

IMPLEMENTATION DETERMINATION OF EMPLOYEES TO INCREASE THE BEST POSITION IN. YES COMMUNICATION USING WEB-BASED PRODUCT WEIGHTED

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Abstract: Employees are one of the most important asset for a company. Therefore, the company should be able to continue to control and motivate the employees to remain willing to work in his company. One way that can be done by the company to support the performance of employees is to select the best employees each year. There are many methods that can be used to determine the best employees. One of these methods Weighted Product. Weighted Product is a method that uses an alternative multiplication on the existing rating criteria and meningkatkannya in accordance with the weighting of the criteria that have been provided by the company. In this way this calculation the company can determine the best employees accurately and quickly.

Keywords : Best Employee, Position, Weighted Product (WP), Web.

Abstrak: Karyawan merupakan salah satu aset terpenting bagi sebuah perusahaan. Oleh karena itu, pihak perusahaan harus dapat terus mengontrol dan memotivasi pihak karyawannya agar tetap bersedia bekerja sama di perusahaannya. Salah satu cara yang dapat dilakukan oleh pihak perusahaan untuk mendukung kinerja karyawannya adalah dengan memilih *karyawan terbaik* setiap tahunnya. Ada banyak metode yang dapat digunakan untuk penentuan karyawan terbaik. Salah satunya metode *Weighted Product*. *Weighted Product* merupakan metode yang menggunakan perkalian pada alternatif rating yang ada di kriteria lalu meningkatkannya sesuai dengan bobot dari kriteria yang telah disediakan oleh perusahaan. Dengan cara ini perhitungan ini pihak perusahaan dapat menentukan karyawan terbaik dengan tepat dan cepat.

Kata kunci : Karyawan Terbaik, Jabatan, Weighted Product (WP), Web.

INTRODUCTION

Determining the best employees is one of the supporting aspects to improve employee performance. Usually for employees who elected the company will give you an appreciation from an additional bonus of up to raise. Of course it is a very attractive offer for the employees. That way, all parties will compete for employees to be the best.

PT. Yes Communication is one company engaged in *advertising printing* (Print ads) and sales of daily necessities. The company has a number of employees who can be quite a lot. Therefore, the company wants to provide a support to its employees so that all employees can work optimally. By implementing a

system to define the best employees. But this is also a challenge for the company PT. Yes Communication. Which is where the company PT. Yes Communication must be able to provide a fair assessment of all its employees. If the vote is taken arbitrarily then it could be fatal for the company. Because it can result in employees revolted even stop working. Therefore, the determination of the best employees of the daily rated employees in the work. The method used is the method of Weighted Product. This method was chosen because it is more efficient because this method simply connect rating on each of the attributes that have been raised to advance the interrelated attribute weights [1]. By

using the system and method, the company can determine the best employees to easily and accurately.

THE ORETICAL BASIS

System

The system is a collection of some of the objects that are intended to perform a function to achieve a particular goal [1].

Decision Support System

Decision Support System is a computer-based system, which contains a number of diverse information from multiple sources to take a decision [2]. This system can analyze the information to improve the efficiency of making a decision. Decision support systems is done by a systematic approach to the problem through the process of collecting data to information, as well as added to the factors to be considered in the decision making [6].

The purpose of this decision support system that is [5]:

1. Assist the company in making a decision in a structured way.
2. Improving the effectiveness of the decision taken by the company.
3. To assist the company in making decisions quickly and accurately.

Weighted Product

Weighted Product is evaluating several alternative methods of collection of attributes and criteria [3].

According to Yoon in Kusumadewi, WP use multiplication to connect rating attribute, which should be raised to a power rating used with the corresponding attribute weights [8]. The concept of this method is to evaluate A_i ($i = 1, 2, \dots, m$) on the set of attributes or criteria C_j ($j = 1, 2, \dots, n$) where each attribute is not related to the others [4].

A_i process is given as follows:

$$S_i = \prod_j^n = x_{ij}w_j \quad ; \text{ dengan } i= 1,2,\dots,m \quad (1)$$

Information :

S: Stating alternative preferences and dianologikan as vectors S

x: Returns the value of the criteria

w: Stating weighting of criteria

i: Stating alternative

j: Declare criteria

n: Stating the number of criteria

Where $\sum w_j = 1$ w_j is the rank of positive value to attribute profits, and negative values to attribute costs. Relative preference of each alternative, given as follows:

$$V_i = \frac{\prod_{j=1}^n x_{ij}w_j}{\prod_{j=1}^n (x_{j*})w_j} \quad ; \text{ dengan } i = 1, 2, \dots, m \quad (2)$$

Information :

V: Stating alternative preferences and dianologikan as vectors V

x: Returns the value of the criteria

w: Stating weighting of criteria

i: Stating alternative

j: Declare criteria

n: Stating the number of criteria

Stages Weighted Product

The stages that must be done to implement the method *weighted product* as follows [7]:

1. Determining the required criteria as the basis of determining the best employees.
2. Once it determines the compatibility rating. Determination of suitability rating is done on every alternative on the criteria and the decision matrix.
3. After a match rating has been obtained, the next step is to normalize the weight on each criteria.

Normalization of weights can be obtained by weighting each criterion divided by the sum of all the weights of criteria.

The value of the total weight must satisfy the equation:

$$\sum_j^n = 1 \quad w_j = 1 \quad (3)$$

Information :

- Wj: Rank positive value to attribute profits, and negative to attribute costs
- j: Declare criteria
- n: Stating the number of criteria

3. The final step is to rank the value of each alternative starts from the largest to the smallest value. The best alternative was selected ,, it can be seen by looking at the greatest value.

1. The next step is, determine the value of vector S vector S. value can be obtained by multiplying all of the criteria on alternatives to the weight that has positive exponential benefits to the criteria, and negative weights to the criteria of cost / expense.
2. Once the value of vector S is obtained, then determine the value of the vector V. Value Vector V was obtained by distributing the value of vector S with a total value of vector S.

The best employee

Employees are people who work for a salary or wage of the results that have been done, both within and outside the employment relationship [1]. Best employees are the ones chosen by the management at the company in an effort to encourage employees who elected to continue to excel and simultaneously boost performance of other employees in accordance with the vision and mission of which is owned by the company.

RESULTS AND DISCUSSION

In determining the best potential employees at PT. Yes Communication, awarded 20 employee data that qualify as alternative data.

Table 1. List of Employee Name

KODE	NAMA ALTERNATIF	NILAI						
		C1	C2	C3	C4	C5	C6	C7
A1	Abra	77	60	50	75	65	50	77
A2	Lukas	75	78	56	70	60	58	89
A3	Maria	75	65	60	64	75	67	78
A4	Taki	60	55	80	78	85	68	79
A5	Arya	73	75	60	63	75	68	88
A6	Simon	67	55	70	75	70	70	80
A7	Fadli	65	60	67	77	65	75	87
A8	Angel	88	60	75	75	60	78	79
A9	Dedi	57	63	78	75	70	62	70
A10	Merry	69	40	70	65	60	70	77
A11	Saut	53	68	69	76	66	75	55
A12	Dieky	70	47	78	79	78	77	81
A13	Vistha	71	59	78	78	88	69	70
A14	Lamrot	71	48	69	78	57	67	75
A15	Andre	68	59	69	66	76	69	79
A16	Lucias	78	62	58	67	78	82	68
A17	Melati	69	85	69	77	60	80	85
A18	Vika	87	70	72	87	67	68	78
A19	Niko	78	74	77	97	77	78	67
A20	Judi	55	63	75	87	66	79	80

Here are the steps to determine the best employees at PT. Yes Communication with the weighted product method, namely:

- C3 = Responsibility
- C4 = Presence
- C5 = Discipline
- C6 = Cooperation
- C7 = Initiative

Specifies criteria

In this step is the determination of the criteria that will be used. The criteria referred to in Table 1 can be seen below.

- C1 = Performance
- C2 = Achievement

With the level of importance given the weight of each criterion then rated from 1 to 5, as follows:

Table 2. Weight of Value Criteria

Value	Information	Weight
81-100	Very good	5
61-80	Well	4
41-60	Enough	3
21-40	Less	2
0-20	Very less	1

Determining Suitability Rating

In this step done suitability rating. This compatibility rating is obtained by matching criteria and alternatives based on Table 2.

Table 3. Table Alternatives Every Criteria

KODE	NAMA ALTERNATIF	NILAI						
		C1	C2	C3	C4	C5	C6	C7
A1	Abra	4	3	3	4	4	3	4
A2	Lukas	4	4	3	4	3	3	5
A3	Maria	4	4	3	4	4	4	4
A4	Taki	3	3	4	4	5	4	4
A5	Arya	4	4	3	4	4	4	5
A6	Simon	4	3	4	4	4	4	4
A7	Fadli	4	3	4	4	4	4	5
A8	Angel	5	3	4	4	3	4	4
A9	Dedi	3	4	4	4	4	4	4
A10	Merry	4	2	4	4	3	4	4
A11	Saut	3	4	4	4	4	4	3
A12	Dicky	4	3	4	4	4	4	5
A13	Vistha	4	3	4	4	5	4	4
A14	Lamrot	4	3	4	4	3	4	4
A15	Andre	4	3	4	4	4	4	4
A16	Lucias	4	4	3	4	4	5	4
A17	Melati	4	5	4	4	3	4	5
A18	Vika	5	4	4	5	4	4	4
A19	Niko	4	4	4	5	4	4	4
A20	Judi	3	4	4	5	4	4	4

Doing Normalized Weight

The next step determines the weight (value) of each criterion, where the weight (value) is determined by the decision maker based on the level of interest that is symbolized by (W).

Table 4. Weight Each Criteria

No.	Criteria	Weight
1	C1	20
2	C2	20
3	C3	15
4	C4	10

5	C5	10
6	C6	10
7	C7	15

After that do repairs weight value, by calculating the total weight and then divided by the weight of each criteria as below.

$$W1 = 20 / (20 + 20 + 15 + 10 + 10 + 10 + 15) = 0.2$$

$$W2 = 20 / (20 + 20 + 15 + 10 + 10 + 10 + 15) = 0.2$$

$$W3 = 15 / (20 + 20 + 15 + 10 + 10 + 10 + 15) = 0.15$$

$$W4 = 10 / (20 + 20 + 15 + 10 + 10 + 10 + 15) = 0.10$$

$$W5 = 10 / (20 + 20 + 15 + 10 + 10 + 10 + 15) = 0.10$$

$$W6 = 10 / (20 + 20 + 15 + 10 + 10 + 10 + 15) = 0.10$$

$$W7 = 15 / (20 + 20 + 15 + 10 + 10 + 10 + 15) = 0.15$$

Calculating the Value of Vector S

Vector value S obtained by the value in pangkatkan with total weights to each criterion values.

$$S1 = (40.2) (30.2) (30.15) (40.10) (40.10) (30.10) = 3.514 (40.15)$$

$$S2 = (40.2) (40.2) (30.15) (40.10) (30.10) (30.10) = 3.739 (50.15)$$

$$S3 = (40.2) (40.2) (30.15) (40.10) (40.10) (40.10) = 3.831 (40.15)$$

$$S4 = (30.2) (30.2) (40.15) (40.10) (50.10) (40.10) = 3.645 (40.15)$$

$$S5 = (40.2) (40.2) (30.15) (40.10) (40.10) (40.10) = 3.961 (50.15)$$

$$S6 = (40.2) (30.2) (40.15) (40.10) (40.10) (40.10) = 3.776 (40.15)$$

$$S7 = (40.2) (30.2) (40.15) (40.10) (40.10) (40.10) = 3.904 (50.15)$$

$$S8 = (50.2) (30.2) (40.15) (40.10) (30.10) (40.10) = 3.836 (40.15)$$

$$S9 = (30.2) (40.2) (40.15) (40.10) (40.10) (40.10) = 3.776 (40.15)$$

$$S10 = (40.2) (20.2) (40.15) (40.10) (30.10) = 3,383 (40.10) (40.15)$$

$$S11 = (30.2) (40.2) (40.15) (40.10) (40.10) = 3.616 (40.10) (30.15)$$

$$S12 = (40.2) (30.2) (40.15) (40.10) (40.10) = 3,904 (40.10) (50.15)$$

$$S13 = (40.2) (30.2) (40.15) (40.10) (50.10) = 3.861 (40.10) (40.15)$$

$$S14 = (40.2) (30.2) (40.15) (40.10) (30.10) = 3,669 (40.10) (40.15)$$

$$S15 = (40.2) (30.2) (40.15) (40.10) (40.10) = 3.776 (40.10) (40.15)$$

$$\begin{aligned}
 S16 &= (40.2) (40.2) (30.15) (40.10) (40.10) (50.10) (40.15) &= 3.917 \\
 S17 &= (40.2) (50.2) (40.15) (40.10) (30.10) (40.10) (50.15) &= 4.202 \\
 S18 &= (50.2) (40.2) (40.15) (50.10) (40.10) (40.10) (40.15) &= 4.276 \\
 S19 &= (40.2) (40.2) (40.15) (50.10) (40.10) (40.10) (40.15) &= 4.090 \\
 S20 &= (30.2) (40.2) (40.15) (50.10) (40.10) (40.10) (40.15) &= 3.861
 \end{aligned}$$

Calculating the Value Vector V

Value Vector V is obtained by dividing the vector S divided by the total value of vector S.

$$\begin{aligned}
 V1 &= 3.514 / 76.537 = 0.045912 \\
 V2 &= 3.739 / 76.537 = 0.048852 \\
 V3 &= 3.831 / 76.537 = 0.050054 \\
 V4 &= 3.645 / 76.537 = 0.047624 \\
 V5 &= 3.961 / 76.537 = 0.051752 \\
 V6 &= 3.776 / 76.537 = 0.049335 \\
 V7 &= 3.904 / 76.537 = 0.051008 \\
 V8 &= 3.836 / 76.537 = 0.050119 \\
 V9 &= 3.776 / 76.537 = 0.049335 \\
 V10 &= 3.383 / 76.537 = 0.044200 \\
 V11 &= 3.616 / 76.537 = 0.047245 \\
 V12 &= 3.904 / 76.537 = 0.051008 \\
 V13 &= 3.861 / 76.537 = 0.050446 \\
 V14 &= 3.669 / 76.537 = 0.047937 \\
 V15 &= 3.776 / 76.537 = 0.049335 \\
 V16 &= 3.917 / 76.537 = 0.051177 \\
 V17 &= 4.202 / 76.537 = 0.054901 \\
 V18 &= 4.276 / 76.537 = 0.055868 \\
 V19 &= 4.090 / 76.537 = 0.053438 \\
 V20 &= 3.861 / 76.537 = 0.050446
 \end{aligned}$$

Rank Value Vector V

After getting value vector V then the next step to sort value vector V of the largest order to the order of the smallest.

Table 5. Results on Ranking

No	Alternativ name	Value
1	Vika	0.055868
2	Jasmine	0.054901
3	Niko	0.053438
4	Arya	0.051752
5	Lucias	0.051177
6	Fadli	0.051008
7	Dicky	0.051008
8	Vistha	0.050446
9	Gambling	0.050446
10	Angel	0.050119
11	Maria	0.050054
12	Simon	0.04933
13	Dedi	0.049335
14	Andre	0.049335
15	Lukas	0.048852
16	Lamrot	0.047937
17	Taki	0.047624
18	Saut	0.047245
19	Abra	0.045912
20	Merry	0.044200

Of ranking the results in table 5 above can be taken a decision that the best employees at PT. Yes Communication is Vika with a value of 0.055868.

CONCLUSION

Based on the research that has been done on the implementation of the determination of the best employee for promotion at PT. Yes Communication with the use of web-based product weighted method, can be drawn some conclusions, namely:

1. On the results of the implementation can be seen that this product weighted method can be applied properly.

2. Selection of the best employees can be seen from the results of ranking the highest value.
3. The results of the use of this product weighted method may be a consideration for the company in determining the best employees.

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