ISLAMIC ACCOUNTING INFORMATION SYSTEM DEVELOPMENT: AN EVIDENCE FROM INDONESIAN HOSPITAL

[1]ANNA MARINA, [2]SENTOT IMAM WAHJONO, [3]FAM SOO FEN

[1]Accounting Department, Universitas Muhammadiyah Surabaya, Indonesia
[2]Management Department, Universitas Muhammadiyah Surabaya, Indonesia
[3]Technopreneurship Department, Universiti Teknikal Malaysia Melaka, Malaysia
[1,2]Jalan Sutorejo 59, Surabaya 60113, Indonesia
[3]Jalan Hang Tuah,Melaka75300,Malaysia
E-mail: [1]a_m_rina@yahoo.com, [2]sentot.imamw@fe.um-surabaya.ac.id, [3]famsoofen@utem.edu.my

Abstract - Periodical development of accounting information systems (AIS) is needed to deal with the dynamic times. For hospitals that are owned and the majority of patients are moslem, an Islamic AIS is needed. especially for hospitals that have been certified Sharia, then it becomes imperative to own and operate AIS sharia. Using of Islamic AIS can increase stakeholder satisfaction, especially hospital patients. The purpose of this paper is to explain how an Integrated IT Program can improve hospital performance simultaneously. We use the Unified Modeling Language (UML) for IAIS as needed. The research location is Muhammadiyah hospital in Indonesia. Computerized AIS was developed using temporary UML for database servers using MySQL and PHP as compilers. Research Methodology uses a qualitative approach. Collection of external data and relevant documentation. Review The findings of this study indicate an increase in performance in terms of: registration of new patients, making signs and recipes. The four indicators show performance in terms of shorter work time. We continue to develop IAIS until all computerized systems are integrated for the benefit of better manage.

Keywords: Islamic Accounting Information System, Muhammadiyah hospital, Continuous Improvement, UML, MySQL

I. INTRODUCTION

In this era of disruptive innovation, shariah accounting information systems that are integrated into the whole business process in hospitals are needed because the disturbance caused by an innovation can be controlled by management. In Islamic hospitals, Islamic AIS becomes an important requirement because in addition to satisfying patients and hospital stakeholders, IAIS can improve the efficiency and accuracy of financial data.. The increasing number of patients in the hospital is causing the pressure on the administrative work. Often the administrative and financial sections are unable to serve patients properly and correctly. Many patients are less satisfied with hospital services because they are slow and sometimes wrong in calculating bills. In the Administration and Finance section there are a series of activity processes such as patient data recording, medical recording, medical service fee recording, billing management, checkout / check-in cash and bank, and accounting. The complexity of administration and finance as well as the increasing number of patients with various problems that often accompany it impact on the service to the patient so that it becomes slow and inaccurate. Slow and inaccurate administrative and financial conditions can be overcome by making IT (information technology) AIS tailored to the needs of the hospital. Implementing IT activities (Tailored Integrated) AIS in a computer program using MySQL database and using PHP as the compiler is expected to solve this problem with a relatively short time, about 2-5 minutes, or even less with a maximum error rate of only 5% (Handojo, et al, 2014). So Islamic AIS is AIS base on Islamic law (IAI, 2016). Accounting Information Systems (AIS) is a management tool for obtaining, analyzing information and making decisions. Accounting Information System contains accounting policies, procedures, forms, recording guides, books and recording media as well as equipment used to process financial data into the form of financial statements that will be used by management in controlling business activities and then used as the basis for decision making. AIS is a sub system that is a unified and integrated business process system (Richardson, et al, 2014).

The AIS that has been used by the hospital may not necessarily meet the needs of the hospital. Therefore AIS needs to be updated as needed for hospital in terms of reporting performance both related to financial performance and non-financial performance. As a developing organization, hospitals are also required to carry out their activities in accordance with their vision and mission. That is what drives hospital management to run its business in the midst of a dynamic need to carry out the social function and business function of the hospital in a balanced way in order to expand its business with a certain growth rate according to the financial measures set by management (Marina and Wahjono, 2013).
Financial measures can be lowered easily when the hospital has an adequate information system so management can read, analyze, and make decisions immediately (Sabarguna, 2008). Accounting information system is also used as a tool for processing information, making analysis and decisions. Accountability will go smoothly with the help of a system that allows an employee to record and document all events and transactions that occur systematically, organized, standardized and easy (Romney and Steinbart, 2014). That system will process data into incoming reports in accordance with the will of management anytime and under any

circumstances (Mulyadi, 2007). Therefore we need an integrated system that can cover all hospital activities. Management decisions taken based on information from the system are effective and appropriate (efficient). Integrated information systems will support business processes. An integrated information system should start from a small system that includes certain activities, such as an accounting information system.

Hospital as a social institution that still have to pay attention to management regulation to face the problem of administration of patient data, medical data, and financial data. Administration services to patients so can't be fast and accurate (WHO, 2016). Therefore, appropriate accounting information system is required.

Accounting Policies, are the agreements and rules that underlie the accounting treatment of a transaction. This rule is adapted to SAK, other government regulations and organizational conditions. The list and code of the account (COA), is a list of interrelated accounts names in general ledgers, subsidiary books and sub auxiliaries for parent companies and subsidiaries. COA is used for purposes of uniformity and control. The COA provides information and explains clearly and completely from each sub and group, so that the information provided can be used for purposes of control, assessment, and accounting decisions. Media inputs and Journal guidelines are useful for standardizing transactional evidence and subtracting recording process errors. In the end, AIS reports, such as Balance Sheet, Comprehensive Income Statement, Statement of Cash Flow, and Statement of Changes in Equity.

II. METHODOLOGY

This research is run with qualitative approach with experiment method. Data were collected with relevant documentation and outside observation. To achieve the desired performance improvement, MYOB Accounting applications that have been used are replaced by AIS software that we create ourselves according to the needs of the hospital business (tailored integrated AIS) using MySQL and PHP especially to be implemented in four activities, namely: 1) New patient registration, 2) Make a copy of receipt and Recipe, 3) Patient Bill, 4) Print patient reception. Before the time of data collection begins, operators and stakeholders with IAIS tailored are given explanation and understanding of the aims and technicalities of the new AIS operation and are notified of the ideal completion time of the activity. Documentation is done by recording the completion time of each activity undertaken to maintain the validity of observation and reliability of this research. Recording time for completion of the four activities is carried out for 20 working days where every day recorded for busy period is 10:00 to 11:00 in the morning and in the non-busy time is 14:00 to 15:00 noon. The validity of the data by considering median and standard deviation for each activity, while the reliability in this study is to compare the ideal time of completion of four activities in accordance with the text book. Note the completion time of the four jobs is processed with a simple statistic to get the description.

III. RESULT & DISCUSSION

We record and document the completion time of four activities: registration of new patient, making copies of receipts and prescriptions, preparing patient bills, and printing patient receipts. The completion time of all four types of work by comparing between using MYOB software with software that we created based on Tailored Integrated (TI) IAIS developed using UML while for database server using MySQL and PHP as compiler, shows improvement. For example, the work of preparing a bill for patients going home, while using MYOB, the time required is 2 hours 15 minutes, but after using tailored AIS, the time required is 1 hour 5 minutes. Similarly, for the other three jobs making copies of receipts and prescription of new patients, preparing patient bills, and printing patient receipts, all indicate faster completion time. Although the completion time of work of four indicators is not in accordance with the ideal time, but this achievement is quite good. More can be seen in table 1 below

Table 1. Outcomes 4 Indicators Task Before and After Implementation Tailored Integrated AIS.

Task	Before	After	Ideal
New patient registration	0 hour 07 minutes	0 hour 04 minutes	0 hour 03 minute
Create receipt and prescription copy	0 hour 15 minutes	0 hour 09 minutes	0 hour 05 minute
Patient Bill	2 hour 15 minutes	1 hour 00 minutes	0 hour 20 minute
Print the patient receipt	0 hour 30 minutes	0 hour 10 minutes	0 hour 05 minute

Records and documentation during the implementation of IT IAIS, as shown in table 1, can be delivered several things as the cause of time savings. Among them prior to implementation, new patient registration is done manually written patient data card. In IT IAIS data writing is done by no longer manual computer so it can save time. Similarly, other tasks, such as preparing a bill for the patient for

patients who are advised doctors can go home from the hospital. Prior to the implementation of IT IAIS, the work is done manually by preparing a bill waiting for the assurance of the return of the patient by taking note of the records of the medical treatment services provided to the patient, the use of medicines and medical equipment, doctors' records either to visit or during operations (OK and VK) Plus the new room load collected and calculated up to the return of the patient. Not infrequently the family complained of patients having to wait for the old administration process, not to mention because of the slow administrative process that causes increased room load.

The implementation of IT IAIS makes the completion time of preparing the patient's billing work much faster and more accurate. Accuracy of billing due to some work, especially on mathematical operations (addition, subtraction, multiplication, and division) is done by a computer system. Acceleration to process data brings other benefits, because the data that has been entered it will be processed by the system into the nursing database associated with financial and accounting data. So for wider management purposes, such as medical service cost analysis, medical service labor analysis, direct drug use analysis, and others can be easily communicated to management. Although the time spent on each task can be shortened, but still can be accelerated again. Here lies the potential savings that can be expected. The cause of time efficiency for the four tasks can be seen in Table 2 as follows.

Table 2.Occurrence of Time Efficiency after TI IAIS Implementation.

Task	Before	After	Ideal
New Patient Registration	Recorded manually by hand	Inputted directly to the computer	Being familiar, memorized the account code.
Create receipt and prescription copy	Recorded manually, price per unit view price list.	Inputted directly to the computer. Price per unit provided in the system automatically	Being unfamiliar, medicines and medical supplies memorized code.
Patient Bill	the recording manually by hand	Bill receipts are inputted after the medical act authorizes.	Bill receipts are inputted at any time as soon as medical action is legalized, at any time.
Print the patient receipt	Recorded manually by hand. Evidence accompanying the checked and recalculated.	Printed as a result of the system. The process of checking and recount has been done systematically.	Being unfamiliar, medicines and medical supplies memorized code.

Table 1 and 2 above, it can be said that the implementation of TI IAIS has a positive impact in terms of processing time becomes faster and the results become more accurate. Thus, the goal of TI AIS implementation in the Muhammadiyah hospital became a reality. Because administrative and finance services are faster and more accurate. The positive impact of TI IAIS implementation will strengthen employees, trust and hospital management. Employees will feel that the work they have done can be done easily with new systems and procedures, with new technology. Employees come to believe that management really takes care of employees' work and intends to improve their skills. Employees will feel that routine work will be replaced by technology. So employees have the opportunity to develop themselves in the face of new opportunities.

The work of preparing a bill that used to be a patient for a long time (2 hours 15 minutes) can be completed shorter after the implementation of IT I hour 10 2016).IS base on islamic the whole business process in Islamic hospital.p. 1-11. ganizations - ve the performance of AIS which takes only 1 hour 05 minutes. This leads to extraordinary satisfaction for employees, especially the nursing department that daily does the work. With the savings of more than half the time, it lifted the morale of employees to accept new systems and procedures because it resulted in easing. Especially after being told that the achievement of their time after the implementation of IT AIS it can still be improved given the standard workmanship is 20 minutes.

The bill-making work of the patient is time-consuming and requires high concentration, as during this work is done by the head of nursing manually by transferring and copying the medical treatment data provided to the patient, calculating each unit of action, valuing each action at the rate, multiplying it so that it becomes Unit bill. This activity is performed by the head of nursing prior to patient departure or immediately after the patient's discharge permit. The Head of Nursing will do the calculation of all the actions of the patient. Considering all activities are carried out manually, these activities often lead to errors, including miscalculations, omissions have not recorded medical procedures, misstatements or tariffs

imposed are not appropriate. Prior to the implementation of TI AIS, the process of recording and documentation in the Nursing department is not running for fear of wrong and long. They prefer to "let slowly safely". Because if the calculation of the wrong patient's bill (especially if the amount of the bill is less than the real) they are not happy because the amount of the patient's bill is the basis for calculating the nursing services incentive premium they can get each month. With the implementation of TI AIS which makes their work faster and accurate makes happy because the administration work can be faster and the results are no doubt. So they can concentrate efforts on improving services to patients outside of administrative work.

CONCLUSION

The four job indicators that have been selected to be observed and documented are the dominant types of work occurring in the hospital. These four types of work are also often a matter of administrative delays and become customer complaints of the patient's family. Even some executing four uncomfortable jobs work in part because they feel "hard and heavy" doing the job. They often complain that the job is difficult and still coupled with the risk of patient complaints. Given the results of TI AIS implementation has not reached the ideal point, then efforts to achieve the ideal time standard needs to be maintained even if the implementation period can be followed by a training program. Training targets are trying to achieve the ideal task completion time. Support from top management is needed, especially in monitoring, evaluating and motivating employees to stay better today than yesterday. In advanced training activities are expected to trigger the spirit and passion to continue to improve themselves, continuous improvement. The implementation of IT AIS on four task indicators (registration of new patient, making copies of receipts and prescriptions, preparing patient bills, and printing patient receipts) has recorded significant acceleration of task completion time. Nevertheless the acceleration of the time of completion of the work can still be accelerated again to the ideal time by doing technical training.

ACKNOWLEDGMENTS

We would like to thank the Directorate General of Higher Education, Ministry of Research and Higher Education, Indonesia for grant Hibah Penelitian Unggulan Perguruan Tinggi (PUPT) second year and the Universitas Muhammadiyah Surabaya who have facilitated this research.

REFERENCES

[1] Handojo, A.S. Maharsi, G.O. Aquaria. Pembuatan Sistem Informasi Akuntansi Terkomputerisasi atas Siklus Pembelian dan Penjualan pada CV. X, Jurnal Informatika. 2014. Vol. 6 No. 2. Pp. 86-94.

[2] IAI (Ikatan Akuntan Indonesia). 2016. Standar Akuntansi Keuangan (SAK) Syariah. IAI: Jakarta.

[3] Marina, Anna. Wahjono, Sentot Imam. 2013. Business Ethics As A Basis For Designing The Vision And Mission Hospitals: Empirical Evidences From Muhammadiyah Hospital Ponorogo, Indonesia. Journal of Economics, Business and Accounting – Ventura. 2013. Vol 16, No 3. Pp 399-408.

[4] Mulyadi, 2007, Sistem Perencanaan dan Pengendalian Manajemen, Sistem Pelipat ganda Kinerja Perusahaan, Jakarta: Penerbit Salemba Empat.

[5] Richardson, Vernon and Chang, Chengyee. Smith, Rod, 2014, Accounting Information System. New York: McGrawHill Education.

[6] Romney, Marshall B. and Paul John Steinbart, 2017, Accounting Information System, 14th Edition. Singapore: Pearson.

[7] Sabarguna, BS, 2008, Manajemen Kinerja Pelayanan Rumah Sakit, Jakarta: SagungSeto.

[8] WHO (World Health Organization), 2016, World Health Statistics 2016: Monitoring Health for the SDGs, Sustainable Development Goals. Geneva: WHO.

[9] Qatanani, Khaled M. And Hezabr, Abdulqawi A. 2015. The effect of using accounting information systems to improve the value chain in business organizations – empirical study. European Journal of Accounting Auditing and Finance Research, Vol.3, No.6, pp. 1-11.

★★★