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Awareness and Implementation of Automated Accounting System for a State University in Pangasinan, Philippines

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Abstract

The study proposed a cost-effective automated accounting system for a State University in Pangasinan, applicable to other higher education institutions. Using a mixed-method research design, the study collected both qualitative and quantitative data through a Focus Group Discussion with key university officials from the accounting department and a survey of 100 accounting personnel across nine campuses, an open university system, and a school of advanced studies during the fourth quarter of 2023. Additionally, the study revisited various legal issuances and related documents to perform a comparative cost-effectiveness analysis between the existing manual system and the proposed automated accounting system. Findings revealed that, although the accounting personnel are generally aware of the current processes, there is a moderately serious problem with the existing system, particularly regarding its features. The cost analysis showed potential savings of P1,052,950.56 over three years with automation. The study recommends implementing the proposed automated accounting system to improve efficiency and cost-effectiveness, which could serve as a model for other higher education institutions.

Keywords: Accounting, Automation, Cost-effectiveness, Higher Education Institution, Implementation

INTRODUCTION

The field of accounting plays a crucial role in managing financial transactions, recording financial information, and providing accurate financial reports for organizations. Created centuries ago, with the development of trade and commerce, accounting is now the backbone of any business' financial world. A company needs them to grow and flourish and disqualify itself immediately when it cannot keep its standards right. It facilitates comparison, eliminates ambiguity, and is the only way to disclose a business' financial status to its stakeholders (Calzon 2022). As technology continues to advance rapidly, there is a growing need for businesses and institutions to adopt automated accounting systems to enhance efficiency, accuracy, and timeliness in financial processes. Technology continues to transform society at a quick pace, and accounting is one of those areas that have adopted these innovative changes. New technologies are growing able to mimic human activity, taking on repetitive work more rapidly and accurately than people can (CIMA Institute 2023).

Accounting automation is the sum of automated processes required to eliminate human intervention from accounting tasks. At its core, accounting automation streamlines accounting work. It is gives employees the opportunity to focus on valuable activities like strategic planning instead of routine manual tasks (Drew, 2022).

The State University in Pangasinan, as a leading educational institution in the province, recognizes the importance of modernizing its accounting system to keep pace with technological advancements. In its initiative to embrace digitization in its operations, it has initially automated its enrolment system but failed to automate its financial processes particularly the accounting system because of the unique process and requirement of government accounting process.

In 2001, the Commission on Audit, as part of their mandate to promulgate accounting rules and regulations in all government offices, initiated the implementation of "Government Accounting Simplification and Computerization Project" to design a new government accounting system (NGAS) with the objective of simplifying government accounting and generate periodic and relevant financial reports for better monitoring of performance. The New Government Accounting System software was called Electronic New Government Accounting System or e-NGAS which runs on a Microsoft SQL Server and Sybase Adaptive Server Enterprise (ASE) environments with extension security features to ensure adequate internal control.

The e-NGAS is an accounting software developed by the Commission on Audit to promote correctness, reliability, completeness and timeliness in recording government financial reports in accordance with the policies and procedures of the New Government Accounting System. (Commission on Audit, 2001). Aligned with the roll out of the e-NGAS, several innovations were launched as part of the computerization of Financial Management Information System (FMIS) of the government. These innovations are Electronic Budget System (eBudget System), Annual Financial Reporting System (AFRS), eTicketing System, and Training Management System (TMS). These are all geared with the digitization goal of the country to make financial reports compliant with internal standards. (COA, 2013).

According to Director Lucila M. Isidro, Director IV, Accounting Systems Development and Other Services (ASDOSO), the e-NGAS and the other innovations has caused the operations to become more efficient of the speed afforded by the technology, errors are minimized or limited because there are adequate controls placed in the system and it is easy to limit responsibility areas in a computerized environment. (2020).

The e-NGAS was first rolled out to various local government units (LGUs) and some national government offices. At present, the COA is making several enhancements in its automation and has now rolled out the new version in 2016 to comply effectively with the Public Sector Accounting Standards (PPSAS), Revised Chart of Accounts (2021) and the Unified Account Code Structure (UACS).

Despite all the available accounting automation innovations provided by the Philippine government, a State University in Pangasinan still uses the manual system of recording its financial transactions. The manual accounting system currently employed by a State University in Pangasinan presents several challenges and limitations. These include the time-consuming nature of manual data entry, the increased risk of errors in calculations and record-keeping, the lack of real-time financial reporting, and the limited ability to generate comprehensive financial analyses (Kirk Thomason, 2019). Furthermore, manual accounting processes require extensive manpower and can result in inefficiencies and delays.

This led the researcher to assess the status of financial process of a State University in Pangasinan and the impact of implementing an automated accounting system in its operations with strategies aligned with the requirements of government accounting manual to improve efficiency in its financial activities while determining the advantages that university will gain from the accounting automation as compared to its existing accounting process.

This research stems from the need to overcome the limitations and challenges associated with the current manual accounting processes. The following points justify the importance and necessity of implementing an automated accounting system in a State University in Pangasinan:

Efficiency and Timesaving

Manual accounting processes are often time-consuming and require extensive manpower. By implementing an automated accounting system, a State University in Pangasinan can streamline financial operations, reduce the time and effort required for data entry, calculations, and report generation. This efficiency gain allows staff to focus on more strategic tasks, enhancing overall productivity (Kairo Future 2016).

Accuracy and Reliability

Manual data entry and calculations are prone to human errors, leading to inaccuracies in financial records and reports. An automated accounting system can minimize such errors by performing calculations automatically and providing built-in validation checks. This ensures the accuracy and reliability of financial data, leading to more trustworthy financial reporting (Fisher 2023).

Real-Time Financial Reporting

Manual accounting processes typically involve delays in generating financial reports due to the time required for data collection, processing, and consolidation. With an automated accounting system, a State University in Pangasinan can access real-time financial

information and generate reports instantly. This enables management to make timely decisions based on up-to-date financial data.

Enhanced Financial Analysis

An automated accounting system offers advanced reporting and analysis capabilities, enabling a State University in Pangasinan to generate comprehensive financial analyses, forecasts, and projections. This assists in assessing the financial health of the university, identifying trends, and making informed strategic decisions.

Improved Compliance and Audit Trail

Manual accounting systems may lack proper audit trails and documentation, making it difficult to trace and verify financial transactions. By implementing an automated accounting system, a State University in Pangasinan can establish a robust audit trail, ensuring transparency and compliance with regulatory requirements. This facilitates internal and external audits, reducing the risk of financial mismanagement and fraud (Gustafsson & Jerkinger 2021).

Cost Reduction

While there may be initial investment costs associated with implementing an automated accounting system, it can result in long-term cost savings. By reducing manual labor, eliminating paperwork, and minimizing errors, a State University in Pangasinan can lower administrative costs and allocate resources more efficiently.

Adaptation to Technological Advancements

In today's digital age, organizations need to embrace technological advancements to stay competitive. Implementing an automated accounting system in a State University in Pangasinan demonstrates the university's commitment to innovation, modernization, and leveraging technology to improve operations.

Moreover, leveraging advanced technologies such as robotic process automation (RPA), machine learning, and artificial intelligence (AI), organizations can automate repetitive and rule-based activities such as data entry, reconciliation, and report generation. This not only frees up valuable time for accounting professionals to focus on higher-value tasks but also significantly reduces the risk of human errors (Fisher 2023).

But while accounting process automation offers significant advantages, its successful implementation requires careful planning, robust infrastructure, and adequate training. Organizations in the Philippines must invest in suitable technology platforms, establish robust

data security measures, and provide comprehensive training programs to ensure a smooth transition and effective utilization of automated accounting systems.

As the Philippines continues to evolve as a regional business hub, this research intends to establish that accounting process automation is significant as it plays a pivotal role in driving growth, enabling organizations to make data-driven decisions, and fostering financial transparency and accountability particularly in the operations of a State University in Pangasinan. The researcher intends to establish that while the government has installed various innovations in transaction processing, a State University in Pangasinan should take advantage of these innovations and invest in the automation of its accounting processes.

This research aimed to establish the need to implement an automated accounting system in a State University in Pangasinan. The researcher, as one of the key personnel in the financial operation of a State University in Pangasinan, experienced the difficulties and disadvantages of manual system of financial record keeping that leads to tedious report preparation and time-consuming data evaluation and analysis. Thus, this research finds a significant mark in the researcher's journey to help a State University in Pangasinan achieve better financial process.

METHOD

This study employed a mixed-methods research design (see Figure 1), integrating both quantitative and qualitative approaches to provide a comprehensive understanding of the proposed automated accounting system for a State University in Pangasinan. The quantitative aspect involved descriptive survey methods, using structured questionnaires to collect numerical data from 100 accounting personnel across nine campuses, an open university, and a school of advanced studies in the fourth quarter of 2023.

The survey measured variables such as the profile of accounting personnel, technology infrastructure, user acceptance, system performance, and organizational impact. Statistical analysis was performed using SPSS v.25 to determine the relationship between respondents' profiles and their awareness of the current accounting system. The qualitative component involved focus group discussions (FGDs) with key university officials, semi-structured interviews with accounting personnel, and a comprehensive document analysis of relevant legal issuances and accounting regulations. These qualitative methods provided in-depth insights into the subjective experiences, perceptions, and challenges related to the implementation of an automated accounting system.

The findings from the FGDs and interviews informed the development of the survey instrument and contributed to a comparative cost-effectiveness analysis of manual versus

automated accounting systems, focusing on areas such as collection, disbursement, report generation, and ledgering. For data analysis, a combination of frequency count, percentage methods, weighted mean, and chi-square tests were employed. The data gathered through the questionnaire and interviews were analyzed to identify the awareness levels, problems encountered, and the potential impact of automating the accounting processes at a State University in Pangasinan. A prototype model of the automated accounting system was developed based on these findings.

Ethical Considerations

Ethical principles guided the study's design and conduct. Informed consent was obtained from all participants, ensuring they were fully aware of the study's purpose, procedures, and potential risks. Anonymity and confidentiality were maintained throughout the research process, and any conflicts of interest were transparently managed, particularly given the researcher's affiliation with a State University in Pangasinan. Participants retained the right to withdraw at any stage, and all collected data was treated with strict confidentiality.

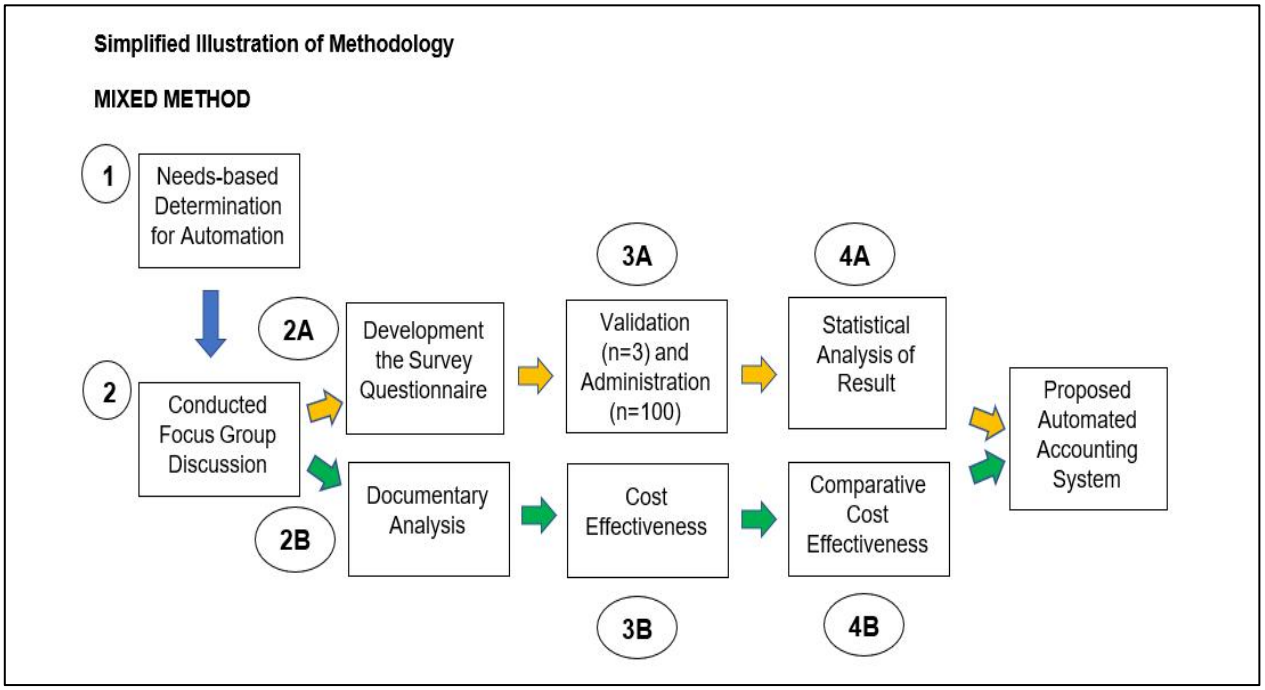

Figure 1. Simplified Research Design

RESULTS AND DISCUSSION

Profile of the Respondents.

Most of the respondents are young adults, with over half (53.0%) aged between 21 to 30 years, followed by 23.0% in the 31 to 40 age range. Smaller proportions fall within the ranges of 41 to 50 years (15.0%), 51 to 60 years (3.0%), and 61 to 70 years (6.0%). This age

distribution aligns with findings from Abrojena et al. (n.d.), which also reported a predominance of younger respondents.

In terms of sex, a significant majority of respondents are female (86.0%), compared to 14.0% male. This gender distribution is consistent with global trends in the accountancy profession, which has seen a substantial influx of women, particularly in the Asia Pacific region, including the Philippines (Miller, 2015). Further studies by Grant Thornton International and the Bureau of Labor and Employment Statistics also confirm that women hold a greater percentage of senior management roles in the Philippines compared to men.

Regarding the length of service, more than a third (35%) have worked in their roles for 1 to 3 years. Other respondents have been in service for 9 years or more (21%), 4 to 6 years (18%), less than a year (16%), and 7 to 9 years (10%). This mirrors the findings of Abrojena et al. (n.d.), which highlight that many Bachelor of Science in Accountancy graduates quickly find employment after passing their licensure examination and remain in their jobs due to the challenging nature and relevance of the work.

In terms of training, 45% of respondents have attended training on E-NGAS, 39% on Accounting Software and Automation, and 20% on Continuing Professional Education. Additionally, 20% have attended other types of training, while less than a fifth have not attended any training. These findings underscore the importance of training in enhancing critical skills such as critical thinking, communication, and problem-solving, which are valued among CPA professionals (Abrojena et al., n.d.).

Concerning educational background, half of the respondents hold a bachelor's degree in accounting (50%), while over a quarter (26.7%) have a master's degree. A little more than a fifth of the respondents are graduates of non-accounting courses. The relatively low number of respondents with advanced degrees aligns with Abrojena et al. (n.d.), which suggests that despite the recognized value of professional development, few pursue graduate studies.

In terms of Computer Literacy, most respondents use a desktop computer (77%), while a smaller portion uses a laptop (23%). Nearly two-thirds (64%) do not require help using a computer, while 36% need assistance, with 75% of those needing specific help not covered in the study. Regarding internet skills, over two-thirds (66.7%) have adequate skills, 20% have good skills, and the remainder have excellent (10%) or poor (3%) internet skills. The study aligns with previous research indicating that digital skills are essential for future accountants. Barac et al. (2021) identified digital skills as one of the four critical competencies for accountants. According to CGMA (2020), technological advancements, such as new data sources and cognitive computing, enable accountants to analyze data more effectively.

Additional studies (Cao et al., 2015; Vasarhelyi et al., 2015; Huerta & Jensen, 2017) highlight that digital skills help accountants enhance analytical abilities, handle data, select appropriate tools, and interpret results. Recent research (Griffin & Wright, 2015; Huerta & Jensen, 2017; Riching et al., 2017) also shows that accountants are using advanced technology and data analytics, demonstrating their digital literacy and research skills.

Level of Awareness of the respondents on the Accounting System Installed

Table 1. Weighted Mean and Descriptive Equivalent of Indicators on the Level of Awareness of the respondents on the Accounting System Installed.

Indicators	WM	DE
A. Automation Accounting System of a State University in Pangasinan		
a State University in Pangasinan uses an Automation Program or Software in the following areas of financial operations		
a. Billing	2.93	A
b. Collecting	2.56	A
c. Disbursement	3.3	A
d. Payroll	3.17	A
e. Inventory	3.7	MA
f. Financial Reporting	3.3	A
Average Weighted Mean	*3.16*	*A*
a State University in Pangasinan uses other applications in the financial transactions		
a. Spreadsheets/Excel	1.73	VH A
b. Word Processing	1.93	HA
c. Presentations Applications	2.33	HA
d. Developed Program/Application	3.17	A
Average Weighted Mean	*2.29*	*HA*
B. Automation Accounting System of a State University in Pangasinan		
1. The National Government has implemented the Electronic National Government Accounting System (e-NGAS)	3.43	MA
2. The e-NGAS is an automated accounting system used in various government offices including SUCs	3.50	MA
3. e-NGAS covers automation of collections, disbursements and financial reporting	3.47	MA
4. e-NGAS is the only automated accounting system for government offices introduced by COA	3.53	MA
5. A State University in Pangasinan is using the e-NGAS	4.30	NA A
Average Weighted Mean	*3.65*	*MA*
C. System Integration		
The accounting system used by a State University in Pangasinan provided the following:		
1. Access to financial data is timely and readily available	3.07	A
2. Financial Data gathered for report preparation are complete	2.97	A
3. Financial Data recorded are accurate and less errors are posted	3.07	A
4. Financial statement and reports can be conveniently produced from	3.07	A

the available financial data and records		
5. Financial statements are reliable and accurate	2.90	A
D. Scalability and Flexibility		
The accounting system used provides upgrades on new accounting trends and reports	3.10	A
E. Integration with other System		
The accounting system used can be integrated in other accounting system and software	3.13	A
Various accounting software can be integrated in the existing accounting system	2.93	A
F. User Experience and Efficiency		
The accounting system is convenient and provides reporting efficiency	2.60	HA
The accounting system provides venue for productive work and activities	2.53	HA
Average Weighted Mean	3.03	A

The study reveals that respondents are generally "Aware" of the installed accounting system at a State University in Pangasinan, with an average weighted mean (AWM) of 3.0, indicating limited overall awareness. Awareness of Automation Programs/Software in Financial Operations: Respondents are "Aware" of the use of automation programs/software in financial operations, such as billing, collecting, disbursement, payroll, inventory, and financial reporting (AWM = 3.16). They are "Moderately Aware" of its use in inventory operations (WM = 3.7) but "Highly Aware" of its use in collection operations (WM = 2.56). Awareness levels for other areas include financial reporting and disbursement (WM = 3.3), payroll (WM = 3.17), and billing (WM = 2.93).

Awareness of Other Applications in Financial Operations: Respondents are "Highly Aware" of the use of other applications, such as spreadsheets/Excel, word processing, presentation applications, and developed programs/applications in financial transactions. Awareness levels are "Highly Aware" for word processing (WM = 1.93) and presentation applications (WM = 2.33), "Aware" for developed programs/applications (WM = 3.17), and "Very Highly Aware" for spreadsheets/Excel (WM = 1.73).

Awareness of e-NGAS: The respondents are "Moderately Aware" of the Electronic National Government Accounting System (e-NGAS) implementation (WM = 3.65). They have some knowledge of its general functions and government use but are "Not Aware at All" that a State University in Pangasinan is using the e-NGAS (WM = 4.30).

Awareness of System Integration Features: Respondents are "Aware" of the integrated features of a State University in Pangasinan's accounting system (WM = 3.02), such as timely access to financial data (WM = 3.07), complete data for report preparation (WM = 2.97),

accuracy in recorded financial data (WM = 3.07), convenience in producing statements (WM = 3.07), and reliability of financial statements (WM = 2.90).

Scalability and Flexibility: Respondents are "Aware" that the accounting system allows for upgrades aligned with new accounting trends and reports (WM = 3.10). Integration with Other Systems: Respondents are "Aware" of the system's capability to integrate with other accounting systems and software (WM = 3.13) and the integration of various accounting software with the existing system (WM = 2.93). User Experience and Efficiency: Respondents are "Highly Aware" of the accounting system's convenience and efficiency in reporting (WM = 2.60) and its capacity to support productive work and activities (WM = 2.53).

Significant Relationship between Profile of the Accounting Personnel and their Level of Awareness of the Accounting System

The study revealed significant relationships between the profile of accounting personnel (age, sex, length of service, relevant trainings, educational background, and computer literacy) and their level of awareness of the automated accounting system in various aspects.

Age: Significant relationships were found between age and awareness of multiple indicators, such as the use of automation software, other applications, e-NGAS implementation, system integration, upgrades, and user experience. However, age did not significantly affect awareness of specific indicators like developed programs and some integration aspects.

Sex: A significant relationship existed between sex and awareness of the use of automation software in billing, collecting, and disbursement, as well as awareness of certain e-NGAS implementation aspects. No significant relationship was found for indicators like payroll, inventory, and others.

Length of Service: Length of service showed significant relationships with awareness of various automation uses, e-NGAS implementation, system integration, upgrades, and user experience. However, it did not significantly affect awareness of automation in inventory or word processing applications.

Relevant Trainings: Relevant trainings significantly influenced awareness across all areas, including software use, e-NGAS, system integration, and user experience.

Educational Background: There were significant relationships between educational background and awareness of automation use in billing, payroll, and financial reporting, e-NGAS implementation, system integration, and user experience. However, no significant relationship was found for collecting and inventory automation.

Computer Literacy: Computer literacy significantly affected awareness of some aspects, like the use of automation in collecting and payroll, e-NGAS implementation, and integration with other systems, but did not significantly impact awareness of certain applications, system integration, or data accuracy.

Problems Encountered by the Accounting Personnel in the Implementation of Existing Accounting System

Table 2. Weighted Mean and Descriptive Equivalent of the Problems Encountered by Accounting Personnel in the Implementation of Existing Accounting System

Indicators	WM	DE
As to the Existing Accounting System		
a. Data gathering is difficult to perform and requires a lot of time to complete the data needed	3.57	HS
b. Evaluation of data requires tedious tasks, and the user tend to work beyond office hours	3.73	HS
c. Financial reports are difficult to prepare and generate	3.43	HS
d. Errors always occurred in all financial reports	3.13	MS
e. The user finds it difficult to monitor data trends due to lack of generating system	3.40	MS
Average Weighted Mean	3.45	HS
As to the implementation of an Automated System I – Resistance to Change		
a. The system might require technical skills that the user finds difficult to learn	2.93	MS
b. The user lacks the enthusiasm to learn new knowledge on technology	2.70	MS
c. The new system might require new gadgets and equipment that the user is scared to use	2.77	MS
d. The system might breach data confidentiality	3.00	MS
Average Weighted Mean	2.85	MS
As to the implementation of An Automated System II – Training and Support		
a. The management will not provide technical training and workshop	3.53	HS
b. The user will shoulder the cost of training	3.17	MS
c. The user's skill may not be suitable to the technical requirements	2.70	MS
d. There is no available Manual for the new system	3.33	HS
Average Weighted Mean	3.18	MS
AVERAGE WEIGHTED MEAN	3.16	MS

The study shows that respondents generally perceive the problems with the existing accounting system as "Highly Serious," with an average weighted mean of 3.45. Major issues include tedious evaluation tasks requiring overtime (WM = 3.73), time-consuming data gathering (WM = 3.57), and difficulties in preparing financial reports (WM = 3.43).

Moderately serious problems include difficulty in monitoring data trends (WM = 3.40) and frequent errors in financial reports (WM = 3.13).

For the implementation of an automated accounting system, the problems were rated as "Moderately Serious" (mean = 3.01), particularly regarding resistance to change (mean = 2.85). Concerns include the need for technical skills (WM = 2.93), lack of enthusiasm to learn new technology (WM = 2.70), fear of new equipment (WM = 2.77), and data confidentiality risks (WM = 3.00).

The most significant problems are associated with "Training and Support" for the automated system, rated as "Highly Serious" (mean = 3.33). Key issues include the lack of technical training and workshops (WM = 3.53) and the absence of a user manual (WM = 3.33). Moderately serious concerns include the cost of training borne by users (WM = 3.17) and users' inadequate skills for technical requirements (WM = 2.70).

Proposed Automated Accounting System

Using the results from conducting the need assessment of finance personnel of a State University in Pangasinan, the following processes were determined to have the need for automation and the following automation system prototype is hereby proposed:

The central accounting automated system will be established through a major server, designed to process all data from sub systems in the accounting processes determined to provide the necessary information in the preparation of financial reports. These sub-systems are processes with distinct data requirements but the ultimate goal is to provide necessary data in the generation of financial statements.

The accounting automation is divided into two major group processes. Each process group are required to link its data which are processed in the major drive system to produce the ledger balances that will be used in the preparation of financial reports as the end product of the entire process.

The first group is the accounting process for billing and collections. The processes are composed of three accounting activities: enrolment which serves as the billing process, the issuance of receipts or the collection of billed fees and deposit of collections in the bank system. Data from these activities are processed to produce report of collections and income recognition including monitoring of cash balances in the bank. a State University in Pangasinan has an existing billing automation through its E-enrolment system which will be integrated in the proposed automated accounting system to link the processes in the automation of collection reports and issuance of official receipts. There will be a separate process linking the a State University in Pangasinan collection system with bank system for

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efficient cash management. The second process group is the disbursements system or the real time processing of transactions on all kinds of payments. The disbursement system is link with two sub systems which are inventory or asset management which involves the recording of procured inventories and resources and the payroll system linking processing of employee compensation and benefit payments. At present, a State University in Pangasinan uses an HRIS (Human Resource Information System) in its compensation and benefits data which will be integrated in the proposed accounting system.

Cost-Effectiveness of Automated Accounting System

The cost-benefit analysis for implementing an automated accounting system at a State University in Pangasinan reveals significant savings in time and labor costs compared to the current manual processes. The analysis is based on three main factors: the cost of implementation, ongoing operating costs, and the derived benefits. The implementation costs include initial expenses for purchasing hardware, software, and training staff, as well as ongoing costs for software licensing, system maintenance, and support. The automated system is projected to streamline processes such as billing, collections, disbursements, report generation, and ledgering, reducing the time spent on these tasks from days to mere hours or minutes.

Specifically, automating collection and disbursement processes would reduce the time spent by accountants on recording transactions and reconciling reports by over 90%. For example, manual encoding of collection data, which currently takes up to 44 days across campuses, would be reduced to just a few hours. Similarly, report generation, which now takes three days, would only take one hour with automation. Ledgering, a particularly time-consuming task, would decrease from 10 days to just 30 minutes. The cost savings from reduced labor requirements *(potential savings of P1,052,950.56 over three years with automation)* and increased efficiency would more than offset the initial costs, leading to significant financial benefits over time.

The data provided in all the described processes or sub system will be processed in the major accounting server to produce balances of accounts and generation of financial reports. A proposed automated accounting system framework can be seen in Figure 2.

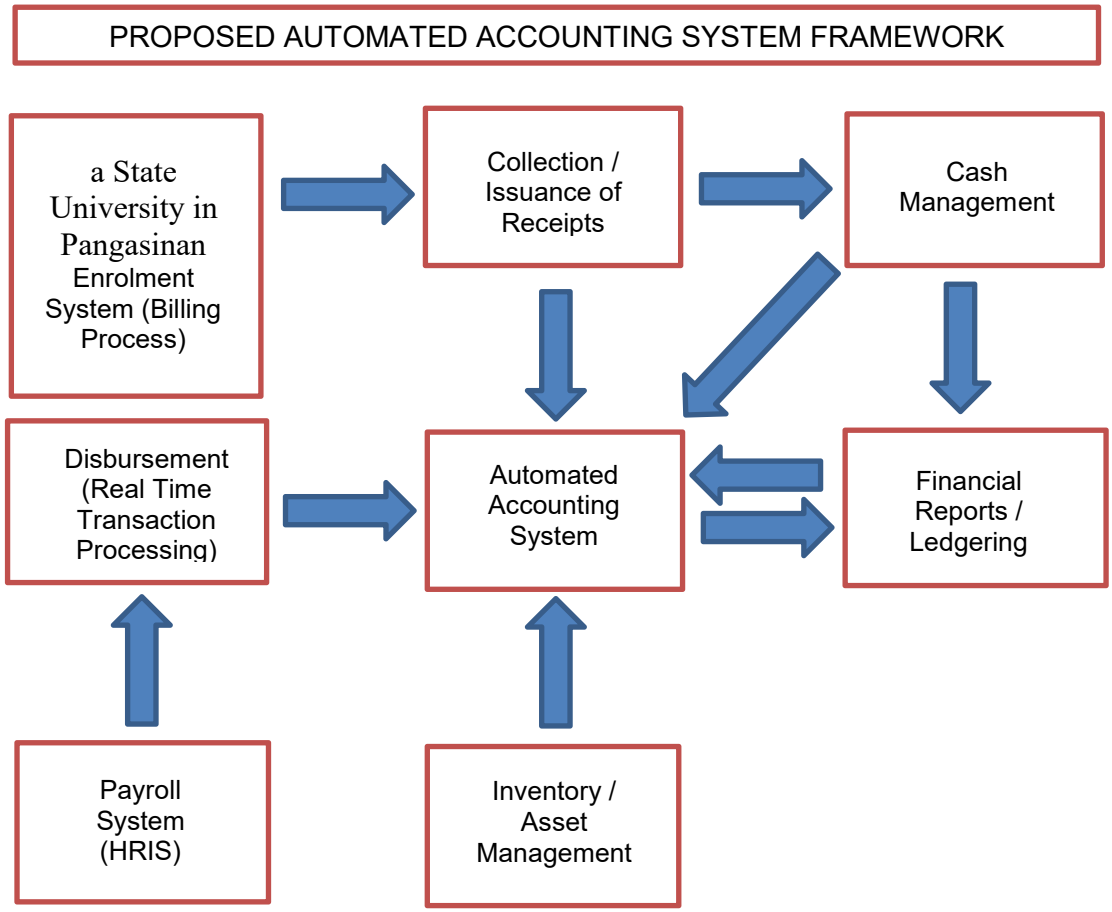

Figure 2. The Proposed Automated Accounting System

CONCLUSION

The researcher concludes that the accounting personnel at a State University in Pangasinan are predominantly young, female, and relatively new to the institution but possess relevant accounting qualifications and computer literacy. They are generally aware of automated accounting processes, and a significant relationship exists between their personal profiles and their awareness of such systems. Despite encountering serious challenges with the current manual accounting system, automating key processes like collections, disbursements, report generation, and ledgering is deemed cost-effective.

SUGGESTIONS

The recommendations include encouraging a State University in Pangasinan's accounting personnel to pursue further education, conducting hands-on training in automated systems, exploring the relationship between personnel profiles and system awareness, and ultimately adopting the proposed automated accounting system for improved efficiency and cost savings.

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