IMPLEMENTATION OF IDEMPIERE ERP ON HUMAN RESOURCES MANAGEMENT MODULE (A CASE STUDY APPROACH)

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ABSTRACT

The purpose of this research is to design and implement iDempiere ERP System on Human Capital Management Module using the Accelerated SAP (ASAP) method that refers to business blueprint and realization. The analysis is performed on the current business process, then the result will be converted into the blueprint design of the proposed system, furthermore the blueprint design of the proposed system will be configured into the iDempiere ERP. The proposed system can help company especially Human Resources and General Departments for conducting activities related to human resources, otherwise it will facilitate employees to be able to perform permission activities through Employee Self Service System.

Keywords: Human Capital Management, Enterprise Resource Planning, iDempiere ERP, Accelerated SAP.

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1. INTRODUCTION

Today, information technology and information systems has grown very quickly and influential in business world. The use of information technology and information systems to support of business activities has become an important role in facilitating the business process of a company. Information technology and information systems are used as an effort to minimize manually activities that often spend more time and can also help improve the performance and quality of a product or service so that the company is able to achieve the desired goals and targets to survive and compete in the globalization era. In addition, information technology and information systems are used to facilitate companies for obtaining information related to internal and external companies, storing important data, integrating several functions in the company for improving decision making, and speed up the process of making reports. According to CNN Indonesia (2016), technology is the key to be able to
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continue to adapt and compete in a fast-paced era like today. Technology plays an important role for supporting the current era of globalization [1]. The current world need technology like information system to support all business process, information systems are processes for collecting, processing, storing analyzing, and disseminating information for specific purposes [2].

One type of information system that is growing rapidly today and already used by many companies for managing their business is the implementation of Enterprise Resource Planning (ERP). ERP is a system used to manage corporate resources to support business processes within a company. According to Magal and Martocchio (2012), ERP systems can support multiple business areas such as Operation (Production), Human Capital Management, Finance & Accounting, Sales & Distribution, and Procurement [3]. The implementation of ERP can integrate all information in the business area therefore the decision making process can be more effective and efficient, and the data errors that occur on systems that have a separate module can be minimize. The benefits of implementing ERP in a company are improvements in business performance, integrated business processes, real-time business processes, increased flexibility, and reduced costs. According to Maliszewska and Krebs (2014), the use of ERP can add value to the business and it is stated that some activities that use ERP can improve the company's performance [4]. ERP can assist companies in integrating all information from within the department or outside the department [5].

iDempiere Business Suite, also known as OSGi + ADempiere, is an opensource Enterprise Resource Planning (ERP) software. It also functions as customer relationship management (CRM) and supply chain management (SCM). Idempiere is different from most other opensource ERP solutions because iDempiere supports all forms of organization, multiple languages, and can be integrated with multiple currencies. PT. XYZ is a company located in East Java and is engaged in agroindustry that is professional, potential, and growing in Indonesia. PT. XYZ provides agricultural chemical products (agrochemicals) such as pesticides, fertilizers, and chemicals to support the agrochemical industry. PT XYZ has more than 300 employees and everyday there are transactions of employee management in the human resources and personnel division therefore PT. XYZ decided to change the manpower management process initially manually with iDempiere ERP on Human Capital Management module to support the integration of the company's business processes to be more effective and efficient. A process in managing human resources it will help to achieve the goals of the company [6]. According to Noe and Hollenback (2011), human resource management is a policy, application and system that affects employee behavior, performance and attitudes [7].

In order to implement the implementation process conducted at PT. XYZ runs smoothly and can support transactions that occur in PT. XYZ, then we compile research on design and implementation that will be done to iDempiere ERP system. In this study will be discussed further about the process of Human Capital Management with the main module of planning and fulfillment, personnel, and travel services at PT. XYZ in the ERP system to be implemented.

In order to support the implementation process and transactions that occur at PT. XYZ to runs smoothly, we compile research on design and implementation that will be done to iDempiere ERP system. This study will be discussed further about the process of Human Capital Management with the main module of planning and fulfillment, personnel, and travel services at PT. XYZ within the implemented ERP systems. Some problems that occur in PT. XYZ including:

1. Transactions on employee management in the human resources and personnel division runs every day.
2. The old system is still done manually and the data is not integrated with other departments.
3. There are a huge number of physical documents produced in certain transactions and not well organized.

1.1. The aims of this research are
1. Collect user requirements for the Human Capital Management module and identify the problems that occur in the process of human resource management along with solutions at PT. XYZ.
2. Designing blueprint business processes for human resource management before and after implementing ERP system to be used by PT. XYZ.
3. Designing and implementing iDempiere ERP system for Human Capital Management module according to the scope of research writing at PT. XYZ based on blueprint design.

2. METHODS
This research requires the appropriate sources of data and information in order to achieve the desired goals. Following is the used method:

2.1. Data Collection Method
1. Literature study used as the theoretical basis of the ERP System in order to understand the existing problems and solution to be provided.
2. Field study is used for direct observation of current business processes and data collection as the basis of this research.

2.2. Analysis Method
The analytical method used in this research is Fit Gap Analysis, which is used to perform a suitability analysis between several functions on the system running with user needs in support of the implementation of iDempiere ERP on Human Resources Management Module. System Analysis consists of several activities that allow the user to understand and specify what the new system must achieve [8].

2.3. Design and Implementation Method
To realize the on-time system development, as well as to ensure the effectiveness and efficiency of business processes within the enterprise, this research is focused on the design process according to Accelerated SAP (ASAP) method. According to Edsig (2011), the ASAP methodology will support consultants to carry out their tasks for various projects effectively and consistently [9]. The ASAP Methodology is an approach that focuses on project management, organizational change management, solution management, and application life-cycle management [10]. Design phase will use 2 (two) of the 5 (five) phases of ASAP method because this research focuses only on the Realization phase, which is used to configure and customize ERP systems in accordance with fit gap analysis document that have been designed. The result of this phase is an ERP system that ready for user acceptance testing.

3. RESULTS AND DISCUSSION
There are 3 (three) major module discussed:
1. Planning and Fulfillment
   a. Organizational structure determination
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b. Manpower requirement planning

2. Personnel
   a. Administration of Employee Data
   b. Administration of Medical Records
   c. Sanctions
   d. Employee Transfer to Permanent
   e. Rotation, Mutation, and Promotion

3. Business Trip
   a. Official Business Trip

There are some problems found in the current system on HR and General department so the company needs to implement iDempiere ERP. Once the as-is document is completely analyzed and the existing problem have been identified, the solution will be designed and referred for iDempiere ERP implementation.

<table>
<thead>
<tr>
<th>No</th>
<th>Problems</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>All units within the organization have difficulty accessing information about changes in the organizational structure because the changes are only manually recorded in the physical document.</td>
<td>Create a master data workforce Admin in IDempiere ERP to integrate all parts of the organizational structure of the company so that if there is a change then the HR and General departments only need to change the master data and automatically integrated with other module.</td>
</tr>
<tr>
<td>2.</td>
<td>The creation of documents related to events or other (such as sanctions) may refer to incorrect data due to organizational structure that is not or has not changed because the data obtained has not been updated.</td>
<td>Create a master data workforce Admin in IDempiere ERP to integrate all parts of the organizational structure of the company so that if there is a change then the HR and General departments only need to change the master data and automatically integrated with other module.</td>
</tr>
<tr>
<td>3.</td>
<td>The calculation of manpower requirement takes a very long time that can reach up to 2-3 weeks, because the calculation of the number of existing employees and the number of employees who retired at this time is still done manually and allows for miscalculations.</td>
<td>Creating window manpower planning to calculate manpower requirement per month or year according to certain job.</td>
</tr>
<tr>
<td>4.</td>
<td>The difficulty of managing physical document for employees recruitment because of the large number of employees, in addition to the risk of missing documents or can’t be found because of poor archives.</td>
<td>Creating window selection data for employee recruitment, the fields contains test result and hiring information.</td>
</tr>
<tr>
<td>5.</td>
<td>Rotation, Mutation, and Promotion records are performed separately by HR &amp; Public departments, meaning each type of them will have different documents. Rotation has its own documents, as well as Mutations and Promotions.</td>
<td>Creating window employee job data change to process rotation, mutation, and promotion directly so the data can be monitored in the same window.</td>
</tr>
<tr>
<td>6.</td>
<td>The difficulty of getting information related to employee sanction status because it is manually recorded in the physical document and the data is not real time</td>
<td>Employee sanction status will be added in the Employee Data section and status changes are made in real time through the system. In addition, the system will limit transactions that should not be made by employees who get sanctioned</td>
</tr>
</tbody>
</table>
Based on the results of problem identification and proposed solution, then fit gap analysis will be done to understand the gap between the existing system and the user requirement so the new system design can fulfill it. Following is a Fit-Gap Analysis table:

Table 2 Fit – Gap Analysis

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>User Requirements</th>
<th>Rank</th>
<th>Degree of Fit</th>
<th>Comments</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Data</td>
<td>All changes related to organizational structure can be managed within the system</td>
<td>High</td>
<td>Gap</td>
<td>Any changes related to the organizational structure are recorded manually based on the decree of the Board of Directors which has been officially inaugurated</td>
<td>Create master data related to organizational structure management to update any changes</td>
</tr>
<tr>
<td>2.</td>
<td>Process</td>
<td>Need to calculate the manpower requirement planning based on current Job for the year</td>
<td>Medium</td>
<td>Gap</td>
<td>Calculate manpower requirements manually and calculate the number of employee needed based on employee retirement data. This process takes considerable time</td>
<td>Human resource division can input the job that want to be calculated and the ideal number of employees. The system will automatically calculate the number of current employees and the number of employees who will retire of the year, then calculate the number of employees needed</td>
</tr>
<tr>
<td>3.</td>
<td>Process</td>
<td>Every employee has access to employee self service (ESS) and manager has access to self manager service (MSS) to request or approve personal activities within the company directly</td>
<td>Medium</td>
<td>Gap</td>
<td>Employee must create a request letter manually related to their personal activities.</td>
<td>Create ESS and MSS module that related to request and approval of personal activities, so employees can directly request and manager can directly approve through the system and can print reports based on the data</td>
</tr>
<tr>
<td>4.</td>
<td>Process</td>
<td>The changes of employee data related to rotation, mutation, and promotion</td>
<td>High</td>
<td>Gap</td>
<td>HR division should record changes in rotation, mutation, and promotion through excel file and they have obstacles because the data is not</td>
<td>Create window Employee Job Data Change that includes rotation, mutation, and promotion to simplify the RMP process that occurs</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Process</td>
<td>System for Employee transfer to permanent</td>
<td>Medium</td>
<td>Gap</td>
<td>Employee transfer to permanent are recorded manually using excel.</td>
<td>Create window selection for employee transfer to permanent module and included the pass score so HR department can entry the selection information and employee status</td>
</tr>
<tr>
<td>6.</td>
<td>Process</td>
<td>Request, approval, and accountability of official business trip with the system</td>
<td>Medium</td>
<td>Gap</td>
<td>Employee should make official business trip request and submit it to their supervisor manually. They should make a report after they come back. This process takes time and data found related to official business trip plan is not valid</td>
<td>Create ESS role for employee to make official business trip request and based on it, automatically the system will request a realization report. In addition, the manager can give approval using MSS role and will be followed by approval confirmation from HR department.</td>
</tr>
</tbody>
</table>

The results of fit/gap analysis will be used to design a new system in the form of to-be document and configuration of iDempiere ERP will be conducted in accordance with the to-be document that have been designed. Here are the modules:

1. Planning and Fulfillment
   a. Workforce Admin
      i. HC Organization
      ii. Ethnic
      iii. Religion
      iv. Tax Office
      v. Employee Category
      vi. Employee Class
      vii. Job Function
     viii. Job Level
    ix. HC Job
    x. HC Tax Status
   xi. HC Education Type
   xii. Sanction Rule
   b. Manpower Planning
2. Personnel  
   a. Employee Data  
   b. Medical Record  
   c. Sanction  
   d. Selection Data  
   e. Employee Job Data Change

3. Business Trip  
   a. Request/Approve Travel  
   b. PJK Request Travel

The implementation process for iDempiere ERP system will be done sequentially from Project Preparation phase until Go-live support. User requirement and the understanding of current business process must be clear before the design phase, because the changes of user requirement in the design phase will disrupt the planning that has been agreed. All application dictionaries should be moved to production server and master data so the realization phase running smoothly. Data migration will be done after all data are provided in both Microsoft excel (.xls) or can be directly input into the system. If using a file in .xls, then the data will be uploaded into the related master data window.

Detail of data transfer process is as follows:

1) Transfer of all application dictionary HCM module to production server

Process of transfer application dictionary from dummy server to production server will be conduct with Pack Out to generate file export menu and Pack In to insert the menu that has been export from dummy server to production server, this feature is available in iDempiere ERP (see figure 1 and 2).

![Figure 1 File Export that has been generated by Pack Out](image1)

![Figure 2 Window Pack In](image2)
2) Configuration for Process and Report

Configuration for process and report is conducted directly in iDempiere ERP through window Report & Process by using role system administrator. The creation of process is conducted by filling classname in the window Report & Process, while there are two ways for create report: Report view (create report from iDempiere) or jasper report (create report by using iReport application). See Figure 3 and 4 for the example.

![Figure 3 Configuration Process](image1)

**Figure 3** Configuration Process

![Figure 4 Configuration Report with Report View](image2)

**Figure 4** Configuration Report with Report View

3) Transfer master data

Transfer of master data is conducted manually with entry data directly to iDempiere ERP. The following is the example for HC Organization.

![Figure 5 Data of Human Capital Organization](image3)

**Figure 5** Data of Human Capital Organization
4. CONCLUSION

The subject of this research is a growing Agroindustry company in Indonesia. Accelerated SAP (ASAP) method is used as research methodology, consist of 5 (five) phase: Project Preparation, Business Blueprint, Realization, Final Preparation and Go-Live Support. However this study is limited only discuss related to Business Blueprint and Realization. The process of HCM module is included: Planning and Fulfillment (related to the preparation of organizational structure and manpower planning), Personnel (employee data administration, sanction, record medical, pedagogical, rotation, promotion, and mutation), and the Business Trip. Implementation of iDempiere ERP system is expected to solve the problems often faced by users and can meet their needs, such as the process of employee transfer to permanent which is now the calculation of its employees number can be done in the system through manpower planning, The record of organizational structure is integrated in the Employee Data and it became master data so the data clear and accessible, The record of Rotation, Mutation and Promotion can be separately, and the related human resource data integrated with other modules in the system.

Some suggestions to improve system performance, as follows:

1. Recruiting IT Team as internal IT consultant to handle system administrator iDempiere ERP such as configuration and routine maintenance after system go-live.
2. Create notifications feature that automatically will be sent to user email for request or approval process
3. Develop mobile application platform that integrated with iDempiere ERP to support Employee Self-Service and Manager Self-Service through smartphone

REFERENCES

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