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The information management practices of Bahirdar University

GEDIFEW MatebTafere

Bahir Dar University, Ethiopia.

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Recognizing the importance of information management systems, Bahirdar University introduced its student information management system in 2009. However, studies had not been conducted on the functioning of this system. This study, therefore, examined the information management practices of the University. The academic leaders, core process owners, and the system administrators were the research participants selected purposely, for they are main actors in initiating and managing the information system of the university. The information collected using semi-structured interviews and focus group discussion was analyzed using thematic analysis. Accordingly, it was revealed that apart from achievements made, lack of required resources, the centralized nature of the system, poor culture of the academic staff in meeting deadlines stipulated in the system, and lack of adequate computer skills on the part of the users were the major challenges encountered in the implementation of the existing student information management system, which has not yet been implemented in managing the information of distance, summer, extension, and graduate program students. Worst of all, this practice was not extended to the library and other administrative core processes. Hence, the University should revisit the functioning of its student information management system, and also take initiatives in automating the information management systems of the other administrative core processes.

Key words: Information, management, system, university.

INTRODUCTION

Today, which we call information age as many technological developments have been experienced; the biggest task that an organization should shoulder is to stay sensitive to change. Many significant factors such as continuous developments in information technologies, information exchange, increasing expectations of the society, modern managing perceptions and applications cause organizations all over the world to develop new information management systems in order to survive (Demir, 2003). Accordingly, contributions of information technologies to educational institutions have recently been among the most emphasized affairs (Webber, 2003; Flanagan and Jacopsen, 2003; Selwood, 2000; Pelgrum, 2001; Yuen et al., 2003).

Information systems support not only information process but also innovations to educational institutions (Haag et al., 1998). As being adaptable to changes, these systems are helpful to cope with the demands for change. Therefore, the management of information systems improve the adaptation of the educational institutions to the environment; they enable the institutions to comprehend and define inner and outer

E-mail: matebetafere@yahoo.com. Tel: +251-911-862252.

information transfer; and thereby, institutional leaders meet both the demands and expectations of its inner (teacher, student) and outer members; and ensures that institutional activities are arranged accurately and timely (Pegler, 1992).

The reasons for using information systems can also be stated as increasing effectiveness at work by processing information, increasing leadership effectiveness by meeting the need for information and gaining superiority in competitions by directing strategies (Yuen et al., 2003). Information management systems in this case aim to provide support for the administrative and educational activities of the educational leaders by processing information.

Telem (1999) defines educational institutions management information systems as a management information system designed to match the structure, management task, instructional processes and special needs of the educational institutions. As for a broad definition, contributions of the information systems to educational institutions can be defined as making programs more effective, making the teaching process and the changes in learning environment professional, enabling teachers to exchange their experiences in a more systematic way, working in teams, determining the needs of the students (Gurr, 2000; Pegler, 1992), supporting the educational leaders and other staff in doing their duties, developing their performances, effectiveness and efficiencies (Telem and Buvitski, 1995). In other words, information management systems increase institutions' effectiveness and efficiency by saving time and facilitating development of alternative solutions for sophisticated problems (Vissher and Wild, 1997; Pegler, 1992).

Educational leaders can make more efficient decisions when they get correct and up-to-date information by institutional information management systems (Christopher, 2003). Decision-making is the heart of educational management. Daily, problematic conditions that require decision-making are based on the complicated and unexpected nature of educational institutions environment. For this reason, as a problem solver, the educational leader has to gather and analyze information continuously (Perez and Uline, 2003). In addition, leaders have been required to make more decisions in short times because of the increasing expectations from the educational system (Christopher, 2003). Moreover, decision-making has been faster, more frequent and more complicated in educational institutions of today. In order to make decisions under these conditions, gathering data that is continuous, up-to-date and that can be accessed on time and analyzing and using this data is an obligation (Telem, 1991; Gentry, 2005). Success of educational institutions development studies are mostly based on data based decision-making. However, many educational leaders are not able to use the data efficiently in this aspect (Gentry, 2005).

Information management systems provide information and various reports from the database in order to make decisions in line with the aims of the institution and enhance controlling mechanisms of the activities to achieve the aims (Telem and Buvitski, 1995; Telem, 1991; Christopher, 2003). Information technology helps the leader to access, manage and report the information quickly and easily (Perez and Uline, 2003). In this regard, scholars found that information management systems have changed the roles of educational leaders (Pegler, 1992) and have also changed their methods of working (Christopher, 2003). One of these is to develop a database that includes information on student registration and family, discontinuity, grades, staff and classes, and course information. These are just a step of educational institutions information systems. Other parts of information systems are management of library, finance, fixtures, human resources, schedule planning, standard reports sent to higher levels of administration, etc. These are simple data processing activities that increase efficiency of educational institutions' leadership practices (Pegler, 1992). Moreover, use and analysis of information at educational institutions will not only make leaders realize what should be done in order to develop student performances, but also will ensure success in accomplishing these changes. When leaders use data, they will start to realize innovation efforts on this issue (Christopher, 2003). As a result, it can be stated that by means of information systems, educational leaders will be able to determine required information, access the information, interpret the data, and use the data in making decision and evaluation and in developing efficient use of the system.

When Gurr (2000) examined effects of information management systems on the performance of educational leaders in Australia, leaders stated that use of information management systems introduced information technologies and the facilities, lessened their workload and made leadership process more efficient, helped them use time more efficiently, made teachers feel themselves more important, made the leaders themselves and the teachers wish to improve, made important changes in education, and increased the quality of institutional communication. In their study with higher educational institution managers, Telem and Buvitski (1995) found that institutional leaders believed that institutional management information systems lead to important changes at institutions. According to educational institutions' leaders, this application has increased institutional standards, helped decisions on the level of control and strategy, increased the quality of teaching programs, facilitated student-teacher interaction, increased the coordination between teachers, facilitated systematic and continuous information transfer to parents, and increased communication with other institutions and the central organization. In his study where Gurr (2000) examined effects of information systems on school leaders of local

schools, he determined that information systems have largely changed roles of educational leaders; and leaders stated that a leader who does not use the information systems is not able to achieve his duties sufficiently anymore.

However, in literature, there are researches that show that educational leaders had problems in using information management systems for their respective institutions. For example, Visscher and Bloemen (1999) in their study with leaders and teachers working in higher educational institutions in Holland found out that educational management information systems were mostly used in routine works, and leaders and teachers did not have sufficient education on the system. Leaders and teachers indicated that while educational management information systems had positive effects on evaluation of efficiency of the institutions, development of using sources, quality of educational programming and communication, it increased their workload and caused stress. The research indicated that this stress is reduced in institutions where education is sufficiently given on the system and where innovation is clearly stated as a vision. In addition, it was found out that the staff that used the system had higher motivation, was keen to take more education, and adopted the vision of the institution. In the research where Warren (1998) examined the effects of information systems on educational decision-making, he found out that educational leaders have not taken sufficient education on efficient use of the information technologies. Crouse (1994), in this regard, found that education increased the possibility to use the information systems. Also Jacops (1992) claimed that there was a correlation between the amount of education the leaders took, and the use of information systems.

According to Sprague (2003), Information systems are made out of components that can be assembled in many different configurations, resulting in a variety of information systems and applications. For example, the size and cost of a home depend on the purpose of the building, the availability of money, and constraints such as ecological and environmental legal requirements. That is, just as there are many different types of houses, so there are many different types of information systems. It is, therefore, useful to classify information systems into groups that share similar characteristics. Such a classification may help in identifying systems, analyzing them, planning new systems, planning integration of systems, and making decisions such as the possible outsourcing of systems. This classification can be done in several alternative ways. As Sprague stated, information systems are classified by organizational levels, mode of data processing, system objectives, and by the type of support provided.

In the case of classification by organizational levels, the focus is to design an information system which can fit to the different hierarchical levels. That is, organizations are made up of components such as divisions, departments, and work units, organized in hierarchical levels. For example, most organizations have functional departments, such as production and accounting, which report to plant management, which report to a division head. The divisions report to the corporate headquarters. Although some organizations have restructured themselves in innovative ways, such as those based on cross-functional teams, most organizations still have a traditional hierarchical structure. Thus, we can find information systems built for headquarters, for divisions, for the functional departments, for operating units, and even for individual employees. Such systems can stand alone, but usually they are interconnected.

Another mode of classification is by mode of data processing, which may include batch processing systems, on-line batch systems, and on-line real-time systems. In the case of batch processing systems, the transactions are collected as they occur, but processed periodically, say, once a day or week. With regard to on-line batch systems, the transaction information is captured by on-line data-entry devices and logged on the system, but it is processed periodically as in batch processing systems. In on-line real-time systems, the transaction data capture as well as their processing in order to update records (and generate reports) is carried out in real-time as the transaction is taking place.

The third classification modality is by system objectives, which also includes transaction processing systems, process control systems, decision support systems, expert systems, executive information systems, and business information systems. The objective of the transaction processing systems is to process transactions in order to update records and generate reports, that is, to perform score-keeping functions. The process control systems are designed to make routine decision that control operational processes. The objective of decision support systems on their part is to support the managerial decisions. Usually, these systems are based on a model of the decision-making domain, and utilize techniques from management science, finance or other functional areas of business in order to build such models. These systems are also used often for attention-directing purposes, that is, for directing the attention of managers to a problematic aspect of operations. Expert Systems on the other hand incorporate expertise in order to aid managers in diagnosing problems or in problem solving. The executive information system also is tailored to the strategic information needs of the top managers. Finally, in the case of business information systems, it is very important to realize that information systems directly support both operations and management activities in business functions of accounting, finance, human resource management, marketing, and operations management. Such business information systems are needed by all business functions.

Another way to classify information systems is according to the type of support they provide, regardless

of the functional area. For example, an information system can support office workers in almost any functional area. Likewise, managers working from various geographical locations can be supported by a computerized decision-making system.

Generally, institutions can use any of the above information system types. Their preference could depend on a multitude of factors as partially indicated above. It is also important to note here that it is not a must and may not even be practical to use a single type of information system to address institution's demands; and it may not even be easy to clearly indicate the boundaries across the classifications of information systems. That is, the specific context of the institutions' seem to determine the type of information system to be employed, and a single type of information system in this case seems also unlikely to address the specific institutional information management demands. The worry therefore, does not seem to be the type of information system employed, rather it is to examine whether an information system adapted or adopted by an institution is addressing its intended purposes. Hence, institutions often use an integrated or hybrid information management system, which shares some features from two or more of the classification types.

The purpose of this study, therefore, was to examine the practices of the information management systems at BahirDar University, which is one of the oldest and reputable Universities in Ethiopia. The university is situated at the northwestern part of the country, Bahirdar, the capital city of the Amahara National Regionl State. The university has been organized in to six big campuses, where a total of above 39,000 students have been admitted in the regular, extension, summer, and distance programs. The university has about 70 undergraduate programs, 50 MA/MSc programs, and 5 PhD programs. In an effort to address the human power needs of the country, the university has been expanding programs in the areas of education, medicine and health sciences, agriculture, engineering, law, social sciences and humanities, land administration, sport sciences, natural and computational sciences, and business and economics.

Recognizing the need for establishing a system for managing the information of such huge number of students (above 39,000), BahirDar University was the first to start the implementation of student information management system among the thirty-one public universities in Ethiopia. There was no any other university, which even worked towards adapting the system until September 2013 except interests demonstrated for experience sharing with system designers. Though due focus or credit was not given by the Ethiopian Ministry of Education to the introduction of the student information management system by Bahirdar University, the university went on applying the system for managing the information of undergraduate students in the regular program. The study was, therefore, made to focus on Bahir Dar University for the fact that it is the university where student information management system has been practiced since 2009. That is, though no studies were conducted and even no performance reports were organized on the performances of the system, it had already been in place for about four years. Thus, the study was specifically aimed at describing the current practices and challenges of the information management system through exploring the perspectives of academic leaders, system administrators, and administrative core processes owners in the main campus.

METHODOLOGY

The study employed a qualitative design, which in fact helped for the in depth description of the application of the system to the academic and administrative units in the university, specifically in the main campus.

The participants were selected from five academic units (colleges/ faculties/academies) at the main campus of Bahir Dar University: College of Science, Faculty of Humanities, Faculty of Social Sciences, Faculty of Education and Behavioral Sciences, and Sport Academy. The participants of the study selected from the above academic units were Deans, Program Managers, and Graduate Program Coordinators. Besides, another group of participants from the administrative wing was included in the study. These participants were the plan, budget, and finance core process owner; the human resource cores process owner; the purchasing and property administration core process owner; the library director; and the system administrators. The selection of these research participants was purposive for the fact that they are the main actors or closest stakeholders in initiating the need for sound information management system, and also the main agents for the efficient and effective management of the already introduced information management system. Though there was no human subject's review board in the university, the study was approved and funded by the office of the University's Vice president for research and community services. Before the beginning of data collection, the informed consent of each of the participants was secured through explanation of the research objectives and by ensuring that the information collected will be kept confidential and is to be used only for research purpose.

In collecting the desired data for the study, focus group discussion and interview were used and it was found to be interesting as it was possible to understand from the participants' reflections during the discussion. The focus group discussion helped the researcher to study the real practices and challenges in utilizing information management system. The interview, on its part, also helped the researcher to collect detailed information from those participants who had active roles in the implementation of the information management system.

Finally, the collected data was analyzed using thematic analysis. This type of analysis is highly inductive in that the themes emerge from the data and are not imposed upon it by the researcher. In most cases, the data collection and analysis seemed to take place simultaneously. Even the background reading formed part of the analysis process for it helped the researcher to explain the emerging themes.

Coding technique was also used to analyze the responses to interview items. In analyzing these data, responses to the interview items were grouped by themes, following the guidelines presented by Cresswell and Maietta (2002). In the initial coding, the first step of the coding process, the responses to the interview items were compiled and read in order to determine any dominant themes or patterns in the responses. These responses were used as initial

codes for the data. The second phase of the coding process involved arranging the responses into categories that emerged from additional reviews of the data after grouping them for the first time (that is, categorized according to their affinities into general thematic categories). This yielded a final list of codes for the data. Finally, the coded data were grouped by the emerging themes on the basis of which the thematic content analysis was made. In order to assure trustworthiness of the coding process, an assistant professor of teaching English as a foreign language took part. The inter-coder reliability was found to be 0.79 in the pilot test, and the inter-coder reliability of the main study was found to be 0.86. Finally, the contents of similar codes were summarized, analyzed and interpreted as can be seen subsequently.

RESULTS AND DISCUSSION

The results and discussions are organized into such categories or themes as the student information management experiences, and the library and other administrative units' information management practices of the university. Hence, presentation of results and corresponding discussions are made as follows.

The student information management practices

The student information management system has been introduced at Bahir Dar University since 2009. The system was introduced with the assumption that any information related to students is managed effectively and efficiently (System Administer "A"). The perspective of this respondent, in fact, was congruent with the very purpose of introducing information management systems as was possible to understand from guideline produced by the university while establishing the system. This system's efficiency and effectiveness has also been witnessed informally by most of the customers though no formal report or study was organized in this regard.

The system records and avails all the information related to students' biography including family background and address, students full academic records, records related to students academic status, and students dormitory placements(System Administer" B"). This participant went on stating "the students' registration and graduation have also been processed through the system". More importantly, "the system gives different roles to the students, course instructors, program managers, deans, the academic affairs executive director, the academic affairs vice president, and to the president as per their respective responsibilities" (System Administrator "B"). Hence, these different organs, as per their corresponding roles, have access to information related to the students placed in the system. "However, the type and amount of information, and the authority granted in the system for the different organs do significantly differ. For example, while the academic executive director has a role to approve the graduation of students, the dean does not have such a provision" (System Administrator "A"). The perspectives' of these two respondents were quite reflective of the current practices in the University for the fact that the researcher even knows as a practitioner and as an academic officer in the university. This situation was also reflected by the Deans that they need to be given the provision to approve the graduation of their prospective graduates. The other missing elements in this case were the course chairs and the program representatives. According to the perspectives of "program manager A", these two positions have not been given roles despite the fact that they have important stakes in managing and leading the teaching- learning process and there by monitoring students' progress. Similarly, "program manager B" noted that program representatives (sometimes called as department heads or chair of chairs) and course chairs are the closest stake holders in monitoring students' progress and achievements. Another program manager specifically noted the following reflections:

The university has frequently been communicating that decentralization is getting practiced in the sense that decision making has been devolved to the lower levels. The university has also proudly been talking that the lower level managers are highly empowered in making decisions. However, the department heads (program representatives), the lower level managers in our case, have not been given the provision either to approve or comment on the students grades. Instead, the program manager, though a bit far from daily monitoring of students, is approving the students' grades. (Program Manager "C").

These reflections of the program managers are quite logical and real in reflecting the practices of the university, and hence, the situation seems to require amendments on the system so that the two important organs will have the corresponding roles and authorities in processing and monitoring the students' information via the system. Besides, the granting of this role to these two organs (program representatives, and course chairs) would augment their responsiveness and moral, and thereby, commitment because the more authority and responsibility you give to people the more they become committed and responsive (Gurr, 2000; Komives et al., 1998).

According to the data gathered from the system administrator "A":

Students are given passwords, in the system, to help them see all the information related to their academic status. In this way, the system offers opportunities for parents to see the results of their children at a distance using the password given to students. What is unfortunate in this case is the situation of Ethiopian parents in that most of the rural parents do not have the knowledge and skills for manipulating computers, and even when they have the knowledge and skills, most of them do not have the net work access to visit the system.

However, despite all these limitations, the system is found to be very important in processing students' information very efficiently and effectively.

According to the information collected from the system administrators and deans of the respective academic units, the system currently is offering services for: course and curriculum management; student admission, registration, and achievement; online grade submission and approval; academic program management; graduation and certification; student dormitory placement and management system; and cost sharing management system. Besides, the system administrators noted that the system is almost ready to offer services in the near future for: student cafeteria management; digital signage (dynamic information display system); evaluation of programs and teachers' performance system. System administrator "B" particularly expressed that "the university shall not be reluctant in starting these three recently finalized systems because they are supposed to contribute significantly in promoting the efficiency and effectiveness of operations". The perspectives of the system administrators had in fact been reported in different meetings of the university, and even in informal discussions of the higher officials and system administrators. The researcher as one of the university management bodies was also familiar with such concerns of the system administrators though no measures were taken accordingly.

An attempt was also made to ask the system administrators about the benefits gained from the system that had already been introduced and implemented. Accordingly, they reflected that the system has increased efficiency in terms of time, money and energy, which corresponds with Pegler' (1992) and Perez and Uline (2003) reflection that a well managed information system increases the efficiency and effectiveness of operations. The participants also noted that the system has significantly increased transparency because the system is protected from any form of personal fraud or abuse, which also corresponds with the reflection of Gurr (2000) that information management systems when managed carefully promote organizational transparency and communication . According to system administrators' reflections, the system has contributed a lot in increasing customer satisfaction. The deans, program managers, and graduate program coordinators also added that the system has increased the satisfaction of academic leaders, teachers, students and parents in terms of efficient and effective service delivery. Most importantly, as already indicated before, students results are displayed and can easily be seen by academic leaders and parents. This situation, therefore, has created healthy academic competition among them. The competition, according to the perspectives of the system administrators, also seems to include the teachers, academic leaders, and academic units. That is, as the system is quite transparent, every activity related to student admission, registration, grade submission, and certification are visible to the University officials, and hence, this situation has created again healthy competition among those organs in terms of time efficiency so that the students records are secured on time. It seems wise to note here that the perspectives of the system administrators regarding the benefits gained from the student information management system had also been confirmed by students and university staff via formal and informal discussions held at different times. More importantly, the students' parents had also been reflecting that the student information management system in promoting responsiveness and transparency while accessing and monitoring students' results or current status.

Though the system is offering such paramount benefits, the university, as deans, program managers and graduate program coordinators pointed out, has not utilized the system for summer, extension, distance, and graduate students. According to their perspectives, the system is serving only the regular students in the undergraduate programs. Perhaps, the researcher as one of the management bodies clearly knows that the student information management system in place had been implemented for students admitted in the regular programs. The very reason for including the reflections of those academic leaders in this regard, therefore, was just to reveal that these groups of leaders were suggesting that the system should reach students admitted in the other modalities. Though the concrete reason for extending the existing student information management system to the distance, extension, and summer students had not been explored so far, this situation in any case seems to indicate that there is reluctance on the side of the academic units as well as the university officials. As the system administrators noted, there is no any factor which inhibits the academic units or the university in general not to use the existing student information management system to the summer, extension, distance, and graduate program students. The academic leaders of the respective academic units on their part also expressed that they are registering the names, and curriculums of the students in those programs in to the system. However, they are not sure when they have to start using the system in managing the information of the students enrolled in those programs. That is why the researcher reflected earlier that there seem to have reluctance on this regard. May be this resembles with the findings of Visscher and Bloemen (1999) and Warren(1998) that leaders fail in promoting the utilization of information management systems when they do not have sufficient education on efficient use of the information technologies or when they have not taken sufficient education on the system. In any case, the designed system is quite important in facilitating the student information management in the university, and

hence, the university in general, and the respective academic units in particular need to have the necessary ownership and commitment in fully utilizing the system for students enrolled in the different modalities and levels. The university shall also play the leading role in promoting the benefits of the system so that other higher institutions of learning in the country can easily adapt the system, and thereby, a well organized student management information system can be established in the country. In this regard, there is a wide spread notion that the more well organized information management system the institutions have, the more they become effective and efficient in their operations, and thereby, the more they increase their productivity (Robins, 2005).

Further attempts were also made to point out the problems encountered in the implementation of the system from the perspectives of the system administrators, and the academic leaders of the respective academic units. Accordingly, the system administrators reflected that they are getting disappointed with many factors related to promotion and institutional arrangements. Regarding promotion, system administrator "A" notes:

The university has to promote the system to other universities so that we may benefit from selling our expertise. What should be understood in this case is that the University did not pay for our professional expertise while designing the system. Perhaps, the university tried to recognize our commitment and efforts through awarding an academic rank of assistant professorship. Though this effort of the university is so encouraging, it shall go a step further in promoting the system to other universities so that we could benefit from selling our expertise. This could have been done through officially inaugurating the launching of the system so that the other universities may start giving value to the system though a significant number of them are still coming for experience sharing.

The system administrators' reflections in this case seem quite logical in that they restlessly worked for lengthy periods while designing the system. They even, as they themselves expressed, were refrained from having any part time works while designing the system which perhaps is a real challenge in our context. That is, University instructors, in our case, usually prefer to have some part time works to seek ways for addressing economic needs, which otherwise is actually difficult for the inadequate salary scales of the country in general. So, those system administrators seemed to have sacrificed themselves while working on the system, and hence, the university shall reciprocate or give due focus to their corresponding merits at least by promoting the system.

The other challenge with the system administrators was with regard to the institutional arrangements. As system administrators expressed, they started implementing the system by the year 2009. As the system is a new one to the university, the expertise were required to work day out and day in for clarifying any confusions and challenges to the system users. The users are teachers, program managers, deans/directors, and customer relation officers. All these users, as the system administrators noted, need immediate guidance regarding the implementation of the system, which in fact required the system administrators to avail themselves on line day in and day out. What seems unfortunate here is that the system administrators are still working with a similar tension though attempts had been made by the university in assigning additional ICT experts to support the system administrators. In this regard, the system administrators are still complaining that there need to be an institutional arrangement and the necessary ICT personnel who can fully own and operate the system at the level of the respective academic units. Hence, there does seem a need for the university to pay attention to the issue, to revisit the institutional arrangements, and thereby, to give the desired responses to the claims of those committed system administrators who have been devoting their precious time and energy for facilitating the student information management systems of the university. In light of this, it seems sound to express that for the information management of an institution to be productive, there is a need for having a well organized, and transparent institutional arrangement equipped with the necessary resources including human and fixtures, and perhaps, there is also a need for having a well established monitoring and evaluation system (Christopher, 2003; Harling, 1989).

Generally, the deans and program managers on their part also noted that the following persisting problems were prevalently affecting the smooth functioning of the existing student information management system: The centralized nature of the system; the lengthy bureaucracies required for solving technical problems; the lack of computer skills on the part of the academic staff and customer relation officers; the limited roles offered for the deans and program managers of the respective academic units in the management of the system; lack of responsiveness of the system in responding to the needs of students with special cases or problems; and the poor culture of the academic staff in respecting the deadlines stipulated in the system. In some cases, the reluctance of the system administrators in responding to the concerns of the respective academic units was reflected as one of the recently encountering problems as reflected by the Deans. The deans in fact did not blame the system administrators for their reluctance, and they rather reflected as the university should have owned the system. Furthermore, the network interruptions were also among the pressing problems causing the teachers to spend a two to three days time for submitting grades online. It is important to note here

that these reflections of the academic leaders had also been communicated to the university through different informal discussions held at different times though no formal reports had been organized in this regard. The university also realizes most of those challenges reflected though no sustainable measures have been taken so far except some quick fixes on the system. Hence, paying attention to these and similar other problems would enable the university to have a sustainable student information management system.

The information management practices in the library and other administrative units

The information management system, as was already indicated in the introduction section, is assumed to be practiced in the library, and other administrative units like the human resource core process; the plan, budget and finance core process; and the purchasing and property administration core process. The performances of these core processes are key to the university's success provided that there is coherent and organized institutional arrangements for the networked and smooth information flow. Thus, similar to that of the student information management system, there can and should be a well organized information system for managing the operations of the library and the other administrative units of the university.

The library for example, should be networked so that everybody else where could be able to identify books of his/her interest and get the access to read. If that is the case, students and others interested for reading can save time in searching for books, and the books can safely be monitored and controlled (Christopher, 2003). Unfortunately, as respondent "D" states, the university library does not have such a system, and things are traditionally operating in a rule of thumb. As per the responses of the academic leaders (deans program managers, and graduate program coordinators), the students have been highly complaining with the inadequacy of the library services that most of the library workers are ill prepared for providing the desired services, because of this fact that the catalogue system is quite disorganized where they do not easily trace books of their preference. The library director reflected that there is a plan to automate the library system, and he added in this regard that they system is in the process of pilot test, but he was not sure when to start the system. This situation, therefore, seem to require the university to make urgent interventions in a way that can maximize effective and efficient service provision, and thereby, ensure strong customer satisfaction. It was reflected by one of the system administrators that the library information management has already been designed, and he was not sure as to why they system was not in place. Universities of the 21st century are highly required to be responsive to the calls of efficiency and effectiveness in their service delivery (Adams, 1986; Bennis and Townsend, 1995). It seems, therefore, sound to reflect here that the university, as one of the biggest in the country and as it is the one striving to be one of the premier African Research Universities by 2025, should be able to implement a well organized and responsive library information management system so that the service provisions would be by far efficient and effective, and thereby, students productivity and achievements would be promoted. That is, this is one of the strategies as to how a vision for becoming a premier research university could be realized.

The administrative units including the human resource; the plan, budget and finance; and the purchasing, and property administration process owners are also expected to be networked through a strong information management system. The university officials and others concerned need to be able to access information about the plan and implementation reports of these units. The system should be able to offer any information about the resources available in each unit, the daily challenges and achievements, the performance status; and about the issues requiring urgent intervention (Christopher, 2003). However, as per the information collected from the process owners of the three administrative units, there is no such a system in the university. The reporting system is very traditional using hard copies. The university officials' decisions are highly dependent on the reports of the core process owners. The officials decisions in this case are likely to be in accurate because the source of information is the individuals, not the system.

In such situations, therefore, performances are not likely to be clearly measured because recording and reporting are also dependent on the core process owners' personalities. Institutions of the 21st century, as was already noted earlier, do not accommodate such traditional practices (Adams, 1986) for the fact that they are operating in a globalised environment where there are turbulent changes elsewhere. The author also went on stating that these changes are so demanding that the institutions should be so effective and efficient in order to cope up with the changes. The university, hence, seems quite lagging behind the change because it is still operating using rule of thumb.

Had the information management system been started with plan, budget and finance core process; there would have been clear and transparent information flow for every transaction. For example, the president may know the monthly, quarterly and annual plans and the corresponding performances reports through the system without having direct contact with the core process owner (Christopher, 2003). The president, as to Christopher, may also know the budget implementation status so that he/she can take timely measures accordingly; the financial flow can also be actively monitored if such a system is in place. In some cases, it may not be unusual

to see differences with the financial practices of the different finance offices in the university. The core process owner in this regard reflected that there is software sent from the Ministry of Finance at national level. As per his reflections, this software can serve as a good information management tool provided that all the finance units of the university are integrated in to the University's server. Perhaps, this may require a smaller intervention of the university's ICT office in integrating the finance units in to one server so that information can easily be accessible to everybody concerned, and thereby, monitoring and follow up would be easy accordingly.

The same may happen to the human resource core process in that the system can avail all the necessary information of the human resource in terms of age, experience, qualification, and current engagement. For example, the university gives further education opportunities for a large number of staff each year, and they are supposed to complete their education within a specified period of time so that the university can benefit in return. As per the perspectives of the deans and program managers, however, many of them disappear, and others extend their education for seemingly unlimited periods for there is no a well organized monitoring and follow up system. In some cases, the human resource core process, as the deans and graduate program coordinators noted, does not have the information as to when some staff members started their further education, and consequently, the core process tries to count the number of years required for such trainees as per their contractual agreement. Another challenge associated with this core process was the lack of accuracy in human resource planning in that there need to be an accurate process for determining the number and kind of human resource required at a right time and place. As per the perspectives of the academic leaders, it is common to see a large number of human resources loaded at a certain unit or department; and on the other hand, it was not also uncommon to see high scarcity of human resources in the other units or departments. Apart from the in accuracy in terms of quantity, there also seem to exist a common practice in our case as the academic leaders reflected that the assignment of the right person at a right place is quite futile in that staff grievances were common here and there about placement and related issues. Moreover, there was also high inconsistency on the appointment and transfer of the human resources, and this could possibly be attributed to the lack of a well organized and integrated information management system. Had there been such a system, the president could have easily seen such appointment and transfer cases so that the inconsistencies could not have been continued so far. Surprisingly, it took us about three weeks to get the list of academic staffs working in the university in responding to the requests of the Ministry of Education. The Ministry of Education had been frequently calling on the Academic Affairs Vice President Office, but the human resource core process failed to process the data, which was a clear indication of having a disorganized information system. In this regard, the human resource core process owner reflected that an information management system had been designed to manage the information of the core process. As per his reflections, the necessary data of the human resource had been entered into the newly designed human resource information management system, but he was not also sure when to start utilizing the system. To be more practical, it will be more unlikely that the human resource core process owner himself could offer a reliable human resource data to the university officials if the need arises. The researcher had practical experiences in this regard that the human resource core process was unable to provide reliable human resource data in response to the requests offered at different times. This case was even discussed and commented by the university's president in the universities general (monthly) meeting, and in the biweekly (Friday) top management's meeting. It would also be very wise to remind one practical case in this regard that the president faced a practical challenge in getting the staff profile of the university while he was compiling the six month report of the university for the 2013/2014 academic year. The presidents' intention was to know the teacher-student ratio, and the staff composition of the university in terms of academic rank. In any case, the data obtained from the core process was not reliable, and hence, the president was forced to collect the required statistical information using other means, which, perhaps, was a clear indication of the absence of an organized information management system in the core process.

Worst of all, the purchasing and property administration core process was facing serious challenges for lack of an organized information management system. In this case, it was very common to see many computers, printers, photocopy machines, and other equipments stopped working and loaded in many offices in a disorganized manner. On the other hand, as the academic leaders reflected, it was also common to see the university continuously buying new computers, printers, photocopy machines and other equipments without trying to maintain the existing, and even without trying to undertake accurate property auditing. In some cases, for example, you may see staff members taking two laptop computers while the others do not have even one. In general, the university had been operating in a very traditional way despite the fact that there was a sound opportunity to design and implement a well organized information management system for monitoring the utilization of material resources. The core process owner reflected in this regard as she did not know any plan to automate the information management of the core process despite those pressing challenges. Her lack of information whether there is an attempt to automate the

information management of the system, in this case, may be because of the fact that she has assumed the position very recently. The researcher opted to reflect this for there was an information from the system administrators that some groups have been designing an information management system for the core process. Whatever the case may be, however, the university has not formally communicated to the respective core process that there is such an attempt to automate the system. That is, had the university been communicating the case, the current core process owner would not have said that she did not know any attempts in this regard. Because of such loosened practices, the university sometimes fails to know even how many vehicles are giving proper services; how many of them stopped working; how many vehicles have been rented, by whom, for how long etc... This situation may even result in fraud or corruption. So, the university shall take the necessary initiatives in integrating the information management system of this core process.

What seems confusing, in this case was, the failure of the university in automating the information management system in a situation where there were experts who could easily adapt the system. According to the interviews conducted with the system administrators, they were very much willing to design and strengthen the information management system of the university, just like what they did for the student information management system of the university. So, it clearly seemed to indicate a reluctance or lack of commitment on the part of the university to strengthen its information management system, or maybe there was a lack of the necessary orientation on the merits of an integrated information management system, which perhaps, may require further enquiry.

CONCLUSION AND REFLECTIONS

For the fact that globalization is requiring countries in general and institutions in particular to cope up with the turbulent changes in the world environment, and for the fact that coping up with this change requires operating with high efficiency and effectiveness, using a well organized and sustainable information management system seems quiet mandatory for institutions of higher learning. Higher institutions of learning in the 21st century are highly required to operate on competitive basis in response to addressing the expectations of the beneficiaries or students who are also required to be competent for the competitive world of work.

In this regard, the findings indicated that encouraging attempts were made by the university to automate the student information management system. The student information management system adapted by BahirDar University is an integrated or interconnected type, which was designed in a way to reflect the specific context of the University. As per the classifications discussed in the introduction, the student information management systems of the University seemed to partly fall under the classification based on the support it provides. To be more specific, people in the different hierarchy (from students to the president) were made to have their own corresponding roles and respective accesses while utilizing the system. Besides, the student information management system of the university also seemed to share some features with the transaction processing systems, which involves processing transactions in order to update records and generate reports, that is, to perform score-keeping functions.

It was evident from the perspectives of the academic leaders and system administrators that the student information management system of the university had been quite functional and had also been facilitating tasks related to student admission, registration, academic record, status determination, graduation and certification, and dormitory placements. However, the existing student information management system had not been implemented in managing the information of distance, summer, extension, and graduate program students. The institutional arrangements also had not been organized in a way to fully function with the necessary human resources and other desired or required inputs. In this regard, the system administrators were strongly complaining that the university should receive and fully own the system so that they could get free time to design other new systems. For example, the University could easily assign ICT experts for the respective academic units so that the student management information system could be owned by the academic units. Another solution could also be offering the necessary system management roles to the deans and program mangers so that the lengthy bureaucracies and centralizations observed for managing technical problems could shortly be managed at the level of the academic units. By and large, it seems sound to reflect here that the university shall revisit its operations with the existing student information management system so that those identified gaps or challenges can easily be improved to promote the system's responsiveness to the needs of the respective academic units

Despite the fact that the student information management system in place has increased the efficiency and effectiveness of operations as was reflected by the academic leaders and system designers, the university did not demonstrate strong attempts to expand the system to the other core processes like the plan, budget, and finance core process; the purchasing and property administration core process; the human resource core process; and to the library core process. As was possible to understand from the perspectives of the core process owners, the practice in these core processes are operating in a very traditional style, using paper documentations, which was not and would not be

suitable to access information at the right time and place.

The core processes are operating and reporting as per traditional trust in a sense that it seemed the core process owner who was likely to determine the success or failure of the core process as long as he/she was the one to plan, evaluate and report. That is, as per the perspectives of the core process owners, the higher officials had limited chance to monitor, and support the operations, and they were rather limited to the reports from the respective core process owners, which was in fact evident in almost all the evaluation forums of the university. This situation, however, would take the university nowhere. Higher officials need to have fresh and live information about the daily operations of the respective core processes using a well organized or integrated information management system. Otherwise, they will be forced to lead from a distance (heavily dependent on the reports of the respective core process owners), and leading from a far distance is just like shooting a gun in a dark. For example, what we had been doing while evaluating the performances of the respective work units was just asking the respective unit heads to report. The head of the unit who reported nicely using caching words or phrases, in this case, had likely been rewarded and encouraged. However, in most cases, the oral reports seemed to appear fictitious as they had been done just for the sake of reporting. These core processes, therefore, need to have an information system, which may fall under the classification of business information systems because this system directly support both operations and management activities in business functions of finance, human resource management, purchasing, and other similar operations. Likewise, the University's proposed information system for these core processes may also share some feature with the decision support systems, which usually is applied for supporting the managerial decisions. That is, usually, decision support systems are based on a model of the decision-making domain, and apply techniques from management science, finance, human resource, physical resource or other functional areas of business in order to build such models.

Thus, the University should take immediate measures in introducing an information system (which combines elements of both the business information system, and decision support systems) to its core processes using the experts who already introduced the integrated student information management system so that we all would be able to see a competent university striving to be one of the premier research universities in Africa by 2025.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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