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THE EFFECTIVENESS OF IMPLEMENTING THE EDUCATIONAL BILLING SYSTEM IN UNIVERSITY (A CASE STUDY)

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Abstract

This study aims to determine the effectiveness of implementing a billing system, constraints, and suggestions for the billing at University X. This research is qualitative research with a descriptive approach. The data sources used are primary data and secondary data. Primary data is collected through interview with the informant and the secondary data from various literature related to this research object. The analysis technique used are data collection, data reduction, data presentation, analysis, and conclusions. The results find that the billing system is effective in providing information on tuition fees, effective in accelerating the preparation of tuition fee payment reports, effective in assisting the mechanism for submitting tuition fees adjustments and relief, effective in calculating student receivables, sufficient effective in providing historical data on student financing, and effective in providing security in its operations. Meanwhile, there are still several obstacles encountered in implementing this billing system, which is historical data on student financing from acceptance to graduation is incomplete, verification of tuition fees adjustments and relief in units still takes a long time, and there is no overall integration between the billing system and Academic Systems Information. University X needs to develop a billing system in the future to meet the increasing needs for financial information.

Key Words**:** *effectiveness, system, tuition fees*.

INTRODUCTION

Education is an important part of the national development process. The definition of Higher Education according to the Law of the Republic of Indonesia Number 12 of 2012 Concerning Higher Education is the level of education after secondary education which includes diploma programs, bachelor programs, master programs, doctoral programs, and professional programs, as well as specialist programs, which are organized by universities based on Indonesian culture. In Article 65 of the Law of the Republic of Indonesia Number 12 of 2012 it is stated that the administration of higher education autonomy can be given selectively based on performance evaluation by the Minister for State Universities by applying the Public Service Agency (PSA) or *Badan Layanan Umum (BLU)* Financial Management Pattern or by establishing University bodies of law to produce good quality Higher Education. Government Regulation no. 23 of 2005 concerning Financial Management of Public Service Agencies, explains that PSA is an agency within the Government established to provide services to the community in the form of supply of goods and/or services that are sold without prioritizing profit and in carrying out its activities based on the principles of efficiency and productivity. Even though PSA is given flexibility in

managing its finances, they must still adhere to the principles of effectiveness and efficiency in public services.

University X is one of the universities located in Purwokerto, Banyumas, Central Java. University X uses the Public Service Agency (PSA) financial pattern since 2009. University X is given flexibility in managing its finances with the aim of optimizing its services to the community. So far, University X has collected fees from the public in exchange for goods/services for the services provided, one of which is the cost of education. The cost of education is an important component in the implementation of education because the cost of education is a means of supporting the achievement of existing goals.

In the period from 2009 to 2013, billing for education fees was still done by offline systems. Students make payments through University X partner bank tellers. Furthermore, students must submit the deposit slip to University X to verify the payment so that academic status can be updates. If verification has been done, students can continue the process of filling out the Study Plan Card (SPC) through the Academic Information System (AIS). Over time, various obstacles to paying tuition fees emerged. One of them is the difficulty of tracking active and inactive student status on the billing system, so that the accounting and reporting department has difficulty calculating student tuition receivables.

To improve services to students and help orderly financial administration, University X in 2014 adopt information technology by building a host-to-host system called a billing system. The billing system was actively used in 2014 until now. Students can find out directly the tuition bill that must be paid by accessing the billing system. Students who will pay tuition fees can pay offline or online via ATM, Internet Banking, Mobile Banking, or other payment channels. Payment of this education fee can be directly connected and updated to the banking system and University X. If the payment is successful, the statement "Paid" will appear on the billing system and this payment status will automatically be connected to the status at AIS so that students can continue to fill out the Study Plan Card (SPC). Recording related to payment reports can also be directly accessed through the billing system.

The billing system assists the billing mechanism and recording of education costs which previously used the manual method. However, as time has progressed and the need for information has increased, users of the billing system have faced several obstacles, especially in the financial sector. Based on the problems above, researchers are interested in conducting more in-depth research regarding the use of the billing system. So far, researchers have not found previous research that examines the use of this billing system, so researchers consider this research important to contribute to University X. Specially to find out whether the implemented billing system is effective or not. The purpose of this study is to determine the effectiveness of implementing a billing system using host to host on tuition billing, the obstacles encountered, and the expected solutions in the future. This research is expected to give an information regarding the effectiveness of the latest billing system that has been implemented since 2014 until now, comparing with the oldest system that implemented in 2009 until 2013, to University X.

This study is limited in terms of the scope of the research and the information presented. The scope of this research is the implementation of billing and payment of tuition fees from 2009–2022 and on the use of the billing system for University X's internal parties. The information

presented is the result obtained from key informants who came from University X's internal parties.

LITERATURE REVIEW

The Billing System

Nurmalasari, Anna, & Ilmi, (2020){Nurmalasari, 2020 #9} explains that a system is a system which is an arrangement consisting of several functional components that are interconnected and jointly aim to fulfill a particular process or job. The system is a network of procedures that are interconnected, gathered to carry out an activity or complete a specific goal. Understanding the physical system is a collection of elements that operate together to complete a particular goal.
The billing system at University X is a host-to-host based information system that is used to bill and record tuition fees. Based on the results of an interview with the WM, as developer on January 20, 2023, the billing system so far has functioned as follows, First, Generating Bills, which is the process of raising education bills is carried out in stages from the leadership to the treasurer. Second, for Tuition Fees Adjustment, which is the Chancellor's policy is based on certain considerations in accordance with the financial capacity of public service agencies to provide tuition adjustments for students in the event of a change in the economic capacity of students, students' parents, or other parties who finance it. Third, Tuition Fees Relief, which is the chancellor's policy to provide tuition waivers for undergraduate students who only take final assignment courses in at least the 8th semester and diploma programs who only take final assignment courses at least in the 6th semester, and Finally for Education fee payment report, which is the billing system can facilitate the need for reporting student education fee payments which can be downloaded on a daily, monthly, and year on year basis.

System Usefulness

Technology is believed to bring benefits to those who use it. If someone feels that an information technology is useful for facilitating daily processes, then he will use the system. Usefulness identified as the belief that the use of a particular technology will be able to improve their performance. System usefulness relates to the productivity and effectiveness of a system from usability in the task as a whole to improve the performance of people who use the system (Raditya & Yasa, 2022)
According to Venkatesh dan Davis in (Wardani & Sari, 2021) the construct of the Usefulness variable consists of the following four construct items including the use of the system can improve individual performance, the use of the system is able to increase the level of individual productivity, the use of the system is able to increase the effectiveness of individual performance, and the use of the system is beneficial to the individual. If the individual knows the benefits of a system for himself, then the individual will use the system. Individuals believe that the system will increase their productivity compared to before using the system. Individuals also believe that the system is able to improve their performance and the performance becomes more effective.
Anis, (2016) states that the usefulness of the system can reduce errors (human error) and is more efficient in terms of time, effort, and cost. A system that is felt to be able to provide benefits to its users will create a feeling of satisfaction and indicate that the system is successful.

However, the success of the system will be affected by the quality of the system. If the quality of the system is good, then the system created to meet the needs and satisfaction of the user can be said to be successful.

Effectiveness

The definition of effectiveness according to Afandi & Susilo (2021) is the achievement of predetermined targets. The effectiveness of the program can be done with operational capabilities to carry out work programs, in accordance with predetermined targets. Afandi and Susilo also stated that the effectiveness of information systems is a measurement of the activities of providing services, services, and productivity to the fullest, these activities include input, process and output of data or events based on existing company activities.

Meanwhile, Seyselis & Pradana (2021) states that effectiveness is a vital part of achieving the goals and objectives that have been determined by an institution or agency, activity or agenda. Effectiveness is the thing to aim for and want to achieve according to the plans that have been previously determined together. Seyselis & Pradana also emphasized that this matter is in accordance with the view put forward by Mahmudi who defines effectiveness as a bond from the output that is owned to the things that are intended. The greater the output participation in the achievement of the intended goals, the more effective the institutions, activities and agendas are carried out.

According to Handayani (2010) the effectiveness of information systems is an organizational effort to utilize the capabilities and potential of its information systems to achieve goals.

An organization has an effective information system if by using the information system the organizational goals can be achieved. Using an effective information system will improve the performance of good governance and improve service to the community.

Host to Host

Host to Host or often known as H2H is a system between connected servers that are connected directly to one another in real time. In other words, a communication or relationship in a network that occurs between hosts, namely computers with computers or computers with other devices that are connected to one another. Host to Host comes from the word Host, the word Host in English which means receiver. The word Host in term of technology can be interpreted as computer networks that is used to designate a computer connected to the internet network. Therefore, Host to Host is a Host (a system on a server) that is connected to a Host (a system on another server) directly and in real time (Azandra, 2017)

According to Sevima.com (2016) The definition of Host to Host or often known as H2H is a system between servers that are connected to each other directly. Other authors on gamatechno.com (2019) provide an understanding of Host to Host as a system between servers that are connected to each other directly. Host to Host is widely used by companies to establish connections such as data exchange and transactions. According to designjaya.com (2019) The definition of Host to Host is a system between servers that is directly connected to other servers. Host to host occurs because of communication or relationships in a computer network that occur between hosts, namely computers and other devices that are connected to each other. Based on some of the definitions above, the researcher concludes that host to host is a connecting system between servers that can integrate data directly.

Tuition Fees

Tuition fees is the entire financial sacrifice incurred by students for the purposes of studying from the beginning to the end of education (Rivandi & Kemala, 2021). Tuition fees is the total cost incurred both by individual students, families who send their children to school, individual community members, community groups and issued by the government for the smooth running of education (Hayati, 2020)

Referring to the Chancellor's Regulation in one of the tertiary institutions, the Tuition Fee is a Single Tuition Fee and Education Service Tariff. Single Tuition Fee or abbreviated as UKT is a single tuition fee that is borne by each prospective student of the diploma and undergraduate programs based on their economic ability. While the Education Service Tariff is the educational service tariff that is imposed on prospective students of postgraduate and professional programs.

Previous Research

Some previous research related to system effectiveness can be seen in table 1 below:

Tabel 1. List of Previous Research

No	Researcher name	Research focus	Type of research	Results
1	(Rahmi & Najamudin, 2022)	Research effectiveness System implementation INLISLITE application (Integrated Library System) On Activity Data Entry Library Service and Archives Aceh District West	Method qualitative with a descriptive approach	After using the INLISLITE application, overall library management has been running more effectively and efficiently. It is seen from librarian activities can make it easier for librarians to get faster because the INLISLITE application is very easy to understand, use and learn on their own. Obstacles encountered librarians in using INLISLITE at the Library Service are that the internet network is often problematic, lack of accuracy in data entry, lack of librarian training, and lack of Human Resources (HR) in the field of processing and Technology (IT).
2	(Trimbawan, Iqbal, Agustina,	Research effectiveness	Descriptive	Most of the achievements in proposing activity

	Suherli, & Adrianto, 2022)	System Implementation E-planning Program Development In area Research and Development Agency Palembang city	research with a qualitative approach	programs from each OPD have been carried out properly. This effectiveness shows that the advantages of the proposed e-planning system are locked and documented in the form of softcopy, employee mobility which saves time in inputting data so that there is a reduction in costs. Obstacles in planning at Bappeda R&D Palembang City include hampered by the inability and lack of understanding of OPD employees in implementing the e-planning system, as well as the lack of integration of e planning between SIMDA, Patroman, and the Kresna System.
3	(Sari & Sukmajati, 2022)	Examine the effectiveness of The implementation of the System Cashier Information At Margaret Hospital Husada District Wonogiri Year 2019	Descriptive Qualitative	In general, the effectiveness of the implementation of Information Systems Cashier at Marga Hospital Husada District Wonogiri is very effective and efficient because of the System Cashier information can speed up service to patients because the waiting distance between patients does not require a long time only about 5 minutes. When using a manual system the energy expended to write is larger, it requires a large data storage space and the data is not very tidy whereas using the pillar hospital

				system it does not require a lot of energy to write, data storage only uses a hard disk or flash drive and the data is neatly arranged.
4	(Pranata, 2022)	Examine the effectiveness of the implementation of the System Early Warning Flood Disaster in Malang city East Java Province	Inductive Descriptive research with a qualitative approach	The effectiveness of the flood early warning system in Malang City has been effective, which provides flood early warning information to the community and reduces the risk of flood disasters. In addition, new findings were found, namely inhibiting factors and efforts to increase the effectiveness of the early warning system. To increase the effectiveness of flood early warning, it is recommended that BPBD Malang City provide socialization and training to the community in increasing community preparedness and awareness, forming resilient urban villages, BPBD making interactive videos on disaster management and agency coordination associated with the deepening of shallow rivers.
5	(Purnamawati, Suyeno, & Anadza, 2022)	Examining the effectiveness of the Application program Information Systems Inner Mojokerto Increase Public service (Studies in	Qualitative with a case study approach that is descriptive (creswell)	The effectiveness of the Si-Mojo application program in improving licensing services at DPMPTSP Mojokerto City in general has been running well and effectively. However, there are still several indicators whose implementation has

		Service Capital investment And Service One Door Integrated Mojokerto City)		not been maximized. To support the effectiveness of the Si-Mojo application program, it is possible to optimize the socialization of the Si-Mojo application program to the community. Either by using social media (online) or in person (offline). And adding information on the official DPMPTSP website about the Si-Mojo application program.
6	(Putri & Yacob, 2021)	Examine the effectiveness of The implementation of the System Information Management Region (SIMDA) Deep Finance Preparation Financial Reports at the Department of Energy and Resource Minerals (EMR) Jambi Province	Study qualitative	The application of Financial SIMDA in the preparation of financial reports at the Jambi Provincial Energy and Mineral Resources Service can be stated to be quite effective, although there are several obstacles or inhibiting factors in the application of Financial SIMDA. This is indicated by the fulfillment of the effectiveness criteria the application of SIMDA Finance both from the aspect of program success, target success, satisfaction with the program, and overall goal achievement.
7	(Herawati & Hayati, 2020)	Examining the effectiveness of implementing the Application Financial System Village (Siskeudes) In Tantaringin Village, Muara Harus District,	Descriptive research with a qualitative approach	Implementation of the village financial system application (SISKEUDES) in Tantaringin Village, Muara Harus District Tabalong Regency, has been running effectively. Although for the community there is still a need for improvement for

		Tabalong Regency		the implementation of the SISKEUDES application in terms of planning and supervision, which in terms of application planning has not been able to adapt to the conditions that occur in society and from application supervision it is still offline.
8	(Juneldi & Sururie, 2020)	Examine the effectiveness of The Implementation of the System Information Marriage Management (SIMKAH) at KUA Subdistrict Jatinangor Regency Sumedang	Descriptive method with a qualitative approach	Application of Simkah in the Office of Religious Affairs (KUA) Jatinangor tends to be ineffectively implemented. Because there are several obstacles in the application of Simkah itself. Then the lack of readiness of KUA Jatinangor employees in the data collection process through the Simkah program and the lack of knowledge in using technology at KUA Jatinangor made the SIMKAH program not very easy in the data collection process.
9	(Rewah, Sambiran, & Pangemanan, 2020)	Examine the effectiveness of The implementation of the System Information Management Public health center (SIMPUS) in the City Manado (Study Bahu Health Center)	Descriptive research, qualitative approach	SIMPUS is a program that is very helpful in health services, but in this case, it has not been fully felt by the community due to the lack of socialization from the Bahu Health Center and related agencies. In the Bahu health center services, when implementing SIMPUS it will have a very good impact on the community, but not all people know about this program, only

				medical staff at the Bahu Health Center know about this program. The SIMPUS program has been planned according to time determined, but the implementation is still delayed because there are prioritized in the health sector. The Puskesmas Management Information System is very helpful in existing data management but cannot yet be accessed felt by all existing communities because of the lack of socialization from related parties. In carrying out health services programs like this are very helpful in the field of information and available data, but their implementation is still hampered by existing access.
10	(Santoso, 2020)	Research effectiveness Information Systems Waqf (SIWAK) As Strategy Reduce Dispute and Accelerate Certification Waqf Land in Surabaya	Qualitative descriptive approach	The Waqf Information System (SIWAK) has been effective and can reduce waqf land disputes in the City of Surabaya. But only on waqf land that already has AIW (Waqf Pledge Deed). With SIWAK, the Ministry of Religion can also make it easier waqf land certification in Surabaya. With the assistance of extension agents from the KUA (Office of Religious Affairs) to follow up on all existing waqf land. If you find waqf land that has

	pledged but has not entered SIWAK, the data will be entered into the system. However, if the pledge has not yet been made then the Ministry of Religion will come and then be directed to immediately pledge.

RESEARCH METHODS

Type of Research

This research is a qualitative research with a descriptive approach. This research attempts to explain the effectiveness of using a billing system for educational expenses, the obstacles that are still being encountered to date, and suggestions for a billing system in the future.

Data Collection Technique

This research collects the data through interviews and documentation. The interview, conducted by asking semi-structured questions to collect data and information on billing and recording education costs in the pre-billing system and post-billing system periods. The questions asked were all related to the education fee payment mechanism and the constraints and also suggestions for a future billing system. Documentation, which is done by collecting data through existing documents such as research journals and articles related to the analysis of system effectiveness which are then recorded to improve the resulting data from interviews.

Data Type

The types of data used in this research are primary data and secondary data. Primary data consist of interview related to billing and recording of education costs in the pre-billing system and post-billing system periods. Secondary data is the archival data that has been compiled and presented in some documents such as scientific journals and scientific articles related to the effectiveness of system implementation.

Research Site

The research location is the place where the researcher conducts research activities to obtain data. This research was conducted at University X, Purwokerto, Banyumas Regency, Central Java, Indonesia.

Informant

The key informants in this study were divided into two. The first, those who have responsibility for preparing and manage invoices before the billing system was used (oldest system on 2009-2013) and second, those who involved and managed bills after implementation of the newest

billing system (from 2014 until now). The number of informants who were interviewed regarding the old system of billing only 4 people because some of them already retired. These four people are still involved with the newest billing system until now. While the number of informants for the implementation of the newest billing system from 2014 until now is 11 people.

The informants involved in this study worked in positions as treasurers reception, accounting and reporting departments, and academic divisions both at the headquarter and faculties. We chose these people to be informants because these people are billing system operators and supervisors who are directly involved with the use of the system. They are relevant as informants because they understand and put the system into practice. They also have the information needed by researchers.

Data Analysis

Data analysis used in this study were:

1. Data reduction by abstracting data obtained from all field notes resulting from interviews and document review. All of this data is collected, selected, and grouped and then conclusions are drawn without eliminating the value of the data itself.
2. Presentation of data by disclosing the entire group of data obtained in order easy to read and understand.
3. Making conclusions with the data that has been obtained and arranged systematically.

RESULT AND DISCUSSION

The results of interviews with key informants regarding the development process of billing and recording of education expenses at University X are as follows:

Pre-billing system (2009-2013)

During an interview with WM, a member of the IT Team who built this system said that: "In 2009-2012 University X did not use the term Single Tuition Fees, but still used the Education Development Contribution component. Payment uses the SPC (Student Payment Center) system. Education Development Contribution bills are calculated using Microsoft Excel, then the data is submitted to the bank to be uploaded to the bank's system. Students make payments through University X partner bank tellers. Students who have not paid their tuition fees can be identified by processing existing excel data. ”After conducting more in-depth interviews regarding other obstacles encountered, WM also stated that:

"There is a delay in paying tuition fees at the bank with data at University X which takes a relatively long time, so payment data does not reflect real time data. Likewise, when the leadership requests a payment report, it takes a relatively long time because it must be processed first.”

On another occasion, the researcher conducted interviews with UWA who had served as Admissions Treasurer. UWA said that: "When I was a Revenue Treasurer staff during the pre-billing system period, tuition bills were still calculated using excel and submitted to the bank to be uploaded. Likewise, the preparation of recap of education expenses income reports for leaders is still manually calculating excel to then be divided as a basis for reports and distribution

of ceilings to each unit. This makes the process of billing and income information services less efficient and processing the data takes longer."

Based on the results of the interviews above, the researcher concluded that during the pre-billing period, billing and recording of education costs still used the manual method via Microsoft Excel to be uploaded by the bank and after payments were made by students, the process of updating data required a relatively long time so this caused the data is not real time. This also has an impact on the reporting of education fee payment information to university leaders which tends to be slow.

Post billing system (2014-present)

Since 2014 until this research was conducted, tuition bills can be paid offline through tellers and various online payment methods wherever students are, such as through ATMs, internet banking, and mobile banking. This education fee payment data can be directly updated on the billing system.

When conducting interviews with LS, accounting and payment reporting department through the billing system is still constrained in terms of reporting. As she said that:

"Until now we are still have some problems when calculating the amount of student tuition receivables. This is because there are still direct transfer payments to the chancellor's account without going through host to host. So that when calculating accounts receivable, a joint check must be carried out based on the records that exist between the accounting and reporting departments and the Revenue Treasurer.

LS also said that another obstacle that is still being faced is related to this education fee receivable. LS said that:

"There is no menu for billing for tuition fees which can be sent directly to the student concerned, for example via an email link. We recommend that in the future there is a template the billing statement for accounts receivable is standardized, making it easier for the billing process."

LS's statement was reinforced by APR as the Revenue Treasurer in the post-system period bill. APR said that:

"In the billing system there is no historical menu for student financing since acceptance to graduation. Even though during the educational journey while at University X, there were policies such as adjustments and relief. This is quite difficult for the finance department to keep track of student bills that still appear in the system because, for example, students are in arrears or get scholarships. In addition, if students are late paying after the bill is paid, we must first contact the registration department to activate the SIA."

WM, on another occasion also stated that there are still policies outside the system. WM said that:

"There are still some policies outside the system, for example such as a follow-up request for tuition fees adjustment/relief or cancellation of single tuition fees relief. Maybe in the future a kind of comparative study is needed from other University regarding the mechanism for recording student financing since the enrollment untill graduation".

Reduction of interview data

Tabel 2. Interview Results

No	Key Informants	Constraint	
		Prebilling system	**Post billing system**
1.	LS (Accounting and Reporting Section)		1. Students who are funded by scholarships, the payment is still combined (not per students) for several students, so it is still necessary to input manually per student name by Revenue Treasurer. 2. There is no menu for billing accounts with standardized templates and ready to be billed to students with the student's email link. 3. For students who late paying, the billing system has not been connected automatically with student status and Plan Cards Student's last Study/Result Study Card for conclude activity student.
2.	WM (IT Team)	1. Manual data input for paid students 2. Paid status delay (depending on the queue) 3. When a report is needed, it takes a long time, so it is not effective and efficient	1. There are still several policies outside the system. 2. The recording of scholarship financing is not optimal
3.	UWA (Treasurer)	1. Bills are still calculated using excel and submitted to the bank to be uploaded. 2. Recap of education fee income reports for leaders still manually calculating excel to then be divided as a basis for reports and distribution of ceilings to each unit. 3. The process of billing and income information services becomes less efficient. 4. Data processing takes longer time for reporting	1. For students with scholarship funding, there is no Standard Operating Procedure (SOP) regarding treatment and time of payment, so data is still difficult to obtain which ones have paid and which have not, and information on replacement scholarship students is still not connected between finance and academics.

4.	APR (Treasurer)	1. There is no historical data on student financing from acceptance to graduation 2. For students who are late paying beyond the payment period, there is no integration between the billing system and SIA

The following are important statements of research subjects on the effectiveness of the billing system:

Tabel 3. Important Statements of Research Subjects

No	Questions	Frequently Appearing Answers
1.	Do you think that the billing system is effective in providing information on student single tuition fees payments?	Effective
2.	Do you think that the billing system has been effective in accelerating payments preparation of reports on payment of tuition fees?	Effective
3.	Do you think that the billing system has been effective in assisting the mechanism for submitting single tuition fees adjustments and relief?	Effective
4.	Do you think that the billing system is effective in calculating student receivables from tuition fees?	Effective
5.	Do you think that the billing system has been effective in providing historical data on student financing?	Effective enough
6.	Do you think the billing system is effective in providing security in its operations?	Effective
7.	What obstacles did you experience in using the billing system?	When verifying the submission of student single tuition fees adjustments and relief, the unit must click on student data one by one even though the number is not small, so the time is not efficient
8.	In your opinion, what needs to be improved from the billing system?	Improvements to the verification menu for submission of adjustments and relief tuition fees for students so it can be more efficient

Based on the results of the interviews and documentation above, We concluded that the obstacles currently being faced by the system include historical data on student financing from enrollment to graduation is incomplete, verification of single tuition fees adjustments and relief in units still takes a long time, and there is no overall integration between the billing system and AIS.

Some suggestion that can be given to the billing system is that it requires the development of a billing system to overcome the obstacles that are still found today. This development can improve the process of billing and recording payment of education fees at University X and produces a precise and accurate reports in decision making.

CONCLUSION

Based on the results of the data analysis that has been done, it can be concluded that the billing system is effective in providing information on student tuition fees payments, effective in speeding up the preparation of tuition fee payment reports, effective in assisting the mechanism for submitting tuition fees adjustments and relief, effective in calculating student receivables originating from educational expenses, quite effective in providing historical data on student financing, and effective in providing security in operation. There are still a number of obstacles encountered in implementing this billing system, such as historical data on student financing from acceptance to graduation is incomplete, verification of tuition fees adjustments and relief in units still takes a long time, and there is no overall integration between the billing system and the Academic Information System.

The implication of this research is that University X needs to develop a billing system in the future so that this system can accommodate the financial information needs by University X for decision making. Apart from that, the development of the billing system is also expected to be able to eliminate the obstacles that still exist in the use of the system. It is hoped that in the future University X's billing performance will be better. The limitation of this research is that many key informants are retired so that not all practices of the education fee billing system in the past can be fully disclosed. Future research can be conducted to test the effectiveness of the system with quantitative methods or the effectiveness of the system from the point of view of students as other system users.

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