Zachman Framework Approach for Designing Recruitment System Modules in HRIS Application (Case Study in PT. Karya Impian Teknologi Abadi)

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Abstract— The new employee recruitment system is part of the HR department's work at PT. Karya Impian Teknologi Abadi that is crucial to do and needs to match the candidate's ability and speed in the recruitment process. The candidates also need information on the company's positioning requirements and the stages of the process applicable to the recruitment process and the clarity of acceptance if appropriate to the needs of the interview user. This requires designing an HRIS application to address this problem using the zachman framework. With this method will be made in a matrix that will be viewed from the perspective of HR Manager and IT Manager.

Keywords— Zachman Framework, HRIS, HR Department, HR Manager, IT Manager.

I. INTRODUCTION

The need for employees that have good skills are desirable by many companies, in addition to the required technical skills required also good personality skills. PT. Karya Impian Teknologi Abadi as know KITA needs to apply hiring process to get the best candidate through interview process after undergoing technical test and personality test. After that will be a process of salary negotiation that the end result is the signature of the contract work, Using an online e-Recruitment system may potentially save the employer time as usually they can rate the e Candidate and several persons in HR independently review e Candidates The applicants send their resumes via social networking sites that help in paper less recruitment process in human resource functions[1]. The candidate must do the company process; the ideal recruitment effort will attract a large number of qualified applicants who will take the job if it is offered[2]. So KITA need to improve base on technology for this hiring proses focus on module hiring in the HRIS Application.

A. Research Problems

Based on the introduction described in the previous section, in this section the research problem is taken on how to design the recruitment system module in the HRIS application with the zachman framework approach and how to map the design in the Zachman framework matrix.

B. Limitation of Research

Here on below, there are some limitations that need to be considered so that the discussion is not widespread or widened and so the discussion is not too far from relevance so that research can be more focused to do.

In this study the method used only to compile the recruitment system module
1) Objects of this study at PT. Karya Impian Teknologi Abadi in Jakarta
2) Data of this study used only with drawings and tables
3) The results of this study are for design only

C. Purpose And Objectives

The purpose of this research are for design the recruitment system module in the HRIS application with the Zachman framework approach and mapping the design in the Zachman framework matrix.

II. THEORY FUNDAMENTAL

Once we know the problems and limitations of this research that have been described earlier, so the authors use the Zachman framework theory to design the recruitment system module, which is described below:

Figure 1. Framework Zachman

The Zachman Framework for Enterprise Architecture is a widely used approach to developing or documenting the architecture of companies. Based on the framework Zachman practiced in architecture traditional and engineering. The Zachman framework is a very logical structure of organizing and classifying the various elements of a significant organization of the management and development of its organizational information system[3]. And other define are columns in the matrix to describe the data, function, location (where business resides), the people who should be there and engage in the organization, the time for the events to occur, and the motivations that determine how the business goes. Then, on the line described the aspects of development process are: scope, business model, information system model, technology model, component model, and system functions. Zachman Framework describes the organization's architecture in general and describes it as a complex enterprise system. In the business world, organizations will be required to manage change. The goals of change management are related to the competitive advantage between the organization and its competitors. Zachman Framework was introduced as a standard that has been used by successful organizations of the world. For example: Johnson and Johnson, Federal Express, Hewlett-Packard, Microsoft, and others[4].

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III. METHODOLOGY

In doing this research the authors take steps taken systematically so that what is desired can be achieved. Figure 2 is the steps undertaken by the author of conducting this research.
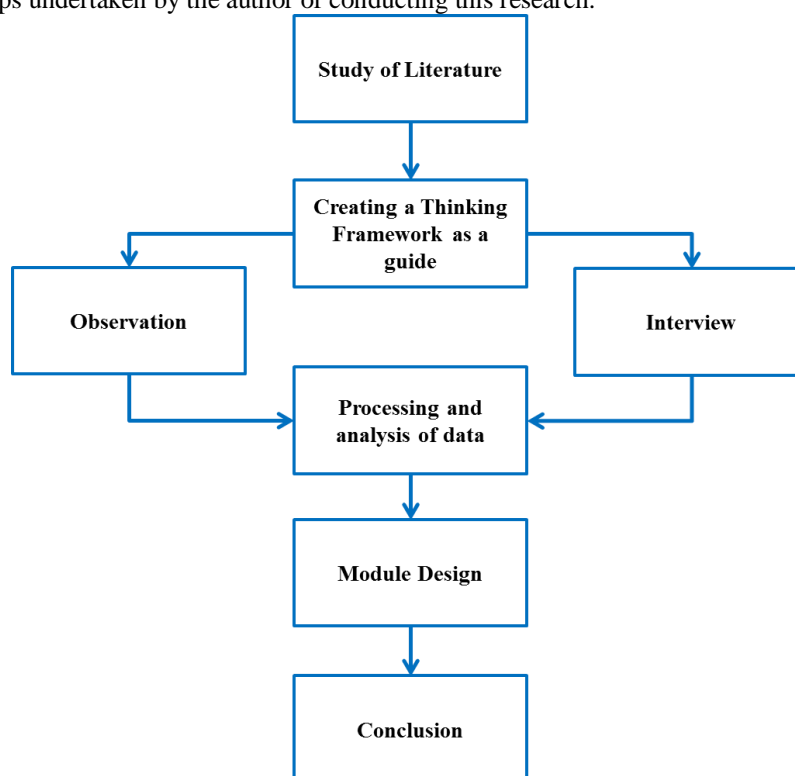
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          │  Study of Literature │
          └──────────┬───────────┘
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   ┌──────│ Creating a Thinking  │──────┐
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│ Observation  │              │  Interview   │
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              │  Conclusion  │
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Figure 2. Stages of Research

From figure 2. detail information of this research [5]:

1) **Study of literature**: At the beginning before the study was conducted, the authors conducted a literature study related for the design of module recruitment system in particular using Zachman framework.

2) **Creating a Thinking Framework as a guide**: This stage will be the preparation of Framework of Thinking in research. Preparation of the Thinking Framework is made with Zachman's framework. The Zachman framework is a framework that will guide the design of recruitment system module.

3) **Observation:** Observational methods used by researchers to obtain data that cannot be explained through interviews.

4) **Interview:** This method is used to collect information relating to data, employees, and processes in the design of recruitment system module.

5) **Processing and Analysis Data:** The data that have been obtained from the interview and observation is processed as an ingredient in designing the recruitment system module. The data obtained is data onto the process of receiving new employees used matrix zachman.

6) **Module Design:** The data that have been obtained are then analyzed in order to obtain the recruitment system module design in the form of flowmap, use case, Activity diagram, and recruitment flow.

7) **Conclusion:** This stage is a summary of the results of data collection and analysis of the design of recruitment system module

The main result will be explain on Matrix Zachman with perspective owner (HR Manager) and planner (IT manager). Whenever explain from John Zachman introduced the concept of Information System Architecture (ISA) in 1987 (Zachman 1987). The Zachman framework describes stakeholders' views focusing on five Wh-interrogatives ('what', 'who', 'where', 'why', and 'when') and one H-Interrogative ('how'). This focus comes from journalism's W5H theory. Zachman framework consists of two dimensions: views of a particular stakeholder group of the enterprise from a particular perspective and the description of these views. The description information is gathered by answering six out of the seven English language interrogatives ('what', 'how', 'where', 'who', 'when', and 'why'). Zachman argued that answering these interrogatives from the view point of Owner, Designer, Builder and Sub-Contractor enables the development of Information System Architecture (ISA)[6].

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IV. RESULT AND CALCULATION

In this section will explain the results of the research in the form of a matrix for design the recruitment system module which viewed from the perspective of owner and planner, can be seen the result on below:

Table 1. Perspective Owner and Planner with Matrix Zachman

Perspective	Owner – HR Manager (Business Model)	Planner – IT Manager
Asset Data (*What*)	Hiring Process	Server, Database, and Resources
Motivation (*Why*)	Purpose of Recruitment System Module	purpose of enterprise application development needs
Function Process (*How*)	Use Case Diagram	Activity Diagram
People in Charge (*Who*)	Recruiter and Applicants	Operator CRM Module
Location (*Where*)	Core System Application	HRIS Application
Time (*When*)	Project Duration	Time Schedule

Table 1 shows the design for the recruiting system module by the zachman method. Basically Zachman has drawn on the disciplines of architecture and engineering to derive a framework for IS architecture which basically contains the categories what, how, where, who, when, and why (a set of descriptors which appear to have been borrowed from Kipling). Zachman discusses in some detail the descriptors what, how, and where to categorize different IS architectures and suggests that these are independent but "inextricably linked," and suggests that, for the sake of logical completeness, these should be complemented by who, when and why (Zachman 1987; Sowa and Zachman 1992). Interestingly, Zachman concluded the 1987 paper by suggesting that the framework could be used in a number of areas, including to rethink the nature of software development [7]. A detailed explanation from owner and planner perspective will be explained on below:

A. Asset Data (What)
1) Owner Perspective
In the view of the owner, the recruitment of new employees is described in the process below:

Figure 3. Hiring Process

2) Planner Perspective
On the side of the planner there are 3 perspectives in implement internal data center which are: Data server is about the Server used as research object; currently using Lenovo System x3650 M5, Intel Xeon processor E5-2600 v4, 16 GB RAM, IBM 1TB 7.2K 6Gbps NL SATA 2.5in G3HS HDD, Windows Server 2008 R2. Database, is data about database used as research object; current database used SQL Server 2008 Standard.

B. Motivation (Why)
1) Owner Perspective
In this section the motivation of the Owner wants the addition of a Recruitment Module system that aims to facilitate the process hiring and analysis of appropriate applicants to occupy the position offered.

2) Planner Perspective
In accordance with the perspective of the Owner, as a planner motivation is an application that is made in order to improve the previous application as well as a good business process for the company.

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C. Function Process (How)
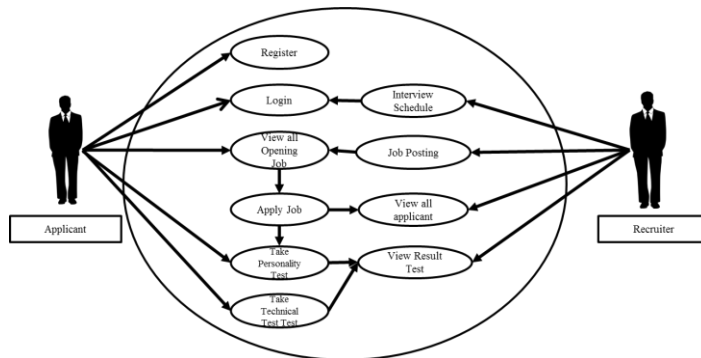1) Owner Perspective

Figure 4. Use Case Diagram

Figure 4 show use case between applicant and recruiter interact in the application, there are several module in application and recruiter as a communication to accomplished the hiring process.
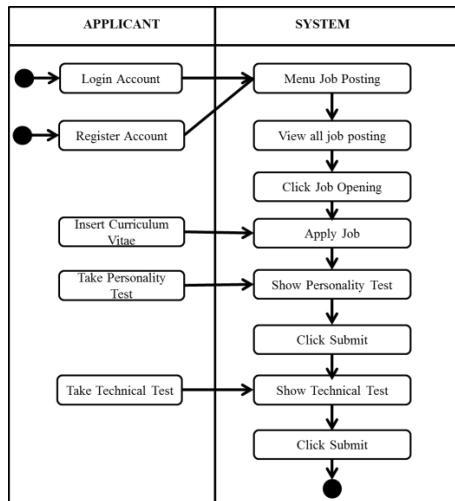
2) Planner perspective

Figure 5. Activity Diagram Applicant to System

Figure 5 show activity applicant to system, from applicant side applicant need to login or register their account to continue the process hiring. They can see the job posting in the application area, applicant need to insert curriculum vitae, take personality test, and take technical test before their submit. Therefore the recruiter side show on below :
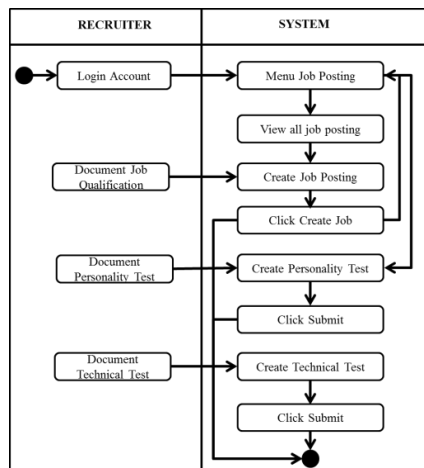

Figure 6. Activity Diagram Recruiter to System

Figure 6 show recruiter to system, recruiter need login account to view menu job posting, they can create new job posting with inserting document job qualification, then the system need to create personality test and technical test with inserting the document, then submit to the system. Meanwhile the system and user do their job, the recruitment need to see the summary the applicant in system area, show on below:
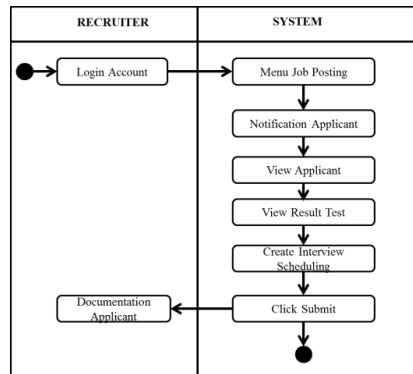

Figure 7. Activity Diagram Recruiter Quick View

Figure 7 show recruiter need to quick view the result from applicant to arrange the interview schedule. For the best candidate recruiter need to check the result test overall candidate and recruiter must be consider the score from test and interview for the next step.

D.   People in Charge (Who)
1)   Owner Perspective
In this section anyone who is assigned to operate this application is HR manager.

2)   Planner Perspective
In this section anyone who is assigned as an operator on the recruitment system module is the IT Manager. Operator will help the system troubleshooting and prevent from system malfunction.

E.   Location (Where)
The location for implement this application, from owner and planner agree to implement in internal data center they planned before.

F.   Time (When)
1)   Owner Perspective
In this section explains the perspective of the owner in the implementation, which is expected to be done for 1 month in January 2018.

2)   Planner Perspective
This section describes the proposed time schedule in the design of the recruitment system module:

Table 2. Time Schedule

Activity Name	January			
	w1	w2	w3	w4
Initiation for Gathering Information				
Design UI Application				
Development Frontend and Backend				
Testing and *Go Live*				

Table 2 show time schedule for develop this application, in first week IT Planner need 1 week to initiation for gathering information for clear the scope of work, then IT Planner need to design the UI Application in it takes 2 weeks from first week, then need to develop Front end and Back end the application from week 2 until week 4 and for the last need to testing and go live in week 4.

V. CONCLUSION

In the application of Zachman Framework method how to design the system recruitment module there are 6 columns of perspective of the owner as HR Manager and planner as IT Manager which must be explained to support the system recruitment module in Human Resource Information System application according to

Zachman Framework method that is what , why , how , who , where , time and this research produced the design of application modules that can provide solutions to problems in the process of system recruitment in the form of zachman matrix and recruitment process which facilitate applicant to perform hiring process quickly and easily.

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