

DEVELOP ENTERPRISE RESOURCE PLANNING AND CUSTOMER RELATIONSHIP MANAGEMENT FOR HIGHER EDUCATION

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ABSTRACT

The development of the level of educational needs that increased sharply, led to the emergence of education providers by offering various systems. So that it makes the competition increasingly tighter among universities in Indonesia which encourages universities to provide the best possible service, one of the most important factors to be improved is the provision of relevant information to stakeholders, including prospective students, university students, lecturers, administrators, employees, alumni, graduate users, especially for the managers of related universities. ERP (Enterprise Resource Planning) is a software in order to accommodate the resource needs in an educational institution. Both the human resources (human resources) as well as physical resources (material resources) and non-physical (immaterial resources), where can raised projection of the institution in a specified period. Managerial decision making on this subject-based CRM (Customer Relationship Management) that accommodates input from students other stakeholders. The system assesses the development of the utilization of existing resources in an educational institution. Because after all educational institutions should have policies not only make a profit as an economic enterprise. Implemented starting from the data of teachers, students, subject matter to, evaluation of students' learning, including the annual report. Will also be known in general satisfaction level and needs during the teaching process takes place. Design and implementation of system 3 components, namely: People (human resources and student), Process (interaction of the learning process and the system) and product (learning content, output), until now there is no a comprehensive model as a tool for evaluating the implementation of resource planning.

KEYWORD: Higereducation, Enterprise Resource Planning, managerial, Customer relationship Management,

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INTRODUCTION

Provision of information systems as supporting the academic process in college height is an absolute. The speeddevelopment of Information

Technology in particular the internet, enabling service development better information within an institution education, especially in the school environment (Nurasiah, 2014). Education is a factor important for the progress of the

country, because it is getting well the quality of a country's education will the better the progress of the country. In Indonesia school is a means to improve the quality of education. With the development of Information Technology (IT) is increasingly advanced today, the world of education is one a field that IT leverages widely for the interests of quality and quality improvement education in schools (Setiawan, Hariadi, & Rahmawati, 2017). So far in all archiving especially the payment recording system Education Development Contribution (SPP) which is running still using manual method recorded in an administration book. Because record length, this is also frequent resulting in a queue of payments at the counter payment is prior on the due date SPP payment ends. Payment recording it is also still mixed up with payment for books and money deposited by parents. Making it difficult for TU employees to find detailed information related to payment student administration, such as arrears that must be paid, whoever is paid off pay. That's where the writer tries to do research to build a system administration using a computer. Where that all is usually recorded and written on books and papers, will be replaced computers. Because the scope of the enterprise, the system this designed administration can later used for all educational institutions.

Increasingly fierce competition between universities in Indonesia encourages universities to provide the best possible service to students and / or stakeholders, with this increased competition, universities are implementing new technologies such as ERP, ERP is one of the systems that can integrate existing systems. in tertiary institutions, with the

existing ERP academic services in higher education institutions, it will be more optimal and easier to control, with the Education Foundation ERP will have added value in terms of promotion, so that it can increase the interest of prospective students. Enterprise Resource Planning is to exchange data with a central database that contains all information about the organization to manage all company activities through standalone software, while the database is constantly updating, so that all activities are connected and interact simultaneously. The advantage of implementing ERP is that the database is centralized so that information can be obtained easily and flexibly for all divisions in the company. The purpose of implementing ERP in higher education is for the academic process including research and teaching at low or low cost. Academic and general staff interact with core institutional activities through ERP, where students can get more information and more Elearning. Information Technology can automate the information management process from scratch enter information, save, and update it at any time so that everyone can get the latest information and perform analysis easily. Hence the process delivery of messages, information, and knowledge can be faster, easier and guaranteed up to date. One of the information systems in higher education is an academic information system. In this academic information system does not only cover the teaching and learning process, but covering the entire process from selecting prospective students to tracking graduates. Output from this information system is expected to provide relevant and up to date information for stakeholders (prospective students, lecturers, students, administration, graduate users). Relating to the provision of academic information for all

stakeholders, in academic information system design there are also modules related to planning the resources needed to produce academic information. In this research will adopt the existing terminology in ERP to be applied in the design of an academic information system.

ERP is usually used for designing in manufacturing and service companies, whereas a college is not a manufacturing company and it should be not profit oriented. In this study, the design of a college academic information system will adopt the ERP terminology. ERP consists of many terms which cover resource planning as business demands, which later can be implemented in software form (software) processing company transactions which are often called ERP applications. Package this software supports resource planning effectively. Inside the software it also includes business processes in addition to resource planning. In the company usually already has an application that performs certain functions which are often referred to as Enterprise System (ES). Not all ERP business functions are contained in a particular ES.

ERP is the largest software application adopted by universities, in line with significant investment in its implementation. Enterprise Resource Planning (ERP) is a strategic planning that is described in a more advanced form, operational, namely in functional planning (finance, human resources, activities learning, teaching, promotion, etc.) where functional planning must be made with reference on internal standards and existing resources (Choldun R., 2006). ERP implementation objectives in colleges is to provide campuses, schools and departments,

with enhanced capabilities for low or low cost research and teaching (Watson & Schneider, 1999). ERP in college is a means of replacing the management system and existing administrative systems, where this system focuses on how to develop, implementation and use of college functionality (Pollock & Cornford, 2004). Implementation of Enterprise Resource Planning (ERP) in universities is usually used for academic section. Academic and general staff interact with core institutional activities through ERP, where students can get more information and E-learning environment better (McGaughey & Gunasekaran, 2007)

Method

This research paper conducted a case study of an ERP system in Indonesian university to explore the impact of ERP system on the performance of the system's stakeholders among the university's employees. A literature review of several theories relating to success factors for mobile learning (m-learning) and electronic learning (e-learning) are analysed and a theoretical framework of success factors for m-learning of ERP systems is proposed. Two field studies are undertaken to identify the features of e-learning and m-learning systems which users enjoyed and which related to the factors identified in the theoretical framework

Result and Discussion

ERP stands for 3 word elements, viz Enterprise (company / organization), Resource (resources), and Planning (planning). The most important part of an ERP system is integration. The intended integration is combining various needs in one software in one logical database,

making it easier for all departments share information and communicate. ERP system implementation depends on size company / organization, the scope of changes, roles, and customers / members of company / organization. In application This ERP organization / company needs services consulting, customization and support services. The following are some common reasons why ERP, which is often used by a university (in education), uses ERP.

According to Heiskanen, et al. (2000) the best practice guidelines for implementing ERP from the industrial sector are not suitable for higher education (PT) because PT has a unique structure in the decision-making process. - The unique structure in the decision-making process at PT in question is that PT is generally managed collegially, meaning that the policies taken by PT is an agreement with the senate which is a representation of the shareholders. Involvement and meeting the needs of all stakeholders of higher education are things that must be a concern in its management. According to Hong, K. & Kim, Y (2002) implementation of the ERP system involves a high degree of complexity and adaptation to different organizations. So it is not yet certain that the existing model is suitable for higher education organizations. - According to Abugabah & Sanzogni (2010) the implementation of ERP in PT and industrial companies is very different, PT uses ERP for academic purposes, usually PT is a government institution that does non-profit business. While industrial organizations generally use ERP for profit business purposes. Business according to (Allan Afuah (2004) is an organized individual activity to produce and sell goods and services in order to get profit in meeting the needs of society and in the

industry. According to Abugabah & Sanzogni (2010) some researchers exclusively studying ERP systems in the education domain determine that vendors have developed ERP systems that different for Higher Education institutions, such as ERP such as SAP HER, Oracle Campus Solutions, PeopleSoft, Microsoft, Siemens AG, and SunFard. - According to While Pollock & Cornford (2004) Universities have specific and different module requirements, while business ERP modules generally include human resources, finance, operations, logistics and sales / marketing. In the PT sector requires unique applications such as: student applications (student life cycle), course applications, learning and all applications that are not part of the So it can be concluded that it is necessary to develop an ERP implementation readiness assessment model for the Higher Education sector, in this study data collection was carried out in Higher Education in Indonesia.

- Admission of new students

This process is the initial process of the ERP System which collects data on prospective new students and the results of new student admissions tests. This makes it easier for the staff of higher education institutions or foundations in the field of education.

- Student Registration

In this process, ERP plays a very important role in carrying out the student registration process and student data collection, printing student cards, student activity reports per semester to information on academic supervisors.

- Course schedule

Making class schedules is a routine

activity every semester. The entities compiling this schedule include lecturers, students, rooms, courses, and time. This process includes the process of setting lecture schedules and teaching lecturers.

- Tuition Payment

With ERP the payment process records all student financial administrative obligations, the amount that has been paid, and the installments that have been made.

- Study Plan Card

Students can enter the study plan directly according to the credit load to be taken. The entry of study plans is integrated with student financial data, so those who have not finished financial administration cannot enter their study plan data. This study plan is also accompanied by a class schedule, so students can immediately find out the academic schedule for the courses they are taking. This process also includes reports on student attendance lists and data collection of course materials. Here ERP also plays a very important role.

- Semester Exam Schedule

This process is very helpful in recording and scheduling the final exam (semester). This process is very helpful for lecturers in providing the final score of student study results, because certain components (assignments, attendance) can be entered directly every certain period, so that when the final marks are given, these components are available.

- Thesis or Final Project

The data collection process for each student who takes a thesis / final project in each semester. In this facility, checking the material or title of the final project that will be taken by the student can be done.

- Academic transcript

This facility is used to print student academic transcripts which are processed directly from student data each semester. The academic eyes displayed are all course data taken by students each semester.

- Diploma

With ERP this facility will make it easier to record and print diplomas.

- Master Data

Master data is the master data for all academic activities carried out. That way the use of ERP is very important if you have enough data, such as at a foundation or college.

- Promotion

Marketing or Promotion, this process describes a marketing strategy system to promote a foundation or college.

The ERP needs of every business vary according to the industry they are in. The need for ERP for the manufacturing industry is of course different from the need for ERP for the service industry. Companies in the wholesale, retail, and F&B industries also have different ERP requirements and need to be adapted to their industry. Likewise, educational institutions such as schools, courses, or campuses have their own ERP requirements to help them handle various activities.

There are various activities in educational institutions that are difficult to organize without the help of software, for example, such as increasing the number of staff, the process of admitting new students, managing school transportation, libraries, and laboratories. Not to mention managing HR, attendance, examinations and employee salaries. In order to have full

control over these activities, educational institutions need special software to ensure the smooth running of their education system.

HashMicro, one of the leading ERP solution providers in Indonesia and Singapore, has a variety of products such as Inventory Systems, CRM, Accounting Systems, POS, Manufacturing Systems, HRM, School Systems, Restaurant Systems and many more. HashMicro's Learning Management solutions are cost effective, customizable, and supported by an excellent support system. This system makes it easy to provide subject matter to students and can record and monitor student performance. All activities in educational institutions such as student registration, invoicing and billing, attendance management, interaction and parent management, exam management, homework management, dormitories, cafeterias and transportation management will be managed in the Learning Management System.

The following are some of the benefits of an ERP system for educational institutions:

- Providing great learning experiences for students
- With built-in tools, teachers can easily create report analysis and track student data
- Make it easier for teachers to evaluate student performance
- Speed up the student enrollment flow
- Make invoicing and billing easier
- Simplify the attendance process
- Optimizing interactions between parents and students
- HashMicro's ERP for education system has helped many

educational institutions in Singapore manage their activities.

ERP allows an increase in the management of manufacturing companies. ERP can be described as:

1. a set of management tools: forecasting, planning and scheduling in large companies that balance demand and supply.
2. Contains the ability to bridge customers and suppliers in a complete supply chain
3. Use proven business processes and decision making, and provide a high degree of cross-functional integration, including sales, marketing, manufacturing processes, operations, logistics, purchasing, finance, new product development, and human resources.
4. Making it possible to run a business that can serve consumers and productivity at a high level, at a lower cost and cheaper inventory and provides a solid basis for e-commerce.
5. ERP is able to develop planning and scheduling related to resources, for example: people, materials, machines, money, etc.

In order to face the various challenges higher education must equip itself with an integrated information system that is highly oriented towards process governance, but remains flexible in relation to the same configuration of processes. An integrated university information system should provide;

Integration.

Integration is a necessary condition for the creation of service quality, service quality is measured in terms of ease of access, comprehensive coverage of all needs and

availability of information. Integration will not be limited to applications within the university, but will extend national and international processes typical of the university domain. Flexibility. The contexts in which universities operate today are complex and subject to change. It is therefore imperative that university information systems are capable of keeping up with the continuous evolution of their organizations.

Support in decision making.

An integrated university information system should provide instruments to support governance processes, showing the data and analysis necessary for strategic planning and control. A strong area of development for universities is represented by services for students, teachers and other users. This service should be a top priority with integrated university information systems implemented within the university. This service must also be accessed with a different device. To date Pandanaran university has not had an information system developed or to purchase software solutions from small vendors it has no experience in the field due to budget constraints.

The computation systems used have a low level of integration and they are not based on a standardized homogeneous framework. Each application has data and functions separate from other applications that already exist in the organization. This application does not provide an integrated view of all activities at the university]. There is also a need for strong performance metrics and indicators to support strategic decision making. Current information systems have not been developed for strategic analysis and do not store historical data on students, and other personnel. It is therefore possible to develop complex analyzes which provide

real time reports and useful indicators for university management. Universities can choose the following integration methods: in integrated IT development, and the use of its own main resources; ERP solution development, adoption of customer relationship management. Taking into account that most of the Pandanaran University users are not yet integrated in an integrated system, a solution that will be developed has the main benefits: low initial costs, more use of existing resources.

The university is growing, the cost of maintaining and future changes to the software will always remain high, due to the habit of programming and integration work that must be done to redesign each field.

ERP System Character

ERP is integrated in a system that serves a comprehensive range of related fields in an organization. ERP is often referred to as the Back Office System which indicates that customers and the general public are not involved in this system. In contrast to the Front Office System which directly deals with customers, such as systems for e-Commerce, Customer Relationship Management (CRM), e-Government and others.

ERP Module

In a modular manner, ERP software is usually divided into main modules, namely Operations and support modules, namely Finance and accounting and Human Resources

Operation Module

General Logistics, Sales and Distribution, Materials Management, Logistics Execution, Quality Management, Plant

Maintenance, Customer Service, of Production Planning and Control, Project System, Environment Management

Finance and Accounting Module

General Accounting, Financial Accounting, Controlling, Investment Management, Treasury, Enterprise Controlling,

Human Resources Module

Personnel Management, Personnel Time Management, Payroll, Training and Event Management, Organizational Management, Travel Management,

Advantages of using ERP

Financial data integration

To integrate financial data so that top management can better see and control the company's financial performance, Standardization of Operation Process, Standardize the operation process through the implementation of best practices resulting in increased productivity, decreased inefficiency and increased product quality

Standardization of Data and Information

Standardize data and information through uniform reporting, especially for large companies which usually consist of many business units with different numbers and types of businesses

Methodology Selection

ERP-related methodologies

1. There is a structure for the selection process that should be carried out to meet the company's needs in choosing an ERP
2. The selection process does not have to be complicated to be effective. The important thing is organized, focused and simple
3. This selection process usually takes 5-6 months from the start

Business Strategy Analysis

What is the level of competition in the market and what are the expectations of customers?

Is there a competitive advantage to be achieved?

What are the company's business strategies and objectives?

How is the current business process vs the desired business process?

Are there business processes that need to be improved?

What and how are the business priorities and is there a work plan developed to achieve these objectives and priorities?

What business targets should be achieved and when?

Human Resource Analysis

How is the top management's commitment to the business for ERP implementation?

Who will implement ERP and who will use it?

What is the commitment of the implementation team?

What do prospective ERP users expect?

Is there an ERP champion that connects top management with the team?

Is there an outside consultant available to assist with the preparation process?

Infrastructure Analysis

What is the completeness of the existing infrastructure (overall networks, permanent office systems, communication systems and auxiliary systems)

How big is the budget for infrastructure?

What infrastructure must be prepared?

Analysis Software

Is the software flexible enough and easy to adapt to company conditions?

Is there a service support from the provider, not only technically but also for future system development needs

How much time for implementation is

available

Does the software have a function that can improve the company's business processes

ERP implementation

The following is a summary of points that can be used as guidelines during ERP implementation:

ERP is part of the company's infrastructure, and is very important for the survival of the company. Everyone and parts that will be affected by the ERP must be involved and provide support

ERP exists to support business functions and increase productivity, not the other way around. The purpose of ERP implementation is to increase the company's competitiveness

Learn the success and failure of ERP implementation, don't try to make ERP implementation practices yourself. There is a certain methodology for ERP implementation that is more guaranteed to succeed

What Needs Should Be Integrated In Enterprise Education?

ERP systems pose significant learning challenges for enterprise adopters. What value can a university-based business education involve corporate systems contribute to the acquisition of ERP capabilities in adopter organizations? Faculty take advantage of teaching enrichment and enhance opportunities for professional development and research, the university. And a growing demand for graduates and opportunities to collaborate with the business community. Our own challenge, described below, is to bring enterprise systems to an end. The most obvious learning need in implementing an ERP system is for the end user to gain operational capabilities with the software. This is the focus of most vendor training courses: how to manipulate software and

carry out transactions.

The difference between ERP training and ERP education defines the division of labor between ERP software vendors and partners in higher education. Universities or colleges may offer for-credit educational programs that use ERP as a platform, but they may be the terms of this software license agreement protecting important revenue streams for vendors.

The learning management component is designed to provide a conceptual framework regarding business process innovation and its supporting technology, hence it addresses the order of management issues through ERP The final evaluative component of course is a business case where students must apply their knowledge to respond to Request for Proposals from companies wishing to invest in an ERP system. Students are asked to respond to a variety of questions about the possible costs of adoption of corporate systems, benefits, other impacts on adopter, and undergraduate management and organization. Three Assistant Teaching initiatives are made available by the University. For these positions we recruit top-level Electronic Commerce students with IT backgrounds and prepare them to serve as surrogate super-users in the laboratory. TAs work the next two or three weeks in laboratory exercises, and are assisted by students as they move through the exercises.

proved to be a valuable contribution to the management team alone. They are able to problem-solve and solve many small problems as they occur, freeing the instructor to concentrate on delivery alone and managing major issues.

Customer Relationship Management

Marketing (marketing) can be defined from two closely related aspects, namely

as a function and as a discipline. As a function, marketing is the company's analysis, planning, organizing, and control of customer uptake of resources, policies and activities with a view to satisfying the wants and needs of a selected group of customers with an advantage. As a discipline, marketing studies "value exchange" Marketing has undergone a considerable paradigm shift, first starting from a change in product orientation to production, where initially existing products were highly customized and after the industrial revolution mass production occurred and at that time the production results were absorbed. market.

Second, the production orientation shifts to sales, at this stage the mass production that has been carried out a lot causes competition in the absorption of products to the market, so that special steps are needed to enable public knowledge that the products have advantages or advantages so that they are desirable and become choices. The third paradigm shift is a shift in orientation from sales to marketing. In marketing orientation, what is done is to identify customer needs before carrying out the production itself. By identifying customer needs that are expected to be satisfied and customer satisfaction is considered the key to the success of the company, this orientation is also called customer-centered marketing orientation. The current fourth paradigm shows that there is another shift in orientation from customer-centered marketing to a holistic attitude. It is called holistic because it requires attention not only to customers but also to existing resources in the company so that what is done in the company is reflected outwardly to create a good reciprocal relationship between companies and between companies and between the company and the customer.

A paradigm shift that is initially

transactional and discrete requires a different approach to changes in turbulent market conditions. In a turbulent market it can be very expensive to find new customers. So building relationships to retain existing customers is the key to solving these problems, and this is known as relationship marketing (RM). The benefits of ERP & CRM are grouped into four areas or categories. These categories derive from in-depth analysis and coding of benefits resulting from more than many empirical case studies. At the top level the four main areas are: business design, management, functional areas and IT & infrastructure. To complete the data analysis and reduction we compiled a table consisting of benefits realized grouped by above four categories

The main advantages of implementing ERP in Higher Education Institutions are:

- a) Better access to information for planning and managing institutions.
- b) Improved services for universities, students and employees.
- c) Increased income and decreased costs due to increased efficiency
- d) Data security from existing risks.
- e) Unlimited access for authorized users.
- f) Well maintained system.
- g) High performance and reliable.
- h) Scalability / adaptability.
- i) Bringing together information and processes related to students, faculty and staff.
- j) Better decision making.
- k) Meeting compliance and governance.
- l) Promote relationships.
- m) Provides greater flexibility to users.

ERP helps organizations meet the challenges of globalization with comprehensive, integrated applications comprising human resource management, finance, operations, and corporate services. ERP is designed to enable companies to succeed in world markets with support in the legal and financial fields, and to enable organizations to select internal operations and business processes to meet country-specific needs. It is very helpful for the decision makers of the organization to evaluate the various ERP available in acquisition and implementation. It will also further support managers in assessing the existing benefits of ERP within the organization in a more objective, global manner.

Conclusion

Based on the analysis carried out on educational foundations and the data above, with the use of ERP, it can be an alternative solution for the implementation of work according to the main tasks and functions of system users. Can improve the performance of employees or staff to be better, optimal and professional. Processing time is relatively faster With an ERP system it can speed up and simplify the service processes in educational foundations or universities, especially student services. Increase the added value of higher education, especially in terms of promotion. Profits resulting from the implementation of ERP and CRM systems. The first one that presents the benefits embodied in recent implementations provides an overview to date. Both of them focus attention on implementing the project significantly extending or improving a previous ERP or CRM system implementation. Research mostly focuses

on new system implementations or version upgrades. This study allows us to gain insight into the manner in which the system has been extended and the benefits resulting from this activity. The output framework provides a useful analytical tool to help us understand this benefit. Benefits in many areas of business design, management, functional areas and technology. Benefits are achieved at all levels especially with regard to integration. This leads us to conclude that future work in the area of benefit realization should be framed in understanding the benefit portfolio. One of the significant benefits of using CRM-based ERP is that it provides an adequate function of the quality of information on learning outcomes.

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