HR Competency Mapping Model with Zachman Framework for Implementation of Competency

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Abstract: *As a new company in financing and Islamic guarantee aspects, has a big and promising market potential, it is needed not only for the competence of this business, but also other competencies related to marketing and also Islamic business. The need to build and manage an optimal employee competency is a must to ensure the success of enterprise. To that end, a dynamic competence development strategy has been implemented, which implements the management of competencies that are integrated with dynamic business processes and supported by an integrated information system. The strategy developed is expected to help companies find alternatives and problems and support the decision-making process. The fit strategy is expected to be able to predict what the strengths and weaknesses of the company. In this research used Zachman Framework method to analyze the competency. By using Zachman Framework can be obtained in detail information how to analyze the competence of the company. Software used to assist the use of Zachman Framework in this research is Rational System Architecture (RSA). The results of this study are reference data generated to support IT where the Zachman Framework will be implemented in a system used in enterprise.*

Keywords: Information System, Islamic business, Rational System Architecture

1. Introduction

Along with rapid technological developments, almost all companies, utilizing information technology to run business processes in order to remain competitive in the business world. This is generally done to improve business quality and customer satisfaction [1]. So it is expected to improve company performance.One of the main strategies that are generally developed by the company is to build competencies that are in line with the field of business. Competence is the personal aspect of an employee that enables the performer to achieve superior performance. Personal aspects of employees include the nature, motives, value systems, attitudes, knowledge, and skills[2]. These things are needed by the Organization, namely the support of competent human resources (HR). In accordance with its vision and mission, this company implements Islamic aspects in running its business, which is the first company in Indonesia based on Islamic business in this business field. This has been of particular concern to the management of the company, as the opportunity, as a new company, and to maintain this competitive advantage, as well as a large and promising market potential, is required not only by competence in the field of business but also other competencies, which deals with marketing and Islamic business.

Currently, this company has a list of competencies obtained from the competence consultant but the book is produced when the organizational structure of the company runs (years) and has not changed. Therefore, because the organizational structure of the company continues to change, the book becomes not optimal. The problem studied is how companies can implement the list of competence books by considering how to manage organizational changes that will be in the future?

The purpose of this study i mapping is create reference data from the existing competency dictionaries for use in competency-based IT applications. This study is expected to optimize the integrated information system in the company in managing the competence of office following the development of the organizational structure. Where this is expected to increase trust and confidence in the management of Islamic Company, especially in business development and business competition, both within the SMEs, as well as the scale of the company.

This study focuses on a book of competency dictionaries owned by company by considering the current organizational structure, the use of the Zachman Framework in mapping the results of the company competence dictionary book, the application of Zachman Framework mapping results into the form of reference data required for IT-based competency applications.

2. Literature Review

2.1 Competency

The individual characteristics are hidden and invisible, the competence is often depicted in the form of iceberg model (Ice Mountain) which has visible tops and underscores [3]. The visible part is a reflection of knowledge (knowledge) and skill (skill). Both of these aspects are hard competency images that are considered to be easily observable and easily formed. While the part that is not seen is a soft competency that is considered difficult to develop.

2.1.1 Zachman Framework
The Zachman Framework classifies the descriptive representation of enterprise information architecture into cells based on perspective and focus. Each of these focus questions occupies a column in the Zachman Framework [5]. Perspective defines the point of view or level of abstraction of information contained by a cell in the

Zachman Framework. This perspective occupies a line in the Zachman Framework. In general the perspective can be divided into six lines: The Planner Perspective (Scope Context), The Owner Perspective (Business Concept), The Designer Perspective (System Logic), The Builder Perspective (Technology Physics), The Implementer Perspective (Component Assemblies) , and Functioning enterprise. The description of the columns in the Zachman Framework representing the six organizational aspects is What (data), How (function), Where (networks), Who (people), When (time), Why (motivation) [6].

Zachman Framework's advantages are relatively simple, directing the company into a comprehensive way and able to manage the architecture for individual and departmental divisions, using non-technical languages used to help understand broad issues, help solve design problems, be applicable to many different information systems topics ,, provides a variety of tools and extensive methodologies. While the lack of Zachman Framework is a difficult documentation for the 36 cells that exist in Zachman Framework, the reality is that not all cells in the Zachman Framework can be implemented, This approach is relatively new.

2.1.2 Rational System Architect

To assist data processing in this research, used a software tool called Rational System Architect (RSA). This software is used to assist in visualizing, analyzing and communicating the company's business architecture and its analytical process. Specifically the program applies the Zachman Framework to the analysis of information and describes the results of its analysis, in which the data collected is entered according to the cells in the Zachman Framework. This RSA program will be able to assist and support Business Analyst decision making to do the optimization process, and integration becomes a solution.

3. Data Source Method

3.1 Type of Data Source

The required data are primary and secondary data. Primary data includes information from the leadership (direct supervisor) is used to gain views of the management side about employee competence. Secondary data in this study include information related to company characteristics that include the number of employees, employee evaluation data, and others.

The research design uses qualitative methods through exploratory techniques with in depth interview techniques with resource persons from companies and FGD with expert teams aimed at obtaining a comprehensive picture of the competency mapping to be applied in company. The results of data obtained from the company needed for the use of framework to understand various information within the company in applying competency mapping.

3.2 Framework Method

The method used in this study is the Framework Zachman is a framework to classify the descriptive representation of enterprise information architecture into cells based on perspective and focus. Perspective defines the point of view or level of abstraction of information contained by a cell in the Zachman Framework[7]. Perspective consists of planner, owner, designer, builder, and programmer. Columns of the Zachman Framework are the different focus or product abstractions (What / Data, How / Function, Where / Network, Who / People, When / Time, and Why / Motivation) from a perspective (Picture 1). Each focus raises a question, the way the question is answered depends on perspective.

	DATA *What*	FUNCTION *How*	NETWORK *Where*	PEOPLE *Who*	TIME *When*	MOTIVATION *Why*
Objective/Scope (contextual) *Planner*	List of things important in the business	List of business process	List of business locations	List of important organization	List of events	List of business goal & strategies
Enterprise Model (conceptual) *Owner*	Conceptual data/ object model	Business process model	Business logistic system	Work flow model	Master schedule	Business plan
System Model (logical) *Designer*	Logical data model	System architecture model	Distributed system architecture	Human interface architecture	Processing structure	Business rule mode
Technology Model (physical) *Builder*	Physical data/class model	Technology design model	Technology architecture	Presentation architecture	Control structure	Rule design
Detailed Reprentation (out of context) *Programmer*	Data definition	Programs	Network architecture	Security architecture	Timing definition	Rule speculation
Functioning Enterprise *User*	Usable data	Working function	Usable network	Functioning organization	Implemented schedule	Working strategy

Picture 1: *Zachman Framework – Collage of Zachman Frameworks as presented in several books on Enterprise Architecture from 1997 to 2005.*

4. Result

The organizational structure of this Islamic Company consists of several departments: Internal Audit, Risk Management, Operation, Marketing, Product Development, Information Technology, Finance and General, Human Resources, and Regional. In this study, the use of Zachman Framework will only refer to the HR division, which describes the use of Zacman Framework for a descriptive representation of one of the enterprise information architectures, namely competence. This study shows, the relevance of business process competence and role (role) in the company. This research begins by analyzing company's corporate condition.

The description of the columns and rows that Zachman's framework is used to analyze the competencies are as follows:

1) Column What (data)
a) The Planner Perspective (Scope Context)

In the perspective of planner, what column is limited to the scope of system builder or business actor owned by company with entity relation diagram.

b) The Owner Perspective (Business Concept)

Explaining the concept of the relationship between business classes with business functions produce semantic models. At this stage used entity relation diagrams, use case diagrams to illustrate conceptually from the owner's perspective.

c) The Designer Perspective (System Logic)

This stage shows the relationship between classes which will be designed attribute method that will be owned each class to show the logical data model of the system with entity relation diagram.

2) Column How
a) The Planner Perspective (Scope Context)

This stage draws the function of existing business process with functional hierarchy diagram.

b) The Owner Perspective (Business Concept)

In the perspective of business process owner described more conceptually specific with business process diagram and functional hierarchy diagram.

c) The Designer Perspective (System Logic)

This stage contains a list of actions taken by officials and employees of company who are described with use case diagrams and detailed in activity diagrams for each actor.

4.1 Existing Condition Analysis Competency

4.1.1 Use of Role Matrix vs Actor in analysis with RSA program

The use of RSA programs in analyzing the Zachman Framework uses the term Actor and Role (Picture 2), where the Actor consists of one or more Roles. The actor in the RSA program represents a employment within company while the Role represents the role performed by the holder of office. Role plays several processes owned by a employment on a work unit in the company.

In describing the matrix generated from the RSA program, a "X" sign is used in connecting the rows and columns of each cell to indicate a relationship between the two definitions. The existence of the relationship is indicated by the "X" in the cell that intersects the two definitions and if the cell is empty then the two definitions show no relationship. Role matrix representation with Actor shows the number of Roles in accordance with the Actor in the company especially the field of human resources.

Role \ Actor	Dept. Head Administrasi SDM	Dept. Head Pengembangan Pelatihan	Div. Head SDM	Staf Payroll	Staf Pendidikan & Pelatihan	Staf Rekrutmen	Unit Head Administrasi SDM (Payroll)
Manajemen SDM			X				
Melaksanakan fungsi administrasi SDM							X
Mengelola pendidikan dan pelatihan		X					
Menjalankan proses administrasi SDM				X			
Menjalankan proses pendidikan dan pelatihan					X		
Menjalankan proses rekrutmen karyawan						X	
Pengelolaan administrasi karyawan	X						

Picture 2. Competency vs Actor Matrix

4.1.2 Employment Competency Analysis
To determine the competence of employments required by company, analyzed the employment of a person with the required competence, then company form a competency dictionary with the help of consultants. But due to several things, such as a relatively new company, organizational

structure is not yet well established, employments are still a lot of blank in the organizational structure, mentoring consultants who have not directed, and time constraints in forming dictionary competence desired.

There were several mapping vacancies in competency mapping books produced by consultants at the time. The void of competency mapping (Picture 3) that occurred in the mapping of employment and competence at that time, which is not detected by this company. This vacancy occurs in the structure of employments within the HR environment.

Actor \ Competency	[H] Cara mengisi SPT	[H] Komunikasi	[H] Leadership	[H] MS Office	[H] Melakukan interpretasi dasar hasil tes	[H] Menghitung lembur	[H] Menghitung pajak penghasilan	[H] Mengoperasikan alat tes	[H] Menyusun strategi SDM	[H] Pengaturan jadwal pelatihan	[S] Analytical thinking	[S] Customer oriented	[S] Kemampuan berpikir konseptual	[S] Logika berpikir	[S] Networking	[S] Team work	[S] Teliti terhadap detail	[T] Alat tes	[T] Analis jabatan	[T] Aturan BPJS ketenagakerjaan	[T] CBHR	[T] Evaluasi program pelatihan	[T] Legal knowledge	[T] Man power planning	[T] Manajemen SDM	[T] Manajemen pelatihan	[T] Manajemen strategik	[T] Penganggaran program pelatihan	[T] Perancangan program pelatihan	[T] SOP kepersonaliaan	[T] Syariah insurance	[T] Tax (PHP)	[T] Training need analysis	[T] UU No 13 tahun 2003 tentang ketenagakerjaan	[T] UU perselisihan hubungan industrial	[T] Work load analysis
Dept. Head Administrasi SDM																																				
Dept. Head Pengembangan Pelatihan																																				
Div. Head SDM		X	X						X		X		X						X					X	X	X	X				X		X		X	X
Staf Payroll	X	X				X	X			X				X		X			X												X		X	X		X
Staf Pendidikan & Pelatihan			X							X			X									X						X	X			X				
Staf Rekrutmen			X					X						X	X																					X
Unit Head Administrasi SDM (Payroll)																																				

Picture 3: Competency vs Actor Matrix (from consultant book)

4.2 Results of Data Processing Analysis

In the analysis, consider the types of competencies required in the vacant HR employment and the suitability of the roles performed by the employment. The process of selection of competence is done by the stages of literature study, comparative companies that have the same marketing environment (insurance company), the adjustment of competence with Standard Operating Procedures (SOP) and Key Performances Indicator (KPI) of the applicable company, consideration of circumstances from external environment such as policy governance and internal such as company regulations, expert team discussions, use of RSA programs in conducting competency analysis with data that can be used to improve and develop competency mapping based on the task / role of someone's employment.

The next analysis conducts FGDs to complement the competencies of each new employment occupied in the company. FGD methods conducted on the preparation of the competence of human resources units, and the use of RSA tools have become essential activities to collect and analyze all information related to the competencies required by the HR unit. FGD method in determining competency requirement can also be known as expert panel. Persons who can be a resource person in the implementation of an expert panel are those who have held or overseen a employment or are considered to know about tasks related to the employment. The objective of filling the competency of Human Resource Unit at company is very wide, where all aspect or all functions are expected to have a role in implementing it, then the team members included should represent every function in company.

Matrix created on the preparation of this competence is the need for competencies that are adjusted to the employment in company. In addition, FGD analysis and analysis using secondary data or information related to the competence of the company, namely the role performed from the employment. The roles performed by the employments are analyzed and adapted to the required competencies.

The types of competencies set out in this matrix are derived from the results of studies, reference discussions, benchmarks, and from consideration of existing competencies. After obtaining the type of competence, then further discussion to be integrated with existing human resource group. The discussion aims to determine the type of competence required for each employment (Picture 4).

Picture 4: Competency vs Actor Matrix result from FGD

5. Conclusion

1) Making competence mapping in the form of a book is not practical to implement, because it can not see how the competency mapping is directly, the use of Zachman Framework facilitate the analysis and implementation of the book .
2) Human mapping competence with Zachman Framework should describe in detail the rows and columns that exist in the Zachman matrix, in order to obtain the picture of the company's human resources competence intact from various angles.
3) Use of Zachman Framework can analyze the required company conditions in detail. Zachman Framework analysis can help companies have a well-integrated information system base through IT-based tools to support the company's operations more practically and well.

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