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Short Paper

Financial Accounting Module Configuration Plan for Enterprise Resource Planning (ERP) System in a State University in Region 2, Philippines

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Abstract

Purpose – This paper showcased the benefits and impact of SAP-ERP for Higher Education. Specifically, it answered the questions: What are the configuration requirements for organizational structure; processes; and master data? What are issues related to ERP implementation? What ICT infrastructure shall support the implementation?

Method – This study utilized the Accelerated System Applications and Products (ASAP) methodology that provided a roadmap for optimizing the implementation of SAP-ERP systems. This was developed to guarantee a cost-effective and on-time delivery of all projects.

Results – For the Organizational Structure, Processes, and Master Data, SAP ERP increased efficiency and sped up the operation of all the funds of the organization. Staff could perform the transaction and generate reports efficiently. The financial heads view reports in a fast presentation. The issues and challenges included the high cost of ERP software, configuration, and training. Migration to an ERP system might be hard due to the manual operation and adequate time to convert old data into the new system. The minimum hardware and software requirements were met by the current ICT infrastructure.

Conclusion –The institution with its ability to provide solutions to needs was able also to fund the implementation cost. The minimum requirements in the implementation were

met by the organization's ICT infrastructure. Thus, SAP ERP implementation was possible.

Recommendations –It is recommended that SAP ERP will be implemented in the university to be more competitive and gain an advantage in pursuing its vision. For maximum use of an integrated system, the institution may also consider other SAP ERP modules such as M, HR, SD, and the like.

Research Implications – The Institution may adopt ERP because it is the most important business technology that penetrates commerce, industries, and educational institutions focusing on standardization and synchronization of information to improve efficiency and output, especially on financial matters.

Keywords – Enterprise System, ERP Systems, SAP, financial accounting

INTRODUCTION

The greatest challenge being faced by businesses today is the unrelenting pace of change. Every organization wants to improve its ability to respond rapidly, dynamically, and economically to market forces. Enterprises had refined their processes to become more responsive to the market needs and others bought software products and increased efforts to support business operations.

According to Ziemba (2013), organizations have constantly looked for ways to increase efficiency, reduce costs, improve product quality, and increase customer satisfaction and shareholder value, and they have to realize that the source of success in this area lies in the performance of their processes. It turned out that it was not enough to look at an organization in terms of its functional structure only, but also as a network of interrelated business processes.

The higher education system (Amin, N. Ahmed, F. F., 2015) should respond to the real requirements of the education system. Enhancements or mere adaptations of legacy solutions, which stemmed from the experience in business practice, are not always successful. The current paper showed the ERP that serves the education system, particularly in the Financial Module, and exposed the need for future business operations.

This study aimed to configure SAP ECC 6.0 Financial Accounting Module for the State University. This study sought to answer the following:

1. What are the configuration requirements that shall be considered in the Financial Accounting Module: organizational structure; processes; and master data?
2. What are the major issues and challenges related to ERP implementation?
3. What ICT infrastructure shall support the ERP implementation?

For the objectives, this study intended to configure the Financial Accounting Module SAP R/3 for the state institution. Specifically, it achieved the following objectives:

1. to identify the configuration requirements in the Financial Accounting Module for the University along with the areas of organizational structure; processes; and master data,
2. to determine the financial accounting issues and challenges related to ERP implementation in the university, and
3. to find out the ICT infrastructure that shall support the ERP implementation in the university.

LITERATURE REVIEW

SAP Enterprise Resource Planning (ERP) is the new solution to the business systems and provides comprehensive business functionality using Information Technology. The existence and use of ERP systems have a significant impact on the Information Systems (IS) in a business. Most Information Systems curriculums do not provide significant coverage of ERP concepts, and therefore the students are not knowledgeable about these systems and their impact on the industry (Mccann, D., 2009)

ERP software integrates systems so that every business function relies on a single database. With one source of information that contains accurate, real-time data, an ERP solution breaks up information logjams, helps staff make better decisions more quickly, and frees up their time to work on more high-value exercises like helping the business grow even faster. This is why many companies from different sectors could attest to the benefits of having a unified system for managing millions of data and processes (Grabski et. al, 2011).

Implementing an ERP system is a journey that requires strong project management techniques and entails direct and indirect costs throughout the life cycle stages of the system. It needs to realize that implementation took over budget and schedule, project planning and management, including the definition of functional requirements, the project's scope, data conversion, and business process re-engineering. Also, organizations need to better follow success factors within the system and enhance inter-agency collaboration for ERP support to achieve more cost-efficient ERP implementation, maintenance, and growth (Callejas and Terzi, 2012).

On the impact of the ERP system on academic performance (Burtamani & Shatat, 2021), Enterprise Resource Planning (ERP) system is a very powerful solution for many academic and non-academic institutions case it has been implemented and used effectively. Otherwise, the system will interrupt several business processes.

Shim, S.J., Shim, M.K. (2020) examined the practical level, knowledge of users' perceptions towards SAP ERP system and associations of their perceptions with their learning of business processes and their skills to use the system could help predict user

behavior regarding the system adoption and further help train users more effectively by enhancing user experiences with the system.

According to Le Duc, M. (2015), Higher education could thus potentially benefit from adopting ERP systems in their curricula, notably in business and information systems classes. ERP software system implementation in educational institutions also fosters data accuracy, data security, reduced lead time, quick changes, and faster and reduced paperwork. ERP system automates several tasks like grade calculation, stock alerts of stationery, sports equipment, and alerts about late coming students. It concludes that like any other industry, schools can prove to be a boon for the educational industry in myriad ways. With ongoing advancements in can expect the ERPs to pave way for an even greater amount of automation in the future.

Based on the article of Polancos (2018), highly efficient ERP systems like SAP **can** integrate all the operations of an educational institution like Finance, Admission, Results, Examination, Certificates, and others because it also digitally stores all the data in a central database which can be accessed quickly eliminating extensive paperwork. With ERP, modern educational establishments easily manage these piles of data and allow storing such data in predefined formats which can be quickly accessed by cross-sharing between different departments. Apart from the above-mentioned functions, some critical areas where ERP software is extremely useful in accounting – Like any finance module in any industry, the finance module in educational institutions takes care of accounts receivables/payables and defaults list preparation using the centerfire management function.

As mentioned by Bischoff and Brandy (2021), Amazon uses an ERP software called *Systems Analysis and Program Development* (SAP). SAP was created and by 1975, the small company had built applications for Financial accounting, Invoice verification, and Inventory management. SAP has continued to grow and transform from a small startup company to a *global leader* in business software, so it is no surprise Amazon chose this system to run its business processes. Recently, SAP business customers can manage their Finances, Logistical business needs, Human resources, Order management, and Sales.

Further, as one of the largest companies in North America, Johnson & Johnson has a keen grasp of the corporate social responsibilities often expected from companies its size. Johnson & Johnson designed a global SAP CO-PA instance to support its diverse product types across consumer products, medical devices, and pharmaceuticals. For the company, ERP is a platform providing greater access and support to all three sectors even though the products, profitability, and customers are vastly different. About 80 percent of Johnson & Johnson's spend now flows through SAP Ariba and the company has processed more than 250,000 purchase orders on the platform. The implementation allows a 130-year-old company to change the trajectory of healthcare. It gives us more connected, deeper relationships with our supplier base. The innovation is insightful

through digitization and making the right decisions with the right information to be more responsive to the needs of patients and customers. For them, it has been an enjoyable experience because the technology has worked, and it must work every day (Campbell, S. 2018).

As studied by Heena and Oza (2019) ERP system is a management system to improve the efficiency, agility, and profitability of business organizations in a globally competitive world. As per regression results, the FI module is found positively significant for inventory management and ROI, whereas the CO module is found significant for all 10 performance measures. The empirical evidence that FICO modules do help to improve various financial and non-financial performance to add agility, efficiency, and profitability in select manufacturing firms in India.

Abdulkarim et al. (2018) investigated the underlying factors that affect the implementation of the Systems, Applications and Productions in Financial Accounting (SAP FI) module in the accounting curriculum. It was carried out by using a survey questionnaire regarding six factors, namely, knowledge, complexity, usability, usefulness, satisfaction, and future career that affect the implementation of the SAP FI module. The results of their study found that the students were satisfied; they perceived that learning SAP FI was useful and it had a high impact on their future careers. All factors were found to be statistically significant in affecting the implementation of SAP FI. While the implantation efforts so far have been satisfying, various challenges persist. In conclusion, SAP FI implementation is quite challenging from human, logistic, and administrative perspectives, which gives room for more future improvements in terms of increasing the level of awareness and knowledge among the faculty and students.

As indicated in the finding of Ankita (2021), FICO Modules helped in the availability of information and thereby helped in better profitability and competitive advantage. Thus FICO Modules are important in ERP Sytems in business organizations. It improvises various financial and non-financial performances to add agility, efficiency, and profitability to the automobile sector.

In the Philippines, the products and services of SAP were used regularly by several companies to streamline their businesses and increase their productivity, whilst staying competitive in the market (SAP Brian Online, 2020). Today, SAP ERP software is being used by several industry verticals, including real estate, energy, IT, and many others. Some of the major companies and businesses relying on SAP's solutions and services include Ayala Land Inc, Bank of the Philippines Islands, JG Summit Holdings Inc, Jollibee Foods Corp, Manila Electric Co, Megaworld Corp, Metropolitan Bank and Trust Co, Petron Corp, PLDT Inc, and San Miguel Corp. SAP has tied up with several educational institutes and universities to help shape the future of education in the country. The objective of these programs was to enable collaboration between various faculty, students, customers, and SAP partners in tapping into the vast resources of SAP and using them to improve the quality of services and solutions rendered to customers in the future. Some

of the universities SAP had tied - up in the Philippines include Angles University Foundation, University of the Cordilleras, Mapua Institute of Technology, Far Eastern University, Asia Pacific College, Jose Rizal University, AMA Computer University, University of Santo Tomas, and others. The SAP's social program allows the Philippines to extend a helping hand in improving people's lives and making the world a better place to live in.

METHODOLOGY

The researcher preferred to follow the ASAP methodology for this proposed SAP-ERP configuration plan because the ASAP roadmap supported project initiation until implementation. The purpose of ASAP was to help project management design SAP implementation in the most efficient manner possible, by effectively optimizing time, people, quality, and other resources. Using the ASAP methodology, project management provided the roadmap for optimizing and continuous implementation of SAP systems in business processes. This solution was developed to guarantee a successful, cost-effective, and on-time delivery of all project solutions. Developed by SAP (System Applications and Products) to optimize business suites, this framework streamlines the use of methods, tools, accelerators, and templates that were originally developed for SAP projects (Eshna, 2022.)

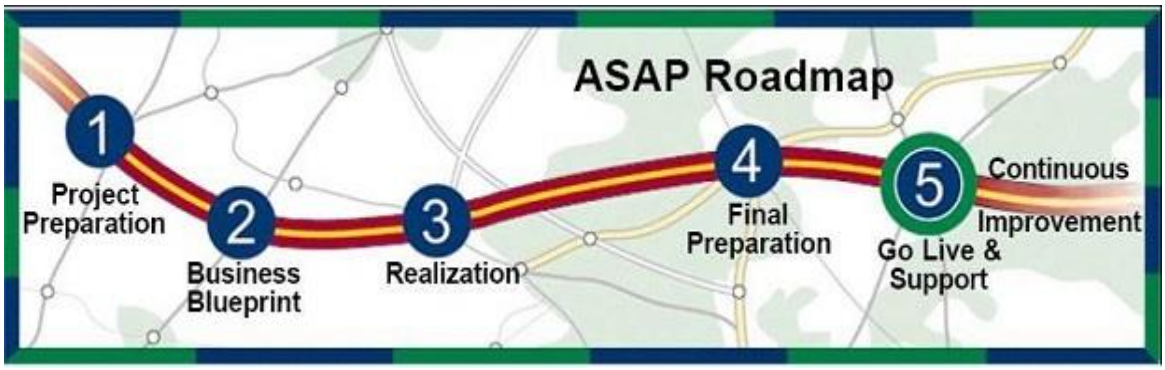

Figure 1. The Accelerated SAP Roadmap (Image copied from https://ams.com.cy/service/project-implementation/)

ASAP roadmap is divided into five phases of implementation, each offering detailed plans to assist in the documentation, recommendations, and implementation of SAP systems. It is more about streamlining the already functional SAP tools, methods, accelerators, and templates.

Project Preparation. This phase was about the initial planning and preparation to set ASAP goals. The steps of this phase helped identify primary focus areas such as objectives, scope, plan, and definition of the project team.

The researcher sent a letter addressed to the University President requesting his approval to conduct an interview, observation, and document analysis within the financial accounting, supply, and procurement offices of the University. The researcher performed rigorous research on financial accounting involving the

implementation of SAP-ERP focusing on fixed assets, accounts payable, and receivables. Collaboration among other researchers was conducted. Output in this stage was an approved request letter, an interview guide, and a sample of several analyzed accounting documents or reports.

Business Blueprint. The main activities involved in this phase were the definitions of the organization's requirements on how the master data, business processes, and organizational structure were mapped in SAP. The researcher created the "As-IS" and "To-Be" diagrams documenting the enterprise's requirements and established business processes and organizational structures represented in SAP software. The outcome of this stage was BPMN drawings showcasing the "As-IS" and "To-Be" of the general accounting procedures, account payable, account receivable, and fixed assets as well.

Realization. In this phase, all the business and process requirements in the business blueprint were configured. The researcher worked on the necessary or prescribed configuration settings, checking the functionality of each transaction through unit testing, integration testing, data cleaning, preparation, and validation.
Sample output in this phase was General Ledger Master Data, Charts of Accounts, Balance Sheet, and Asset Statements.

Final Preparation. Under this phase, the project was enhanced and documented. This phase answered all critical issues concerning project management. Successful completion of Final Preparation ensured that the business was ready to be run on the live SAP System. The researcher presented the system to the University for testing and an acceptance letter (Appendix I) was the output for this stage.

Go Live and Support. This phase covered the maintenance and daily operation of the project. In this phase, functionalities were monitored in the actual environment but due to time and resource constraints, this stage was not included.

RESULTS AND DISCUSSION

The configuration requirements along the areas of implementation were as follows:

Organizational Structure. The University is a public, non-sectarian, non-profit institution of higher learning principally supported by state funds and administers its affairs by its Charter. The governing and the highest policy-making body vested exclusively in the Board of Regents and the President of the University. The organizational structure determined the leadership, operations, and performance of the university's financial set-up to meet the needs of the institution's activities. The Accountant approved verified, validates, and approved financial documents submitted by

the Bookkeeper who performed journal entries prepared vouchers, kept records, and made financial reports. Figure 2 shows the current organizational structure that draws the financial operations of the university. The information gathered in the "as-is" structure led the researcher to design the "to-be" structure which is shown in figure 3.

Defining Business Areas. The University has business areas to present a separate significant area of operations and responsibilities for easier monitoring and differentiating transactions within the company. Again, codes for business areas such as NV01 refer to the Accounting Office, NV02 for the Procurement Office, NV03 for the Supply Office, and NV04 for Cashiers Office. Figure 5 shows the business areas of the company not much relevant to financial accounting but a requirement for configuring SAP controlling purposes only.

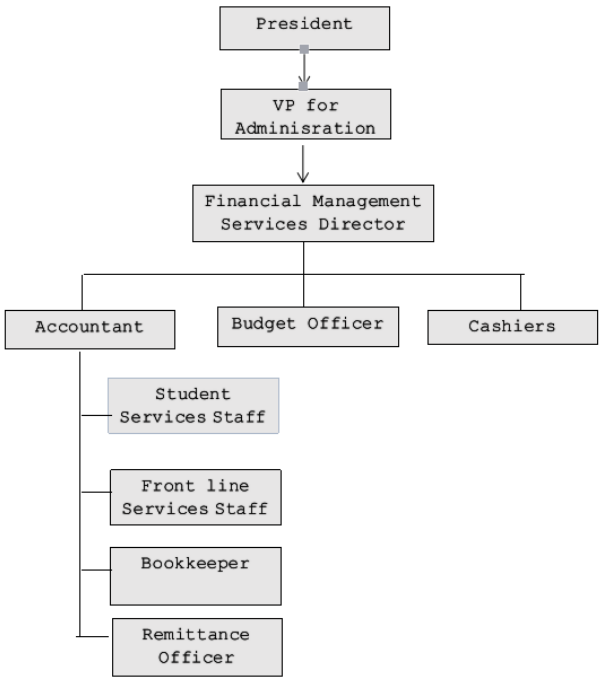

Figure 2. As-Is Organizational Structure

The organizational structure of the company presents the basic setting of the financial accounting and its configuration plan requirements for SAP ERP composed of the company's name assigned to a company code (UNVP), company's charts of accounts (NVCA), fiscal year variant (K1) and four business areas.

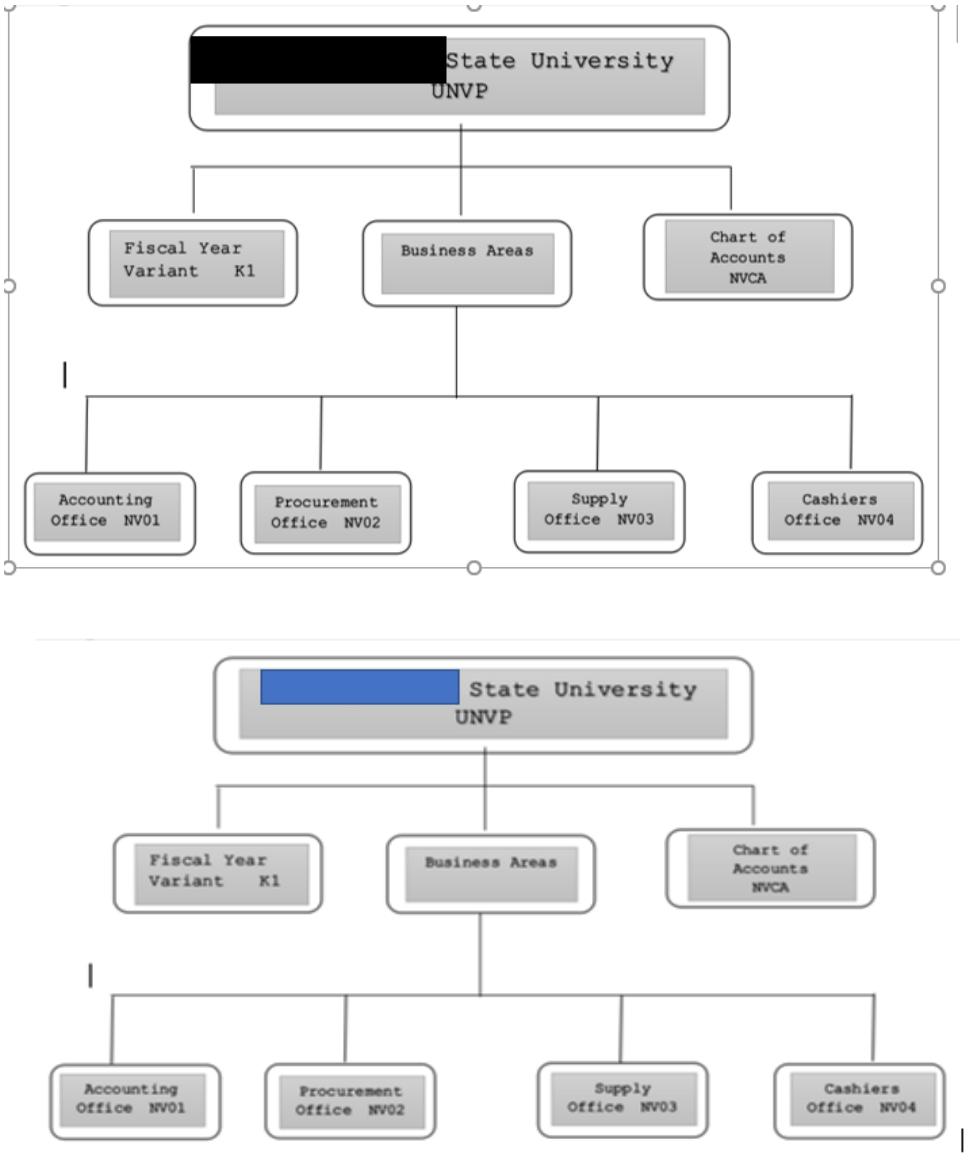

Figure 3. To-Be FI Organizational Structure

Defining Company Code. All business transactions are carried out and accounts are managed at the university and all relevant transactions are recorded to support the financial statements for internal and external reporting within the accounting office. Relevant to commercial law, this company is the smallest unit for which individual financial statements like balance sheets and profit and loss statements can be drawn up. The company code is used for the transaction in a chart of accounts and the same fiscal year breakdown within the company. And since SAP required its thousands of users to use codes for configuration the codes related to the company were used for easy remembering. Figure 4 shows the creation of code assigned to the company (UNVP) along with the Company name. The city and country fields specified "Bayombong" and

"PH" to define where the company was exactly located. Transactions figures were recorded by indicating the local currency Philippine Peso (PHP) and the language English (EN) used as the major communication tool in the country.

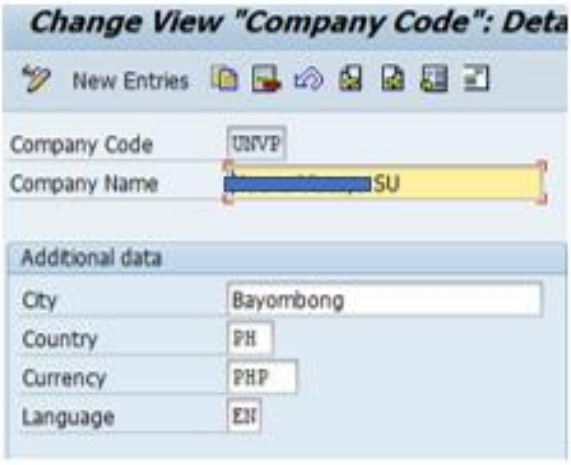

Figure 4. Creation of Company Code

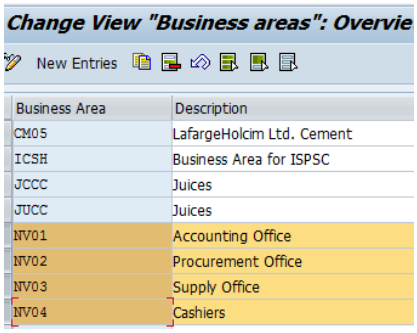

Figure 5. Definition of Business Areas

Creation and Assigning of the Chart of Accounts. A chart of Accounts (COA) is a complete listing of every account identified and made available for recording transactions in the general ledger by using defined accounting principles. Figure 6 presents the creation of the chart of accounts uniquely referring to the institution's Chart of Accounts (NVCA) for easy recalling purposes. The assignment of NVCA in the company code UNVP was included in the screenshot.

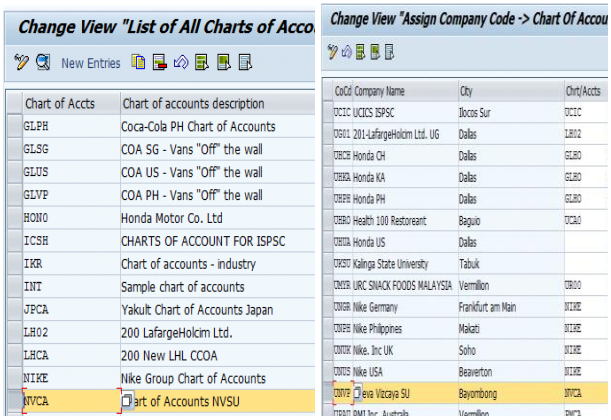

Figure 6. Creation and Assignment of the Chart of Accounts

Assigning Company Code to Fiscal Year Variant. Fiscal year variant contains the number of posting periods and the number of special periods. The University follows the year-dependent calendar year that starts on January 1 and ends on December 31 with 12 posting periods and 1 special period. Figure 7 is the screenshot of this configuration requirement.

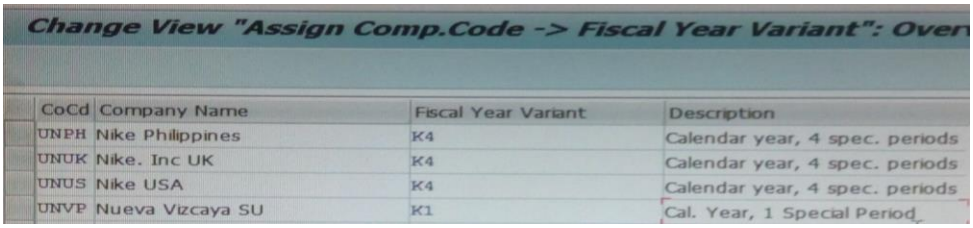

Figure 7. Assigning Company Code to Fiscal Year Variant

Defining Variants for Open Posting Period. The posting period variant controls what posting periods are allowed and not for posting. Figure 8 shows the defined variant NVPP as Posting Period for better retention, along with its assignment to the company code UNVP.

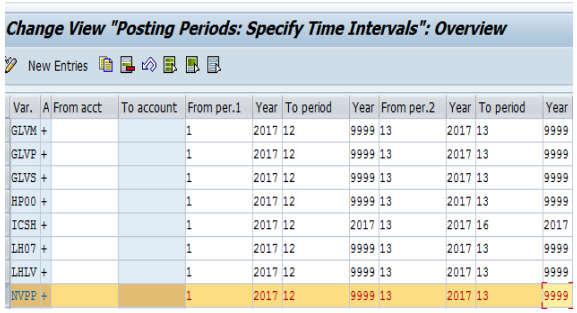

Figure 8. Defining and Assignment of Variants for Open Posting Period

Processes. The accounting office operations encompasses the processes of analyzing, recording, classifying, summarizing, communicating, and interpreting all transactions involving the receipt and disposition of government fund and property. The accounting staff have been responsible for the recording all the economic activity of an

organization - sales made, bills paid, the capital received - as individual transactions and summarizing them periodically (annually, quarterly, even daily) while the accountants designed the accounting systems the bookkeepers used establishing the internal controls to protect resources, applied the principles of standards-setting to the accounting records and prepared the financial statements, management reports and tax returns.

Account Payable. The process of account payable started in the supply office once the goods were delivered with attached invoices or bills. In the accounting office, the bookkeeper checked and recorded the details of the purchase transaction and prepared a summary of the account payable to be validated and approved by the chief accountant. The account payable report was forwarded to the director of financial management services for review and approval. Notice of approved payment to the vendor was channeled back to the accounting office for the bookkeeper to update voucher and general ledger records. The approved payment to vendor report was sent to the cashier's office for preparing and releasing the payment to the vendor. Figure 9 presents the existing operation of account payable.

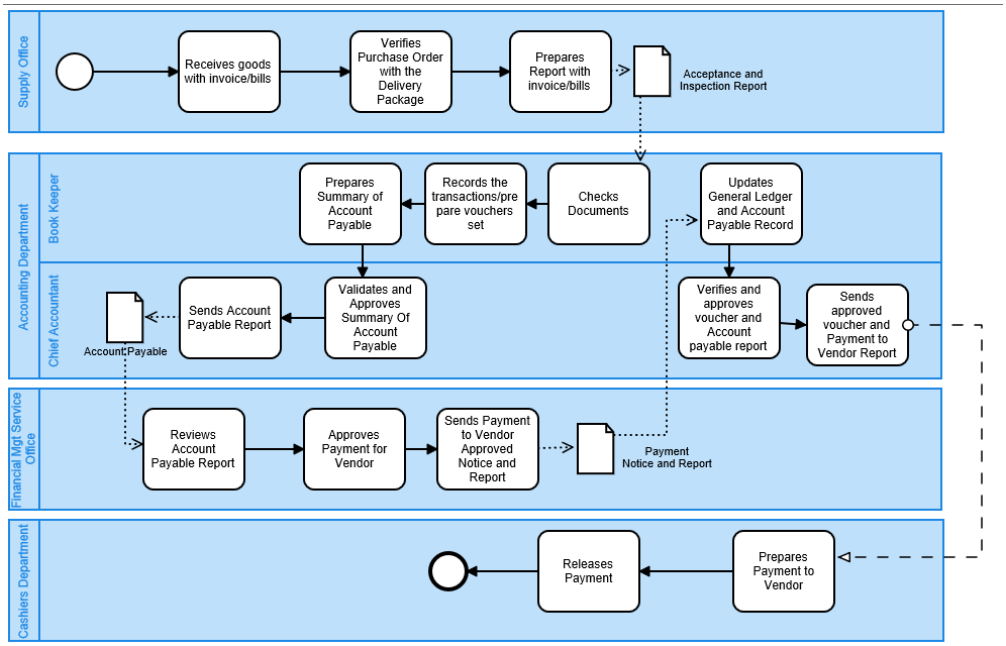

Figure 9. As-is Account Payable

Based on the existing operation of account payable the researcher considered all the details and requirements to create the to-be account payable presented in figure 10 for the configuration and implementation of SAP ERP. After the delivery and inspection of purchased goods, the supply officer enters the details of the invoice in the SAP system by creating a vendor master record. The accounting staff views the record, creates vouchers, and post-payment to the vendor in the SAP system. The general ledgers are updated and documents are generated automatically making it available for the finance management

director to view the payment history.

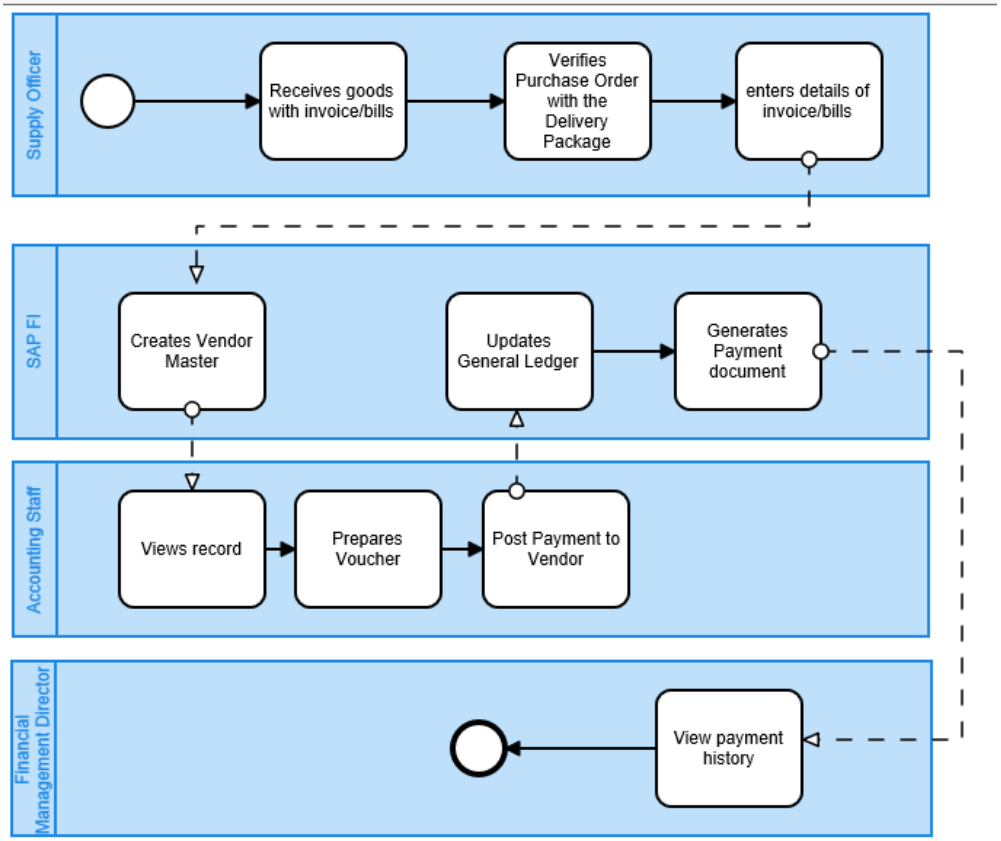

Figure 10. To-Be Account Payable

With the created to-be account payable operation, the following configuration for the SAP FI account payable sub module was made:

Creating Account Groups for Vendors. The vendor account group is a classifying feature within the vendor master record to determine those screens and fields of the vendor master record that are needed for user input. Figure 11 shows the image for this part of the configuration in which the researcher created vendor groups such as NVV1, NVV2, and NVV3 defining Vendors for easy code recalling.

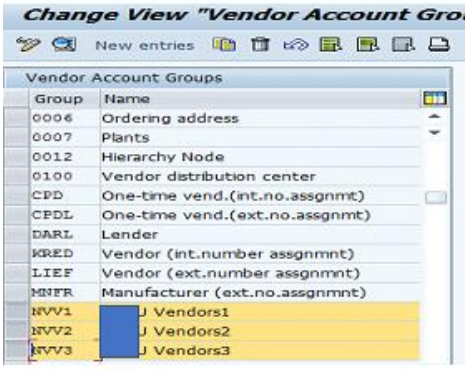

Figure 11. Creating Account Groups for Vendors

Creating and Assigning Number Range for Vendor. SAP required a number range for a vendor in the configuration settings and this number range is needed in the posting and entry of documents about vendors' information. The researcher created the range 40000000000-4199999999 allowing SAP to assign a number for each document type. Figure 12 displays the screenshot of this part.

Creation of GL as Reconciliation Account. A GL reconciliation account for account payable is a prerequisite for the master record so that all postings made to a subsidiary ledger are also posted to the general ledger. For this configuration, figure 12 shows a GL 480600 is created as a reconciliation account.

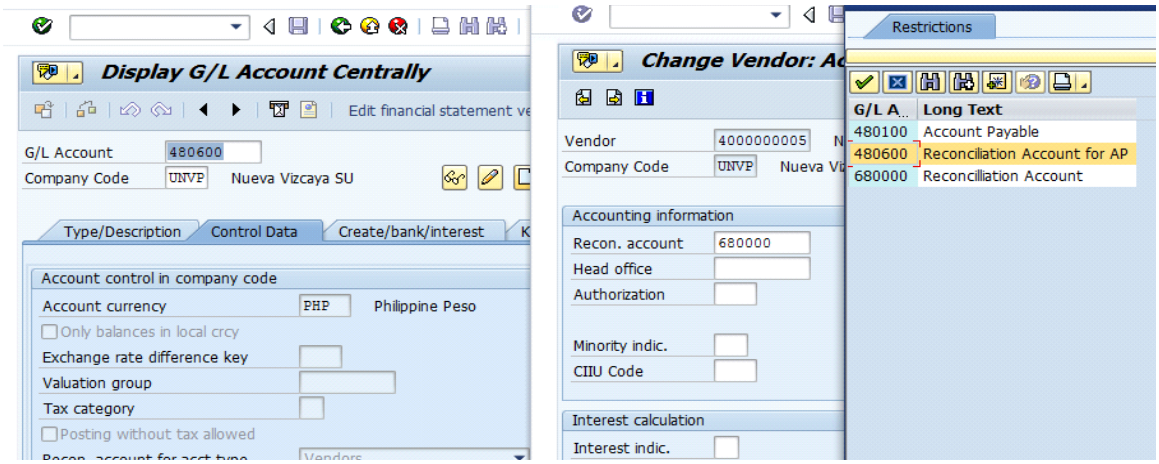

Figure 12. Creation of GL as Reconciliation Account

Account Receivables. The existing operation of account receivables began when the cashier received payment from the customer such as enrollment fees, rentals, income-generating projects (IGPs), loan receivables, and other fees. The cashier entered details on the official receipt, deposited payments in banks, and created a summary of the collection report to be forwarded to the accounting office for the bookkeeper to check and record in the journal entry of account receivable. An account receivable report is verified and approved by the chief accountant before it is submitted to the director of

financial management services for review. Figure 13 presents the swim lane of the existing operation flow of this activity. Figure 14 is the designed "to-be process" account receivable as a guide in the configuration SAP FI account payable sub-module.

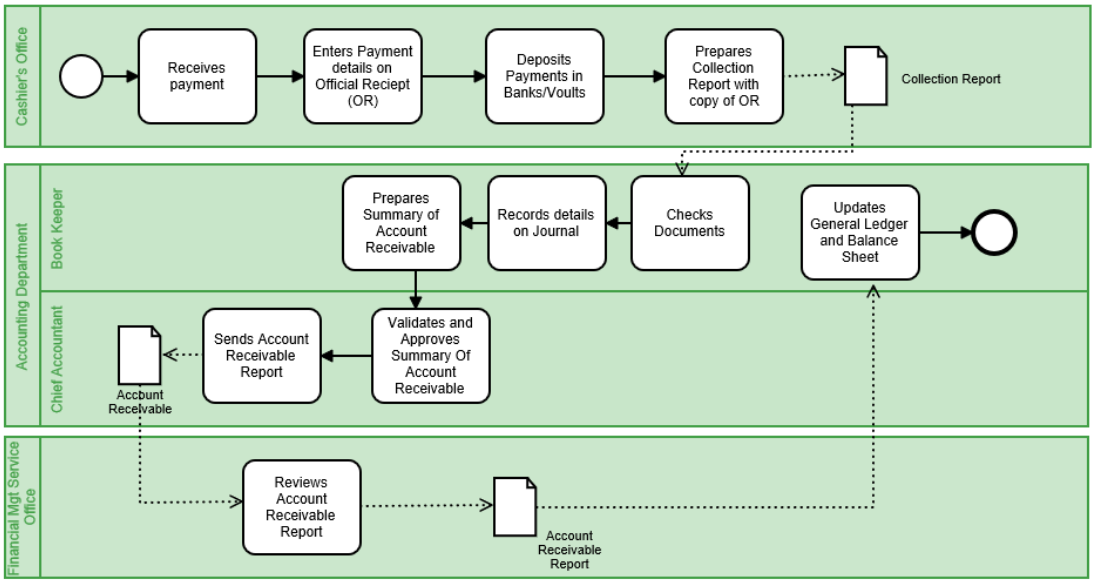

Figure 13. As-Is Account Receivable

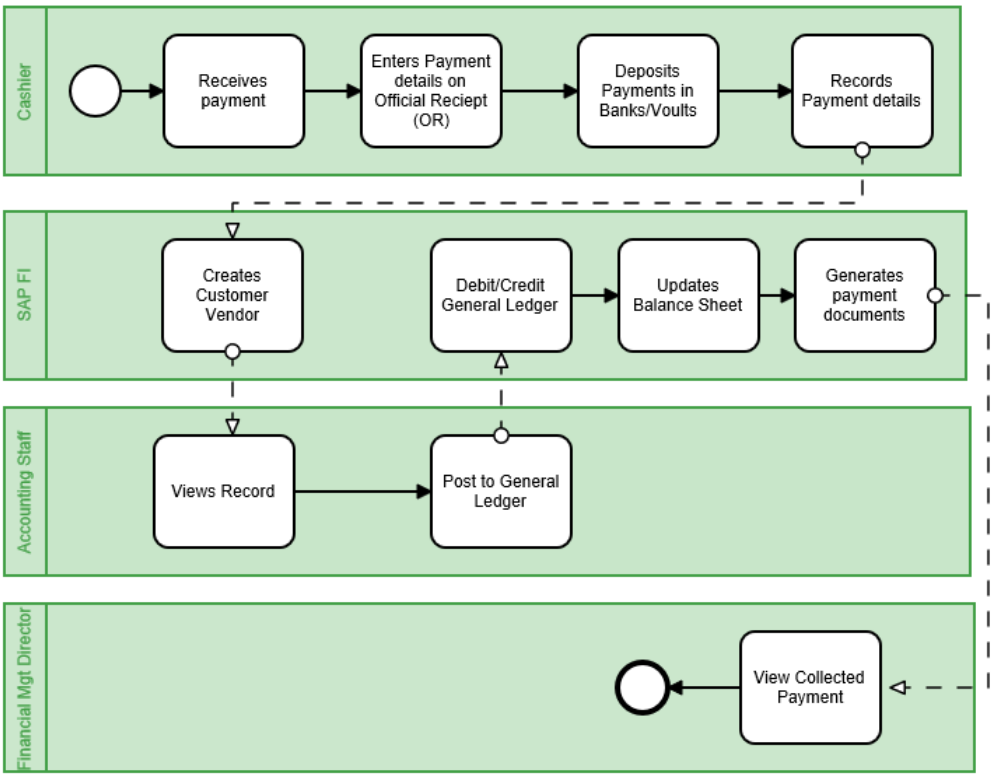

Figure 14. To-Be Account Receivable

The following configuration steps have been made by the researcher for the realization of accounts receivable in the actual SAP FI environment.

Creation of Customer Account Group. The customer account group creation is the same as the purpose of the vendor account group that determines screens and fields of the customer master record that are needed. Figure 15 shows the creation of customer account groups NVC1 and NVC2 for customers.

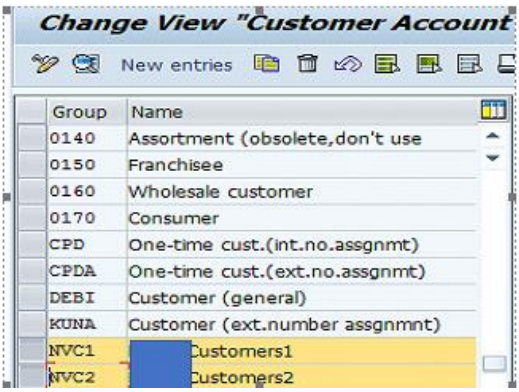

Figure 15. Creation of Customer Account Group

Creating and Assigning Number Range Customer Account Group. Figure 16 is the number ranges creation and assigning which is the same purpose as vendor number ranges in figure 12.

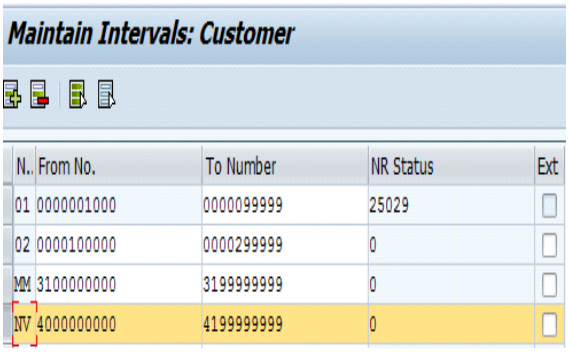

Figure 16. Number Range Customer Account Group

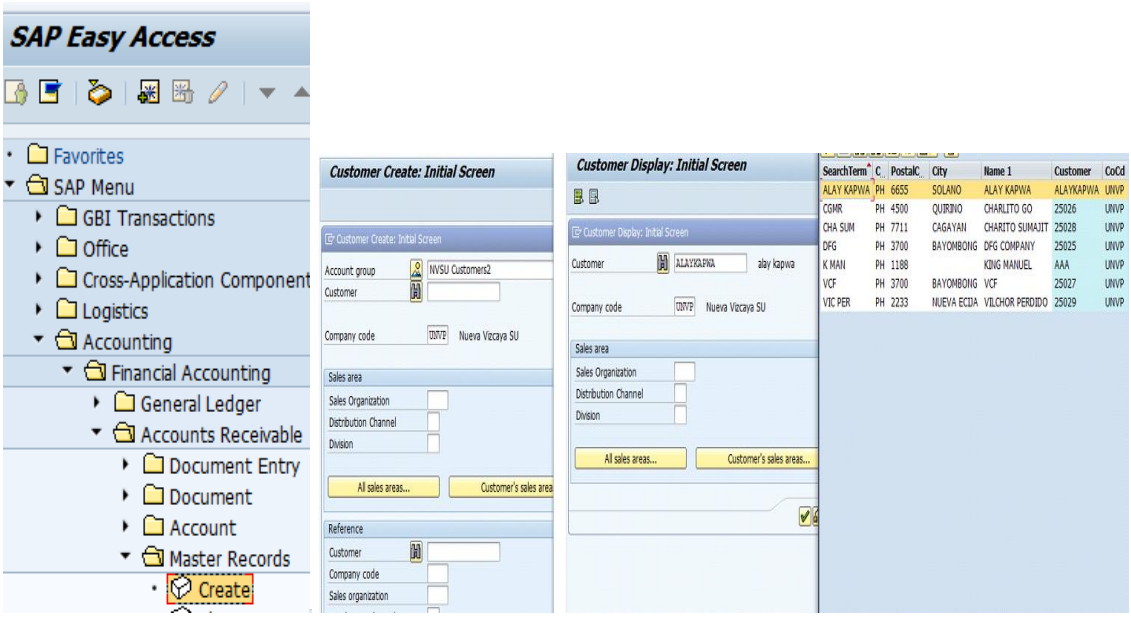

Figure 17. Creation of Customer Master Record

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the researcher came to the following conclusions. The configuration requirements that were considered if the financial accounting module. The organizational structure has a relation to the requirement of SAP ERP since its setup is on managing, monitoring, and reporting financial transactions that make up the current financial module, a shift from manual procedure to automation and integration is necessary. For processes, the financial configuration requirements on the processes of account payable, account receivable and asset accounting are supported by the SAP ERP and the implementation could provide effective and efficient business finance operations and reports which can be used for decision making because of its transparency and fast procedure. The current master data traditional way of storage which is prone to displacement and loss should be replaced with the implementation of the SAP FI module for better record keeping, storing, and reporting.

The issues and challenges related to ERP implementation include the difficulty of moving to ERP due to the high cost of ERP software, technical requirements, and training. The institution with its ability to provide solutions to business needs is able also to allocate funds for the ERP implementation cost. The minimum hardware and software requirements in the implementation of the SAP ERP system are met by the organization's ICT infrastructure. Thus, SAP ERP implementation is possible.

RECOMMENDATIONS

The following are the recommendations concerning the findings and conclusions of this project study. The Board of Regents, Financial Management and Services Director, together with the other person in charge of financial accounting must have a definite knowledge and training about SAP ERP for them to realize the kind of change it will give to an institution. It is recommended that the implementation of SAP ERP in the university be more competitive and gain more advantage in pursuing its vision. To maximize the use of the integrated system, the university may also consider the implementation of other SAP ERP modules such as MM, HR, SD, and the like.

IMPLICATIONS

The Higher Education Institution may adopt Enterprise Resource Planning (ERP) because it is the most important business technology that penetrates commerce, industries, and educational institutions focusing on standardization and synchronization of information to improve efficiency and output.

ACKNOWLEDGMENT

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