DEVELOPMENT OF MANAGEMENT INFORMATION SYSTEM HUMAN RESOURCE AT PT.TRAVELAND CONVEX INDONESIA

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ABSTRACT

PT. Traveland Convex Indonesia is a travel agency engaged in MICE and Tour and Travel. The company has five divisions: Accounting, Marketing, MICE, Tours and Travel and IT division. Based on interview results. The recruitment process takes a long time. Because the recruitment time required longer vacancy positions in the company so that the company's operations are hampered.

Assessment is done by clarity by looking at the performance of daily employees and lack of absences that have not been maximized in the implementation, the solution is the assessment by using the calculation by the method of SAW (Simple Additive Weighting). The concept of the SAW (Simple Additive Weighting) method is to find the weighted sum of the performance of each alternative on all attributes. The problem is also found in the decision of leave, the manager of accounting trouble doing the leave control for employees who take time off simultaneously. For retirement will be samp.

To overcome these problems then built human resource management information system. Method planning process, Perform, Check, Act). The tests performed are Blackbox for the funcsional test of the system, Beta and User Acceptance Test. From the test that has been done results.

Keywords: Management Information Systems, Human Resources, Assessment, SAW (Simple Additive Weighting).

1. INTRODUCTION

PT. Traveland Convex Indonesia is a travel agency engaged in MICE (Meeting, Incentives, Conference, Exhibition) and Tour and Travel. Based on interviews with Mrs. Ucu Lidaningsih which handle the human resource activities, Employee recruitment is done when vacancy occurs or when additional labor is needed. Mrs. Ucu Lidaningsih Declares that, The number of employee needs and criteria are not in accordance with what is required by the company. Vacancies are opened within two weeks, employee recruitment is matched against the criteria set by the company, but not all applicants have the criteria that match the set.

Another problem is on the performance appraisal of employees, the assessment is done within a period of one year, the assessment is done by way of estimation. The problem is also found in the leave control, often the employees take leave beyond the specified limits and also at the same time so that accounting manager difficulties in performing leave control for employees who take time off simultaneously.

Based on the problems above, The Goals to be achieved on the research and development of management of human resource information systems are:

1. Assist accounting manager handles the recruitment of employees in determining the amount and the criteria of the required employee so that no vacancy position in a long time.
2. Assist accounting manager in conducting employee performance assessment so that it is easier in taking decisions and conducting an assessment based on the criteria in accordance with the company.
3. Assist accounting manager in the control of leave employees.

2. CONTENT OF RESEARCH

2.1. Management Information System

Management information system is a system of information in addition to doing all the processing of transactions that need to be an organization, also gives support and information processing for management functions and the taking of the decision. The idea of an information system that existed before the advent of the computer.

Organizations always need systems to collect, process, store, look back, and transmit information. Management information system is described as a pyramid, which essentially consists of information for oengolahan transactions, status descriptions, and so on. The next layer is composed of information

resources in support of information in support of the daily operations management[1].

2.2. Management Information System Human Resource

Management Information System is the Human Resource information system to support the activities of the managers in the human resources function. This function was formerly called function or the personnel department. Now was renamed the human resources function to indicate that the people in the Organization are an important economic resource[2].

Six groups of output can be generated by the human resources information system, namely:

1. Information-information about workforce planning.
2. Information-information about the procurement of labor or recruitment.
3. Information-information about the management of the workforce.
4. Information-information about compensation.
5. Information-information about benefits.
6. Information-information about the work environment.

2.3. Simple Additive Weighting (SAW) Method

SAW method known as the weighted sum method. The basic concept of the method is to find a weighted summation of the SAW of rating performance at every alternative of all attributes (Fishburn, 1967). The basic concept is to find a weighted summation of the SAW of the performance of each alternative on all attributes. The method of matrix the normalization process requires SAW decision (X) to a scale that can be compared with all the alternative rating[3].

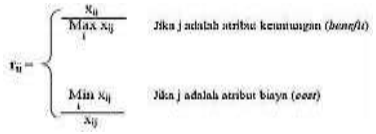


Figure 1 The formula of SAW (Simple Additive Weighting)method

Where :

R_{ij} = Normalized performance rating score
X_{ij} = Attribute value of each criteria
Max x_{ij} = The greatest value of any criteria i
Min x_{ij} = The smallest value of any criteria i
Benefit = The best greatest value
Cost = The best smallest value

Where r_{ij} is rating the performance of ternormalisasi of alternative Ai on attribute C_j: i = 1, 2, ..., m and j = 1, 2, ..., n. the value of preferences for each alternative (Vi) provided as follows:

Vi = value of prefensi
wj = weighted rank
rij = Rating of normalize performance

2.4. The analysis of the PDCA (*Plan, Do, Check, Act*)

PDCA is an iterative four-step problem-solving process commonly used in quality control[4]. Analysis of PDCA process includes recruitment, employee performance appraisal process, the process of recruitment, and the process of granting leave. The following is the PDCA cycle (Plan, Do, Check, Act) is applied to the management information system of human resources at PT. Traveland Convex Indonesia.



Figure 2 Siklus PDCA

2.4.1. Analysis of PDCA Recruitment Planning Process

1. *Plan*

At this stage it does is Specify how many vacancy happens in the company. The following is a data monitoring employees period in 2016. Next IT will ask division manager FPTK to accounting manager, then determined the requirements for the post of staff IT, here is the criteria for an IT staff can be seen on the chart.

Table 1 Selection Criteria

Criteria	Requirement
The Level Of Education	D3/S1
Experience	Min 1 Tahun
Department	Teknik Informatika
Age	Min 21 Maks 35 Years old
Gender	Male / Female

2. *Do*

This stage is the stage of the application or implement all planned in phase plan included running the process. Based on the existing vacancy manager Division filed the FPTK to Accounting manager, next will open job vacancies in accordance with the criteria

3. *Check*

This stage will check the results of the previous stage. The accounting manager will check for recruitment planning, if planning has been approved by the president director then the procedure will proceed to the next procedure of hiring procedure.

4. *Act*

This stage is the stage to take action whether the results that have been obtained at the previous check stage is in accordance with the initial planning. If at the stage of the existing planning check has been met then it will proceed to the next stage of the recruitment phase. The recruitment process consists of psychological tests and interviews.

2.4.2. The analysis of PDCA Recruitment Process

1. *Plan*

The first stage in the recruitment process is to determine the criteria and the weight of the appraisal at the time of employee selection and then make the job vacancy. If the application file submitted in accordance with the requirements of the company then will go to the next stage of the psychological stage. Applicants who are in accordance with the criteria for IT staff will then be called for the implementation of the psychotest. After doing psychotest then the next will be test interview. For the calculation of the final value of the psychotest is by multiplying the amount of IQ obtained by 40%.
While for the final result of the interview is to multiply the amount of value gained during the interview with 60%. Here are the criteria used to conduct an interview assessment.

Table 2 Selection Criteria for Recruitment Interviews

Kriteria	Inisial
Penampilan	K1
Keterampilan Komunikasi	K2
Keterampilan Bahasa	K3
Keterampilan interpersonal	K4
Inisiatif	K5
Motivasi	K6
Koperatif	K7

2. *Do*

At this stage the process of recruitment and selection of employees, From the data of applicants who entered selected some applicants who will be called to conduct psychotest and interview test. Here is a table of results Psikotes.

Table 3 Psikotes Result

No	Nama Pelamar	IQ	Tipe IQ	Nilai Akhir
1	Elisa Khaeru Rizqa	101	*Average*	40,4
2	Hardi Pratama	112	*High Average*	44,8
3	Ali Sanjaya	99	*Average*	39,6
4	Gunawan	100	*Average*	40
5	Bambang	98	*Average*	39,2

Here is a table of interview results:

Table 4 Interview Result

No	Nama Pegawai	Nilai	Nilai Akhir
1	Elisa Khaeru Rizqa	26	15,6
2	Hardi Pratama	30	18
3	Ali Sanjaya	27	16,2
4	Gunawan	29	17,4
5	Bambang	28	16,8

3. *Check*

The check stage is the examination and review stage as well as studying the results of the implementation at the stage do. This stage will check the results of the previous stage.

4. *Act*

This stage is the stage to take action whether the results that have been obtained at the previous check stage is in accordance with the initial planning. When the recruitment phase has been implemented, and after comparison between the criteria or requirements to fill vacancies Position with criteria of applicants who come at the Check stage the results according to need.

2.4.3. The Analysis of PDCA Employee Appointment Process

1. *Plan*

At this stage the planning for the long work of contract employees. The period of employee contract is divided into 2, namely the first contract period is for 3 months and the second contract period is for 2 years. As long as the contract employee does not resign and get into trouble then the contract employee will be appraised as a permanent employee.

2. *Do*

At this stage, the appointment of contract employees to permanent employees. Employees who have entered the second contract period for two

years will be directly appointed as long as not resign and have no problems. Furthermore, the contract employee will sign the contract and the contract employee will be appointed permanent employee.

3. *Check*

The check stage is the examination and review stage as well as studying the results of the implementation at the stage do. Inspection stage Appointment of contracted employees to permanent employees hence the status of contract employees will be changed to permanent employees and employees whose contract period has not reached two years has not been appointed permanent employee.

4. *Act*

This stage is the stage to take action whether the results that have been obtained at the previous check stage is in accordance with the initial planning. At this stage an action is taken for the contract employee who is appointed to be a permanent employee.

2.4.4. The Analysis of PDCA Performance Appraisal Process

1. *Plan*

Plan the assessment criteria along with its weight and time to conduct an employee performance appraisal. Assessments are made for employees in the MICE division. Assessment to be conducted once a year, the results of performance appraisal of employees in the form of the order of employees with the best assessment results to employees with the results of the assessment is less satisfactory. The calculation of employee performance appraisal using Simple Additive Weighting (SAW) method Here is a suggestion of the work assessment guidance.

Table 5 Performance Appraisal Guidelines

Nilai	Keterangan
91-100	Sangat Baik
81-90	Baik
71-80	Cukup Baik
61-70	Kurang
50-60	Sangat Kurang

Here is the weighting for each criteria Employee performance appraisal.

Table 6 Weighted Criteria

Kriteria	Inisial	Bobot (W)	Bobot(Dalam Decimal)
Menjalankan tugas secara profesional	C1	15%	0,15
Menjalin komunikasi yang baik	C2	25%	0,25
Motivasi Kerja	C3	10%	0,10
Inisiatif Kerja	C4	10%	0,10
Dedikasi	C5	20%	0,20
Kerjasama	C6	20%	0,20

2. *Do*

This stage is the stage of implementation or carry out all that has been planned in the stage of the plan including running the process, producing and collecting data which will then be used for the check and act stage. The assessment process is done using Simple Additive Weighting (SAW) method. Assessed with a range of values from 0-100. Here is an alternative table employee performance appraisal based on the criteria presented in the Plan stage.

3. *Check*

The check stage is the examination and review stage as well as studying the results of the implementation at the stage do. At this stage done Checking from the results of the calculation of employee appraisal at the stage do.

Table 7 Results of Assessment of Staffing

No	Nama Pegawai	Divisi	Nilai (V)	Ranking
1	Ati Sumiati	MICE	0,55	5
2	Teguh Ari Bowo	MICE	0,90	3
3	Eva Evtiani	MICE	0,95	2
4	Nesri Myoto	MICE	0,97	1
5	Junaedi	MICE	0,59	4

4. *Act*

This stage is the stage to take action whether the results that have been obtained at the previous check stage is in accordance with the initial planning. On the employee's appraisal the employee with the highest appraisal, it will affect the development of his career is in the promotion process of office, the employee will be a candidate to fill vacancies in the event of vacancy manager position. To be promoted the employee must meet the criteria that is Already a permanent employee, being in the same division with an empty manager position and have good assessment results.

2.4.5. The Analysis of PDCA Leave Application Process

1. *Plan*

Plan is the stage to set goals or targets to be achieved in improving the process or problem to be solved. Determine the types of leave, leave time and leave requirements or leave rules. Below is a table of types and rules of leave.

Table 8 Types and Rules of Leave

Nama Cuti	Waktu	Keterangan
Cuti Tahunan	12 Hari	Setiap tahun akan mendapatkan batas cuti sebanyak 12 hari, bisa di ambil perbulan 1 kali atau 3 kali maksimal dalam satu bulan.
Cuti Sakit	3 Hari	Jika sakit lebih dari 3 hari, maka wajib membawa surat dokter.
Cuti Bersalin	3 Bulan	Bisa diambil ketika usia kandungan sudah di atas 5 bulan, biasanya cuti di ambil 45 hari sebelum bersalin dan 45 hari sesudah bersalin.
Cuti karena alasan penting	-	Lama cuti disesuaikan.

2. *Do*

Stage Do to Request leave, 3 employees apply for leave. The application of leave will be approved if it is in accordance with the rules if it is not appropriate then the submission of the leave will be rejected.

3. *Check*

The check stage is the examination and review stage as well as studying the results of the implementation at the stage do. Results for leave decisions submitted by employees.

4. *Act*

This stage is the stage to take action whether the results that have been obtained at the previous check stage is in accordance with the initial planning. If the submission of the leave is successful then the relevant employee part of his cuts have been reduced and for the next will be prioritized for employees who have never applied for leave.

2.4.6. Analysis of PDCA Employee Retirement

1. *Plan*

Plan is the stage to set goals or targets to be achieved in improving the process or problem to be solved. Determining the retirement of employees, the stage plan for retirement is as follows. Employees who have retired are employees who have 65 years of age. The 65-year-old employee will be retired and granted severance in accordance with his / her tenure. Here is the severance calculation table.

Table 9 Severance Based on Working Period

Masa Kerja (MK)	Pesangon
10 thn <= MK < 11 thn	22 kali
11 thn <= MK < 12 thn	22 kali
12 thn <= MK < 13 thn	23 kali
13 thn <= MK < 14 thn	23 kali
14 thn <= MK < 15 thn	23 kali
15 thn <= MK < 16 thn	24 kali
16 thn <= MK < 17 thn	24 kali
17 thn <= MK < 18 thn	24 kali
18 thn <= MK < 19 thn	25 kali
19 thn <= MK < 20 thn	25 kali
20 thn <= MK < 21 thn	25 kali
21 thn <= MK < 22 thn	26 kali
22 thn <= MK < 23 thn	26 kali
23 thn <= MK < 24 thn	26 kali
MK => 24 thn	28 kali

2. *Do*

This stage is the stage of implementation or carry out all that has been planned in the stage of the plan including running the process, producing and collecting data which will then be used for the check and act stage.

1. Employees who have entered the age of retirement ie age 65 years will be made pension management for the employee by calculating the period of work and severance that will be obtained by the employee. For example, Mr. Junaedi has been working for 15 years and his age will soon be 65 years old, Mr. Junaedi will enter the age of 65 years on October 12, 2017, then Junaedi father must have prepared the pension for 1 year before the end of his work, then Junaedi will get Severance in accordance with his tenure.
2. Early retirement application For employees who apply for early retirement whose working period is less than 10 years will not get severance pay, whereas if the employee apply for early retirement and the working period is more than 10 years then the employee will get severance pay.

3. *Check*

The check stage is the examination and review stage as well as studying the results of the implementation at the stage do. The stage of examination of the implementation of pensions by monitoring employees by checking the employment and wages received. For employees who apply for early retirement with a working period of less than 10 years will not get severance pay. For employees who retire due to termination of employment it will get severance according to working period.

4. *Act*

This stage is the stage to take action whether the results that have been obtained at the previous check stage is in accordance with the initial planning. The retirement will be monitored one month before for recruitment planning before retirement.

2.5. Data Analysis

Data analysis aims to analyze the data to be applied in the system and explain the data required for the system to run properly in accordance with the needs of its use.

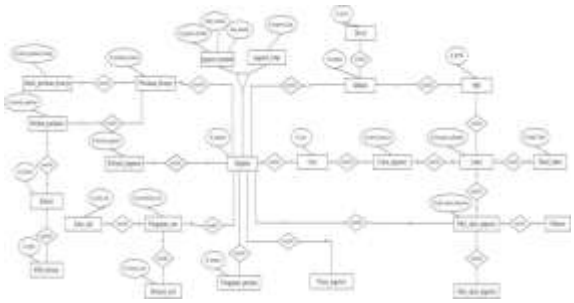


Figure 3 *Entity Relationship Diagram* (ERD)

2.6. Analysis of Non-functional Requirement

Non functional requirement analysis is done to know the system requirement specification in order to run well. The analysis performed is user analysis, software analysis and hardware analysis.

2.6.1. Analysis of Software

Software used to run human resource management information system.

Table 10 anlysis of Software

No	Perangkat Keras	Spesifikasi
1	Sistem Operasi	Windows 7 *Professional*
2	Web Browser	*Google Chrome, Mozila Firefox, Internet Explorer.*

2.6.2. Analysis of Hardware

Hardware used to run human resource management information system.

Table 11 Analysis of Hardware

No	Perangkat Keras	Spesifikasi
1	Processor	1,8 Ghz
2	RAM	512 MB
3	Harddisk	10 GB
4	Monitor	LED Monitor 14 Inch
5	Keyboard	Standar
6	Mouse	Standar

2.7. Analysis of Functional requirement

Functional Needs Analysis is an analysis that describes the flow of data or information that includes the drawing, planning, and sketching or arrangement of several separate elements into a unified whole and functioning in the process of making software to be built.

2.7.1. Context Diagram

Context Diagram is A diagram illustrating the relationship between outer entity, input and output of the system. The context diagram is represented by a single circle representing the whole system. Context diagram of human resource management information system can be seen in the picture below.



Figure 4 Diagram Konteks

2.7.2. DFD Level 1

DFD level 1 Management Information System PT.Traveland Convex Indonesia.

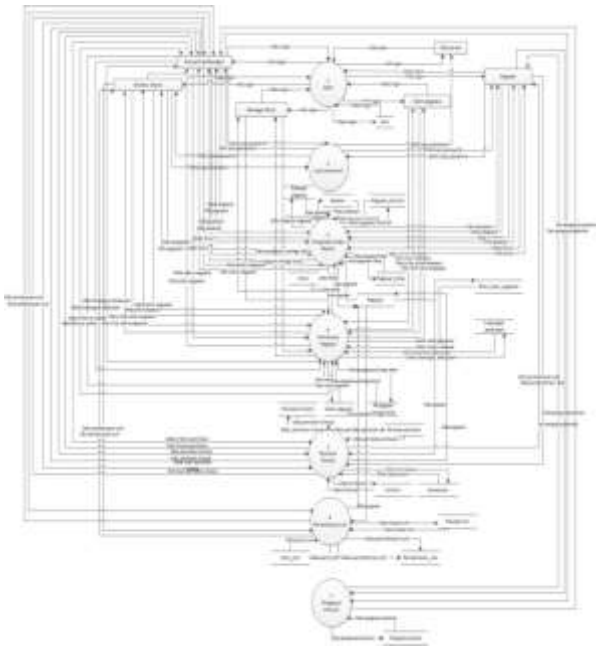


Figure 5 DFD Level 1

2.8. Implemenatation and Testing System

2.8.1. Blackbox Testing

Blackbox testing is a test performed by simply observing the results of execution through test data and functional checking of the system. Black box testing is a test program based on the function of the program. The purpose of this black box method is to find fault function on the program. Black box testing is done by giving a number of inputs to the application program which is then processed in accordance with the functional requirements to see whether the application program produces the desired output and in accordance with the function of the program.

Here is Blackbox testing for Human Resource Management Information System at PT. Traveland Convex Indonesia among others are as follows.

Table 12 Blackbox Testing

Item Uji	Detail Pengujian	Jenis Pengujian
Login	Login Pengguna	*Black Box*
Lupa *Password*	Lupa *Password* pengguna	*Black Box*
Penambahan Pegawai Tetap	Tambah data, Ubah data, Cari data	*Black Box*
Penambahan Pegawai Kontrak	Tambah data, Ubah data, Cari data	*Black Box*
Pengolahan Data User	Tambah data, Ubah data, Cari data	*Black Box*
Pengolahan Data Divisi	Tambah data, Ubah data, Hapus data, Cari data	*Black Box*
Pengolahan Data Jabatan	Tambah data, Ubah data, Hapus data, Cari	*Black Box*

2.8.2. Beta Testing

Beta testing is a direct test of the real environment. Users make an assessment of the software using interview methods. From the results of these interviews it can be concluded whether the software built in accordance with the purpose or not. This beta test is done by doing direct test at the research place by using interview technique.

Based on the above Beta test it can be concluded that:

1. The system has been managing employee data quite well.
2. The system is quite helpful in the recruitment process.
3. The system is quite helpful in the process of employee performance appraisal.
4. The system is good enough in managing employee data.
5. The system is quite helpful in the submission and approval of leave.
6. The system is quite easy to learn.
7. Display system is good enough.

2.8.3. UAT (User Acceptance Test)

UAT (User Acceptance Test) is done as a condition that the built application has been accepted by the user. The new app testing process involves potential users / users.

User Acceptance Test (UAT) test or user acceptance test is a user testing process that is intended to produce a document that serves as evidence that the software has been developed acceptable by the user, if the test results can be considered to meet the needs of the user. In software development, UAT is one of the final stages of a project and often occurs before clients or customers receive a new system. The system user performs this test, which the developer comes from the client contract or user needs specification.

3. CLOSING

3.1. Conclusion

Based on the description of the analysis and testing that has been done, it can be taken a conclusion on the Human Resources Management Information System at PT.Traveland Convex Indonesia are as follows:

1. Human Resource Management Information System at PT.Traveland Convex Indonesia is enough to assist Accounting manager in making employee recruitment decisions.
2. Human Resource Management Information System at PT.Traveland Convex Indonesia is enough to assist Accounting manager in performing performance appraisal based on company criteria.
3. Human Resource Management Information System at PT.Traveland Convex Indonesia is enough to assist Accounting manager in

the control of employee leave and determine the approval of employee leave.

3.2 Suggestion

Based on the conclusions that have been described above, the expected or future suggestion is for Human Resource Management Information System In PT.Traveland Convex Indonesia is on the Recruitment section, especially on job features can be added detail job openings to be more clear and interesting for the Prospective employees who want to apply. In addition, the expected Human Resource Management Information System At PT.Traveland Convex Indonesia can be developed more widely and covers other areas so as to facilitate the company in managing the company in the future.

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