

University Management Information System: Is That Supportive Enough and Is It Already Integrated?

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Abstract–Information resource is one of the fundamental resources in organizations, including in universities. Therefore, universities have to give more attention to their management information system, especially virtual office implementation, so they can give effective and efficient services to their stakeholders. This study was designed to evaluate the implementation and performance of management information system, especially the application of virtual office in Indonesian universities. Semi-structured interview and FGD (Focus Group Discussion) were conducted in this research. The results shows that the applications of the virtual office system that are implemented by the universities is still at the OLTP (Online Transaction Processing) level, even though it actually adequately supports the users' need. Further finding shows that the database of each application were still standing individually or they were not integrated yet, so it has not given an optimum performance. Thus, the development of virtual office services system based on Enterprise Resource Planning (ERP) should be carried out.

Keywords: *Virtual Office, Enterprise Resource Planning (ERP), Management Information System*

I. INTRODUCTION

Information resource is one of the fundamental resources in organizations, including in academics organizations, including universities. Therefore, universities have to give more attention to their management information system, especially virtual office implementation, so that they can give effective and efficient services to their stakeholders. This study was designed to evaluate the implementation and performance of management information system, especially virtual office applications in Indonesian universities.

An effective and efficient management information system performance, especially an improvement from the konvensional to virtual or automatic system, could not be separated from IT

(Information Technology) adoption. This statement was supported by [6] which stated that IT adoption plays in business success, because businesses which are able to use IT effectively can potentially reap the benefits from that technology and become profitable. Benefits that are offered by adopting IT have also been implemented in Indonesian universities to support academics activities, such as administration, financial matters, and human resource development.

Eventhough virtual office application services have been implemented in some Indonesian universities, but those applications are predicted as still being applied as OLTP (Online Transaction Processing) only. This is where virtual office information systems tend to record events or activities transactions and have not applied the OLAP (Online Analytical Processing), which supports decision-making role.

Based on those explanations, this study was designed to evaluate the implementation and performance of management information system, especially the virtual office applications in Indonesian universities. One of the Indonesian university that has been chosen as this study case's research was SWCU (Satya Wacana Christian University), Salatiga, Indonesia, which was established in 1956. SWCU was nominated by 'The ICT's Smartest Campus' as the best university that has been implementing information technology and communication in Central Java [9].

II. LITERATURE REVIEW

A. *Management Information System*

Management information system is a computer-based system that makes information available to users with similar needs [4]. Application systems, which adopt knowledge in this century, are the new way to achieve the competitive advantage in this globalization era [7].

One of the information technology and communication systems that are implemented is called as geo-office, where employees are able to work using computer-based network anywhere on earth, without being physically in the office [2]. Furthermore, [5] found that all the benefits that are offered by online transaction (applications that are embedded with IT) could not be separated from the respondents' educational background. Therefore, it can be interpreted that the best place to adopt online technology to support its performance is universities, in which there are educated people. Office automation system, which make employees communicate electronically or give employees the ability to work anywhere is called as virtual office [4].

B. Virtual Office

Virtual office itself can be defined as a process of business that changes manual system from document-driven process to be an electronic-driven process, so the documents that are used in business processes are digital or in softcopy forms [8]. By using virtual office, employees can receive some benefits, such as flexibility, productivity improvement, and cost reduction [1], since organization only need to provide the central facility that can be shared by employees as the need for the office space and support arises [4].

The application of information system is increasing continuously from the traditional information system to become enterprise resource planning system. Traditional information system model (Figure 1) is a model with closed database architecture. In other words, this database is still separated, differentiated for each application, and still independent. So, data redundancy will emerge in that databases environment.

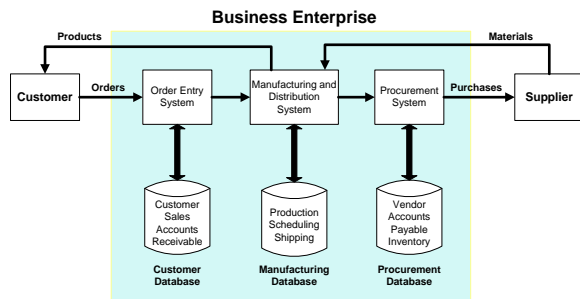


Figure 1. Traditional Information System [3]

Then, that the traditional information system was developed to be a system/an application that supports more resources' management in implementing daily transaction or operation, such as asset, human, machine, spare part, time, and capacity. This system is then called as ERP (Enterprise

Resource Planning) based system (Figure 2). Actually, ERP itself is an information system, which is commonly used in manufacture company and services, which make the business process or business flow (including operation, production, and distribution processes) become more integrated and standard.

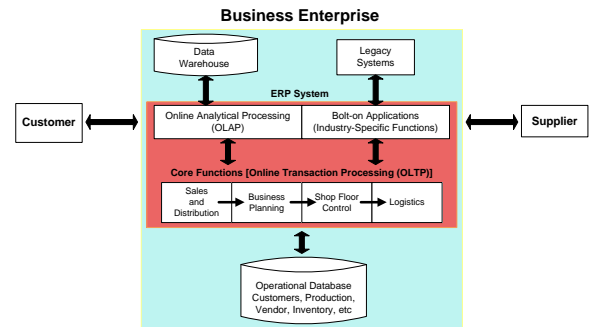


Figure 2. Enterprise Resource Planning Based System [3]

Further about enterprise resource planning based system, this system contains the creating, structuring, and saving data into the database, which can be accessed independently from any applications. Because the database architecture in ERP system is open, it should be organized by the company with a good procedure into two kinds of database system, which are the closed system database that contain critical-internal data, and open system database that can be broadly publicly accessed.

III. METHODOLOGY

The sample that had been chosen for this study was SWCU (Satya Wacana Christian University), Salatiga, Indonesia which was established in 1956. This university has 14 faculties, currently has more than 11,000 students, and is nominated by 'The ICT's Smartest Campus' as the best university that has been implementing information technology and communication in Central Java [9]. The data in this study was collected using some stages, that are an evaluation about the application systems that was already implemented and used by researchers, then the semi-structured interview with the Department of Technology and Information System, which is called as BTSI (*Biro Teknologi dan Sistem Informasi*) SWCU to get a better understanding about the applications that have been implemented in SWCU. Finally, FGD (Focus Group Discussion) with one of the faculty deans, some lecturers, and administration staffs as the applications' users was held to analyze

whether the applications used by users significantly help or even increase their performances.

IV. DATA ANALYSIS AND RESULTS

The identification of information system in SWCU was evident through the blue print of management information system in SWCU that can be seen in Figure 3. The blue print depicts that this university have nearly all the applications and database that support the university stakeholders' needs, since this blue print was originally created to be implemented as the operational applications for SWCU's stakeholders. Some of the applications that have been identified and already implemented in SWCU to save some data needed are UKSW Admission Application, Academic Information System Application which is called as SIASAT (*Sistem Informasi Akademik Satya Wacana*), Payment System, Financial Application System / SIKASA (*Sistem Keuangan Satya Wacana*), SMS (Short Message Service) Gateway, Student View, Room Management System or known as SIMARU (*Sistem Informasi Manajemen Ruang*), Health Services Application, Personal Application System, SWCU Website, Flexible Learning Application, SWCU Report Service, Managerial Dashboard, Online Thesis Application, Library Application System, Mail System, Carrer and Alumnus Information Application or SWCA (*Satya Wacana Career Center dan Alumni*), Job Carrer Application, and Research Information System. In other word, all the transaction that SWCU users need is implemented electronically by each information system applications.

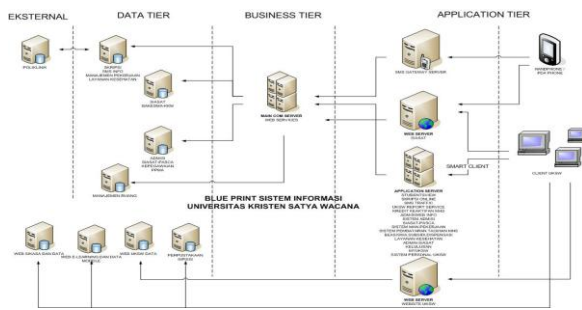


Figure 3. Blue Print of SWCU Information System

However, if we give more attention to the operational design of the information system's application in SWCU (Figure 4), we can see that the web service make a query or command that accesses many application databases to the users' dashboard.

Both in the blue print and the operational design, the data warehouse is not yet planned. Then, after researchers did an observation about the application services that have been implemented in SWCU, all the information system application findings were brought to be compared with the Department of Technology and Information System SWCU or BTSI.

The next one is the result of the semi-structured interview with BTSI staff about all the information system applications that have been evaluated and observed by the researchers. Through the semi-structured interview, this study found that the application of the virtual office system that are implemented by this university is still at the OLTP (Online Transaction Processing) level, even though it actually adequately supports the users' need. Further finding shows that the database of each application were still standing individually or they were not integrated yet, so it has not yet given an optimum performance. Thus, the development of virtual office services system, which is based on Enterprise Resource Planning (ERP) should be carried out.

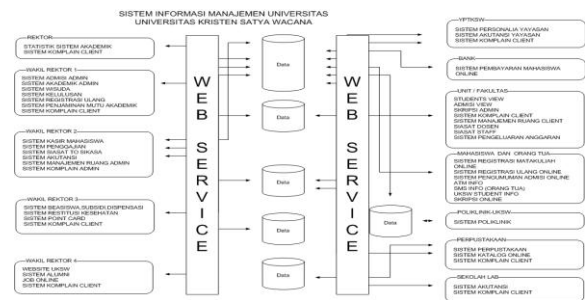


Figure 4. Operational Design of Information System's Application in SWCU

Since this study aimed to analyze the virtual office applications that was implemented and used by SWCU users from the users' perspective (user center approach), then FGD with one of the faculty deans, some lecturers, and administration staffs as the applications users was held. The FGD results show that most of the users feel satisfied with all the virtual office application, which was already implemented by the university. Eventhough the application can accommodate the daily processes or transactions, there was a gap found. Since the database of each application was still standing individually or was not integrated yet, so it has not given an optimum performance. Thus, the development of virtual office services system based on Enterprise Resource

Planning (ERP) should be carried out to solve this isolated or unintegrated database. Based on those explanations, the virtual office development that can accommodate an analysis need (OLAP) is needed to support users' needs, such as an application that can retrieve data from several applications' database to improve the performance of department accreditation staff in processing, preparing, and compiling accreditation report form.

V. CONCLUSION

Based on the findings, actually most of the applications needed by university's users were implemented to save the SWCU transaction's data (online transaction processing). Eventhough the applications of the university users' needs were implemented, the data that SWCU has shows that each database's application is still separated or the data were not optimally integrated or there was no ERP based system's roadmap that accommodates data warehouse yet.

VI. LIMITATION AND FURTHER STUDY

There were several limitations in this study, especially because this study only focused on one university. Further study that we recommend to be done is to evaluate and compare the application system and its database with others universities, so the general form of application or management information system that are conducted by Indonesian universities will be mapped. Finally, that map about the systems can become a base to propose the virtual office model based on enterprise resource planning that can accommodate an analysis implementation (OLAP), such as a model to prepare a department's accreditation's report.

VII. REFERENCES

- [1] L. E. Boone, and D. L. Kurtz, *Contemporary Business*, 2007. Jakarta: Salemba Empat.
- [2] A. C. Clarke. *Profile of the Future*, 1993. London: Pan.
- [3] J. Hall, *Accounting Information System*, 2008. South Western.
- [4] R. McLeod and G. P. Schell, *Management Information Systems 10th edition*, 2007. New Jersey: Pearson Prentice Hall.
- [5] Y. Pasharibu and J. J. O. I. Ihalauw, "E-Banking: What is in Prospects' Mind?", *Proceedings of the*

2012 IEEE 6th International Conference on Management of Innovation & Technology, 2012, pp. 325-330.

- [6] S. Qureshi, and A. S. York, Information technology adoption by small businesses in minority and ethnic communities. *Proceedings of the 41st Hawaii International Conference on System Sciences*. 2008
- [7] S. Sari, Pengaruh Teknologi Komunikasi Informasi. *Dimensi Interior Vol 4, No.1* , 2006, pp. 25-30.
- [8] R. Shield, *Virtual, Sebuah Pengantar Komprehensif*. 2003, Yogyakarta: Jalasutra.
- [9] TeSCA, Rangking TeSCa 2013. 2013, Downloaded September 20, 2013, from http://tescaindo_nesia.org/rangking/2013