propose a knowledge cycle with four stages. Initially, an individual makes her own discovery at a personal level. When the personal knowledge is made explicit, it will become in the community domain. At the third stage, people will blend and reuse knowledge gained from the community knowledge space and create new knowledge. At the closing loop of the cycle, we return back to the point where the individual makes her own investigations or research to solve "personal"/unique problems.

Based on a similar "knowledge cycle", Huysman and Wit (2003), identified three types of knowledge sharing.

- Knowledge retrieval: Knowledge is transferred from the organization to the individual.
- Knowledge exchange: Knowledge is transferred from an individual to other individuals.

• Knowledge creation: Knowledge is transferred among individuals.

Accordingly, Conway and Sligar (2002) claim that knowledge is in one of the four spaces or frames: individual, community, corporate, or public. Individuals and organizations do, therefore, have roles to facilitate the creation, transfer, and regeneration of knowledge.

One can also empirically suggest the barriers for knowledge sharing. In a case study done in Malaysia, Jain et al. (2007) identify rewards, availability of time, organizational effort, organizational culture, and lack of interaction as the five most important barriers for knowledge sharing. In some other researches individual, organizational, and technological factors are identified as the three most important categories of issues influencing the success or failure of knowledge sharing in organizations.

Alhammad et al. (2009), in their study of knowledge sharing in Jordanian Universities, concluded that "academic staff have fewer mutual relationships, team working opportunities, intentions and motivations to share their knowledge". What is more, while there is no difference in the knowledge sharing habits of females and males, younger staff are not motivated to be "creative".

Cheng et al. (2009) made a report of a case study research on the knowledge sharing practices of staff in the Multimedia University of Malaysia (MMU). In MMU, there is a formal requirement that all academic staff have to share their research (even if it is an abstract) at least once a year on a system called ShareNet. Most of the respondents however had some misgivings about this imposition and said that they would not have used it had it not been required by the management. The researchers concluded that people-orientation should take primacy over technological orientation in creating an environment of knowledge sharing. Monetary and non-monetary incentives, and "personal expectations" like developing ones own knowledge and being recognised as 'selfless by sharing', were found to be the two most important factors in the decision of staff whether to share or not.

In a study conducted in the Indian Business School with the objective of "assessing success factors of knowledge management initiatives of academic institutions", Basu and Sengupta (2007) identify "integrated technical infrastructure, organisational culture, motivation and commitment of users and senior management support" as the four most critical success factors.

Although one observes that knowledge sharing is becoming important in higher learning institutions to support the teaching learning process and research activities, this does not seem to be successfully implemented in Ethiopian higher learning institutions. It was therefore found important to initiate a study on knowledge sharing practices. The study presented in this paper is the first step in an ongoing research work to assess existing level of staff awareness and practice of knowledge sharing among higher learning institutions in Ethiopia as well as the level of organizational and infrastructural support for knowledge sharing.

The paper is organized as follows. This introductory section briefly gave highlights of knowledge sharing as an introduction of the study. Section two presents the study objectives and background. Section three outlines the methodology employed to collect data. The fourth section presents data obtained as a result of the surveys conducted and interviews made with some selected senior faculty. This section also discusses findings based on the presented data. Conclusions and recommendations are provided in the last section.

2 Study Objectives and Background

Recently in Ethiopia, there seems to be an increased understanding and recognition at national level on the importance of an educated workforce to economic growth and national development, and that greater access to higher education is a pre-requisite in this regard. To this end, major and rapid initiatives are being taken to expand higher learning institutions in the country. At the time of writing this paper, there are 23 public universities in Ethiopia. The oldest University is 60 years old while the youngest ones (13 in number) are only four years old.

The challenge for these new institutions basically lies in establishing systems because of lack of organization experience. Creating curriculum, setting up research themes and groups, and even delivering courses are the main challenges in these new academic institutions not only because they lack experience but also they are short of the requisite resources. Therefore, sharing knowledge with other academic institutions is a must for many of them. Moreover, with such expansion, the huge enrolment has outstripped the capacity of the faculty in virtually all the institutions. In the current setting, due to the overwhelming increase in the student population, most faculty members are very busy in teaching. Most of their time is consumed in preparing lecture materials, project design and examination activities. They have actually no time left for conducting research and related academic activities. Under the existing circumstance, maintaining quality is an even more challenge as compared to the expansion.

In view of the above, one duly recognizes the role of knowledge sharing as one of the areas to be explored to meet the challenges. More specifically, the study aimed to:

- evaluate to what extent academic staff of Ethiopian public higher learning institutions understand and practice knowledge sharing;
- assess personal, organizational, and technological barriers that limit knowledge sharing in Ethiopian institutions of higher learning; and
- establish ways of supporting knowledge sharing practices for the betterment of performances of the Ethiopian public higher learning institutions.

3. Methodology

3.1 Subjects of the study

The study focused on nine public universities, namely, Adama University, Addis Ababa University, Arbaminch University, Bahir Dar University, Gondar University, Haramaya University, Hawassa University, Jimma University and Mekele University, These institutions were purposely considered for the study because of their relatively long history of existence (more than 10 years) and since they have better technical infrastructure including networks, computers and software. Some of these institutions have even developed an organizational support infrastructure for knowledge sharing through the use of eLearning platforms. With the view to create awareness, develop initiatives, advocate and support IT-based knowledge sharing practices initially, the study focused on individual teaching staff from the IT Departments (as well as those working in the ICT offices) of the 9 institutions.

3.2 Data collection

In order to meet the objectives of the study, questionnaire surveys, interview and observation as well as informal discussions were used as data collection methods.

(i) Questionnaire survey

The variables considered in this preliminary study were individual, infrastructural, organizational, and technical factors. In particular, the data collection instrument contained four parts. The first part contained 5 items relating to the demographic profile of respondents. Part two comprised 15 items that elicit information on knowledge sharing practices. Part three contained 9 items pertaining to organization support regarding knowledge sharing. Part four contained three items relating to the availability and use of technical infrastructure for knowledge sharing. The Likert Scale was considered, which asked respondents to express their level of belief/attitude on a set of statements using a three-point scale. This method seemed the most viable option to capture the responses and to gauge the perception they have of the knowledge sharing practices in their respective universities.

To expedite the data collection process and to ensure high rate of return, existing contacts were used to identify individuals to whom the questionnaires were emailed. From a total of 125 questionnaires distributed, 90 were properly filled out and returned, giving a response rate of 72%.

(iii) Observation and informal discussions

In order to gain a better understanding of the study objectives outlined above, the questionnaire survey was supplemented by semi-structured interviews with relevant individuals. The websites of the nine institutions were also studied in order to get a deeper understanding of the knowledge sharing practices. Moreover, informal discussions with colleagues at Addis Ababa University were very important in supplementing the data collected.

Attempts were also made to consult available documents and reports pertaining to the availability and use of technological infrastructure.

3.3 Data analysis

The data collected from the formal and informal interview as well as observations made on the website were qualitatively categorized and thematically analyzed. Since the nature of the data collected through questionnaire was quantitative, a statistical package (SPSS 16) was used to code, process and analyze the data. Data are reported by percentages of responses for all parts of the questionnaire.

4. Findings and Discussion

4.1 Respondents' profile

Following the presentation formats employed in similar studies else where, the demographic variables used in this study are presented in Table 1 below.

Respondents' profile	Classification	Percentage
Gender	Male	88.9
	Female	11.1
Age Group	Less than 23 years	3.3
	23-30 years	30.0
	31-40 years	41.1
	41-50 years	23.3
	Above 50	2.2
Educational Level	Bachelors	40.0
	Masters	54.4
	Doctorate	5.6
Academic Rank	Assistant Lecturer	20.0
	Lecturer	72.2
	Assistant Professor	7.8
Experience in higher learning institutions	3-10 years	55.6
	11-15 years	35.6
	Greater than 15 years	8.9

Table 1: Demographic profile of respondents

As can be seen from the figures in Table 1, the majority of the respondents were male (about 89%). The highest number of respondents hold the rank of Lecturer (about 72%), with Master's degree (54%). Most of them are 31-40 years old (41.1%), with less than 15 years of experience (about 91%).

4.2 Knowledge sharing practices

One of the objectives of this study was to assess to what extent academic staff in the various IT Departments of Ethiopian public higher learning institutions understand the importance of knowledge sharing and practice same. The responses received on the statements related to knowledge sharing practices are presented in Table 2 below.

Τ	ab	le	2	2:]	Know	ledge	shar	ing	practices
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	Knowledge sharing practice statements	High	Medium	Low
1.	Rate of motivation to transfer knowledge to colleagues	45.6%	36.7%	17.8%
	within and outside the University			
2.	Rate of practice of documenting own work	28.9%	17.8%	53.3%
3.	Rate of participation in workshops, seminars, panels,	36.7%	35.6%	27.8%
	etc within own University and in other public HEIs			
4.	Frequency of knowledge sharing	27.8%	17.8%	54.4%

Knowledge sharing practice statements	High	Medium	Low
5. Rate of use of knowledge networks such as (email,	27.8%	18.9%	53.4%
Web, Social media) to communicate with colleagues.			
6. Rate of cooperation and helpfulness by colleagues	36.7%	17.8%	45.6%
when asked for some information or advice.			
7. Considering knowledge sharing strength and	26.7%	18.9%	54.5%
knowledge hoarding as a weakness.			
8. Intra-team communication and sharing of knowledge in	18.9%	17.8%	63.4%
own University.			
9. Informal knowledge sharing practice within the	45.6%	27.8%	26.7%
University.			
10. Frequency of sharing knowledge obtained from	18.9%	27.8%	53.4%
workshop and training to the University staff?			
11. Frequency of sharing knowledge gained from		53.3%	46.7%
guidelines, journals, and book to the University staff?			
12. Frequency of sharing education results, research	8.9%	26.7%	64.5%
findings with own colleagues in the University?			

As observed in Table 2 above, most (about 82%) of the respondents have medium to high motivation to transfer knowledge to their colleagues, of which large number (about 46%) of respondents rated 'high'. This, however, is in marked contrast with the low rating of actual practice of sharing (as the majority rated low the frequeny of sharing, intra-team communication, and hording as a weakness, about 54%, 63% and 55%, respectively). On the other hand, about 73% rated informal knowledge sharing as medium to high. Per the discussion with colleagues, a possible explanation for this may be the lack of appropriate infrastructure and administrative support (lack of events, teamwork opportunities, etc.).

With regard to the rating on knowledge sharing seen as strength and knowledge hoarding as a weakness, it is in human nature to feel insecure in sharing knowledge in professional practice and hence there is the natural tendency in every individual to hoard knowledge. This attitude may change with the provision of motivatinal incentives and rewarding mechanisms.

4.3 Organizational support

The other objective of the study was to assess organizational and technological factors that limit knowledge sharing in Ethiopian institutions of higher learning. The findings from the survey are summarized in Table 3.

Statements related to organization support	Responses		
	Strongly Agree	Agree	Strongly Disagree
13. There is a motivational scheme by my university to encourage staff to share their knowledge within and outside the University.	28.9%		71.1%
14. There is a good working environment to improve your knowledge sharing attitude	56.6%	8.9%	35.6%
15. Salary increment can be the incentive for better knowledge sharing practices	46.7%	8.9%	44.5
16. My university supports career development to encourage knowledge sharing	55.6%	8.9%	35.6%
17. Academic and administrative promotions help improve knowledge sharing practices	46.7%	17.8%	35.6%
18. Acknowledgment of one's contribution may encourage for better knowledge sharing	46.7%	17.8%	35.6%
19. There is lack of technical support and immediate maintenance which obstructs work routines and communication flows.	10%	63.3%	26.7%
20. In my University, there is lack of training regarding employee familiarization of new IT systems and processes.	27.8%	36.7%	35.6%
21. There is a specific budget dedicated to acquire, and share knowledge in the University.		10%	90%
22. There is periodic plan to acquire, organize and share knowledge in the University		27.8%	72.2%
23. The University facilitates knowledge sharing platforms (workshops, seminars, etc) on a regular basis.	8.9%	27.8%	63.3%
24. Managers in my University encourage employees to suggest ideas for new opportunities	20%	35.6%	44.5%
25. Managers in my University consult team members to make decision and solve problem	10%	63.3%	26.7%

Table 3: Organization support

As can be seen from Table 3, most respondents indicated strong disagreement about the availability of institutional support for knowledge sharing: encouragement (about 71%), allocation of specific budget (about 90%), periodic planning (about 72%), and facilitating platform regulalry (about 63%). About 57% indicated that their universitites support career development to encourage knowledge sharing. A narrow majority agreed salary increment (about 56%), promotions and acknowledgements (about 65%) can be incentives and encouragements to improve knowledge sharing practices.

4.4 Infrastructure

With regard to availability and use of technical infrastructure for knowledge sharing, summary of responses is presented in Table 4 below.

Statements related to infrastructure	Strongly Agree	Agree	Strongly Disagree
26. My University has a very up-to-date ICT	28.9%	44.4%	26.7%
intrastructure which helps knowledge sharing.			
27. There are enough locations (Hall) within the office	46.7%	8.9%	45.5%
where staff can socialize and exchange knowledge.			
28. Staffs do have personal home pages through which	8.9%		91.1%
they can communicate their ideas.			

Table 4: Infrastructure

Responses from the survey questionnaire also revealed that the universities do not seem to make efforts to update the ICT infrastructure which helps for knowledge sharing. Findings indicated that only 10% strongly agree of the efforts being made to update the ICT infrastructure. More over, 44.7% of the respondents indicated that there are no enough locations within the universities where staff can socialize and exchange knowledge. In spite of the respondents being IT professionals, only 10% have personal home pages through which they can communicate their ideas.

Apart from the summary provided in Table 4, review of documents and discussions with colleagues also revealed that the various networks deployed at higher learning institutions as well as the full-fledged video conferencing facilities are all high capacity and robust networks designed to support interactive educational programs and research applications. Ever since deployment, most of these facilities are only being used for such simple and ordinary applications as email and Internet browsing. The video conferencing facilities set up in the various higher learning institutions are not put into full usage partly because of the limited band width and partly because of lack of adequate preparation on the part of the institutions.

4.5 Barriers to knowledge sharing

Higher Learning Institutions in Ethiopia have developed fairly advanced (for beginners) intra-institution and inter-institution network infrastructure. However, no content or

information services are run on the network – limited or no digital library access, electronic journals and databases, etc are provided. The network resources are mainly used more for web surfing and e-mail. Similarly, course teaching materials (including standard textbooks, power point presentations of lecture notes and exercises), research reports, theses by graduate students, case studies, etc. are not shared. Among the additional factors noted as barriers to knowledge sharing are: unavailability of knowledge sharing platforms (software tools, knowledge-base resources, experience sharing conversational space, structured team-based collaboration framework), and lack of knowledge sharing policies, strategies and programmes.

4.6 Awareness among the staff

Respondents feel very strongly about the importance of, and are motivated enough to, knowledge sharing in their work environment. Under the existing situation, knowledge sharing among the faculty takes place mostly on an informal face-to-face communication and as such mostly limited to individuals within the same institution or participating in collaborative team/group activities such as projects. Knowledge sharing through online communications, interactive workshops, virtual networks, peer coaching, best-practice review and so on are uncommon.

In view of the constraints and extremely under-resourced environments within which the staff are operating, the increased teaching workloads, most colleagues at Addis Ababa University (that we have talked to) agreed on the significance of knowledge sharing in order to discharge their teaching and research duties and responsibilities effectively.

4.7 Quality Concerns

During discussions with senior faculty, among the areas cited to benefit from knowledge sharing are: reforming traditional approaches to curriculum and pedagogy, strengthening the weak research traditions by networking with more experienced faculty in other institutions overseas and the Ethiopian Diaspora. However, there is a need for a thorough study to devise strategies and mechanisms for knowledge sharing in a manner that revamps teaching and research. One model worth considering in this connection is the consortium and collaborative networking system established at Addis Ababa University to run the IT Doctoral Program which started in February 2008. The consortium was established by bringing together academic units actively involved in the offering of graduate level ICT programs. It aimed to consolidate the scattered individual efforts at each academic unit and facilitate maximum utilization of the individual experts. This helped in strengthening the delivery of courses in the IT PhD Programs and developing quality research activities. As part of the consortium activities, national and international conferences were organized, efforts were made for joint curriculum development and mechanisms were devised for exchange of staff and research candidates. In this connection, Addis Ababa University, is providing institutional support by way of covering all costs related to trips and accommodation for both instructors and students.

The International Network Joining Ethiopia in Research and Application in IT (INJERA-IT) is another initiative that could be cited as a model to tap a worldwide pool of able and willing scholars to consult and involve in the IT Doctoral Program.

5. Conclusion and Recommendations

This study, conducted to examine knowledge sharing among public higher learning institutions in Ethiopia, revealed the current status in knowledge sharing practices especially in relation to personal, technical, organizational factors as well as availability of infrastructure.

Based on the findings and from on own experiences and that of others, the following recommendations are forwarded for consideration.

5.1 General

• The study sampled only nine public universities. Private institutions were not considered at all. Within the nine public institutions, respondents were selected from IT related Departments and Offices. It is believed that increasing the sample size above and beyond the current focus of attention within the public institutions, as well as looking at the practices of private Universities and colleges would give a better picture.

- In devising the strategies and mechanisms, due considerations need to be given to incorporate motivational incentives and reward mechanisms (related to compensations, financial rewards, performance appraisal, sponsorship for conference participation, etc.) for positive contributions in the knowledge sharing activities. Allocation in the regular budget to finance (along the lines being implemented at the IT Doctoral program at AAU) documentation, publication and circulation of own work as well as sponsoring participation in national and international workshops and conferences are strongly recommended. Equally important, in view of the findings from the survey, is to organize and conduct regular staff awareness programmes to ensure that the staff understand the benefits of knowledge sharing to advance their career and improve individual and organizational performance. Introduction of formal and informal activities to cultivate knowledge sharing can also help. It will help to organize annual forums for academic symposium, problem-solving sessions, workshops and conferences for interaction. In general, knowledge sharing should be continuously advocated. Context sensitive strategies and mechanisms need to be devised that overcome barriers.
- With regard to networking, the model at the IT Doctoral program could be revamped to attract and accommodate high-level scholars of extraordinary achievements among the Ethiopian Diaspora, to provide for the human capital needed to implement a successful knowledge sharing programme.
- At institutional level, management should take steps to support and motivate faculty towards the process of creating and distributing knowledge (content development). Ways and means of mobilizing funding need to be arranged, among others, for creating enabling technological facilities for capturing and disseminating knowledge, for organizing and conducting staff and student exchange programmes as well as national and international conferences and workshops which are all invaluable mechanisms in terms of providing opportunities to associate with best talent and creating relationships that stimulates learning and growth through knowledge sharing.

5.2 Establishing communities of practice

According to Pan and Leidner (2003) and Wenger (2000), knowledge expands with the extension of social and community interactions. Knowledge contributors and seekers who

share common interest areas usually come together (online or in person), forming what is generally called "communities of practice", to help each other by sharing tips, ideas and best practices. Since the critical success factor of communities of practice is very much depending on perpetual knowledge generation and sharing, cultivating communities of practice could be an effective mechanism to promote the knowledge sharing culture within institutions of higher learning in Ethiopia.

Sustained knowledge sharing in communities of practice requires continuous effort in setting a knowledge sharing agenda. This in turn requires exploring the knowledge domain, finding/recognizing gaps in the practice, and defining projects to close these gaps. In other words, this is about seeking out challenging areas for knowledge sharing, identifying opportunities to expand and deepen knowledge and relationships that promise to achieve superior results and/or mutual growth.

To this end, attempts should be made to forge networking and partnerships with collaborators and capable others in other institutions. The knowledge sharing networks may be created in some sort of formal and structured team-based collaboration within an institution or consortium of institutions to better perform the academic activities.

5.3 Establishing enabling IT platform

IT plays an important mediating factor in knowledge sharing. The communities of practice usually produce shared repertoires of communal resource – such as documents, published research articles, case studies, technical reports, theses and related research reports, course materials, artifacts, tools, stories, websites, etc. Such repertoires which are extremely useful components for knowledge sharing in higher learning institutions need to be maintained and members of the community must have access to them. Providing computerized information system to store and retrieve such knowledge resources is critical. Electronic platforms running on the network infrastructure that provide easy to use tools for representation, storage and retrieval of such knowledge are as important.

The design process of electronic platforms should consider the application and use of such Internet technologies and services as email, listservs, chat, bulletin boards, discussion forums, web sites, and features and capabilites of related emerging access technologies of social networking tools such as: wikis, blogs, twitters/yammers, flickr, delicious and slideshare.

5.4 Coordination of efforts

Given the limited resources at the country's disposal and to avoid "reinventing the wheel", a national coordinating body needs to be established to organize various forums for sharing of knowledge. Such endeavor naturally demands for a concerted effort and commitment from all higher learning institutions directly or indirectly involved in the development of the education sector. Among the works of the coordinating body will be promotion of staff exchange, training, dissemination of research outputs, needs assessment, review of experiences of other countries, etc. Further more, appropriate policies and plans might be devised by the national body for effective implementation of ICT for knowledge sharing.

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