DECISION SUPPORT SYSTEM VENDOR AND SELLING PRICE DETERMINATION CASE STUDY CV.DATAMEDIA INFOTAMA

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ABSTRAK

Selection of the right vendors and the right price for the company will need to select a vendor that is able to meet the company's needs consistently. CV.Datamedia Infotama It is a company engaged in the sale of stationery and computers and banking.

Vendor selection process that runs in CV.Datamedia currently only emphasis on cost criteria (cost). Plus other criteria that are subjectively less companies because of criteria other than cost (cost) is not be consideration in selecting a vendor. Other issues, namely the determination of price quotes to customers because of the price quote must be able to compete with other companies.

This research will be appointed a case in vendor selection, the search for the best arternatif of the criteria that have been determined using the analytic hierarchy process (AHP). This method was chosen because it can finish the best alternative in determining the vendor based on specified criteria. Results of the selection of vendors implemented by offering the customer price. Customer price quote process resulted in the price of the goods the customer be different, it is intended to maintain the market share of customers.

Based on test results, a system built to assist managers in making the determination of the vendor, determine the selling price of its customers and accelerate the process of determining the selling price for the vendor and the customer.

Keywords: DSS, criteria, programming, AHP

1. PRELIMINARY

CV.Datamedia Infotama is a company engaged in the sale of office supplies and computers for banks, enterprises and government agencies. CV.Datamedia Infotama in conducting its business activities in collaboration with vendors to meet customer orders. Purchases of goods to vendor adjusted the number of customers ordering goods therefore vendor selection is very important because it should be able to fulfill customer orders in a short time so that it can deliver the goods to the customer in a timely manner

Based on observations and interviews with Mr. Muhammad Irwan Yanuar as manager at CV. Datamedia Infotama, shows that One of the problems that exist in CV.Datamedia Infotama are issues related to vendor selection. Vendor Selection is currently contacting companies one by one via phone vendors to get the best deals to meet customer reservation so that time-consuming and less efficiency. Management companies also feel confused when it must determine the vendor with the best service for the current vendor selection criteria only emphasizes the cost plus another assessment is subjective. This system is less profit for company, because the assessment vendor selection based only on the aspect of cost (cost) while the criteria other than cost (non-cost) has a very important role not be considered as a vendor can provide offer best price but late delivery or quality of goods is not good so companies often get complaints from customers.

the second problem associated with determining the customer price quote. Company offers goods or the procurement of goods to customers, therefore in the process of the supply of goods to be able to compete with other company's competitors. Aspects aspects of assessment in determining the offer price of goods is the number of the desired price, taxable or not taxable and giving discounts considerations include the number of reservations, the old relational and long payment so as to produce the selling price. The process of

making an offer of goods resulted in the price of goods of different customers with other customers. Prices of goods customers who have a separate price has not been well documented as being stored in a database that can cause damage to documents and resulting delay in making the report,

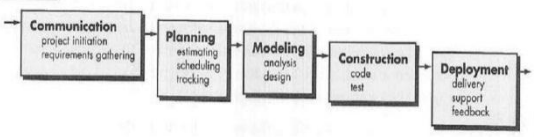
. Based on the existing problems, the need for a decision support system vendors and the sales price determination in CV.Datamedia Infotama While the objectives to be achieved in this study are:

1. Make it easy for managers to determine the best vendor
2. Facilitate manager in determining the price for the customer.
3. Accelerate manager in determining the price

2. *MODEL, ANALYSIS, DESIGN AND IMPLEMENTATION*

2.1 Model

Stage of development software using the waterfall software paradigm, which includes several processes, such as those described



2.2 Analysis

2.2.1 Problem Analysis

Analysis of the problem is an assumption of the problem to be described in prosedurprosedur in determining the selling price for the vendor and the customer. Analysis of the problems of the current system at this time is:

1. Manager difficult to determine because many vendors are variations of goods sold by CV.Datamedia Infotama. ,

2. Manager difficulties in determining the selling price of goods to the consumer because the consumer has a different price

2.2.2 Analysis AHP

1. Process Hierarchy

Based on the interview with Mr. Irwa as Manager CV.Datamedia Infotama, obtained the necessary criteria to support the calculation process AHP, namely:

1. Duration of payment

2. Services

3. delivery

4. Prices

So the data above, can then be arranged hierarchy of the promotion positions as in Figure 2 below

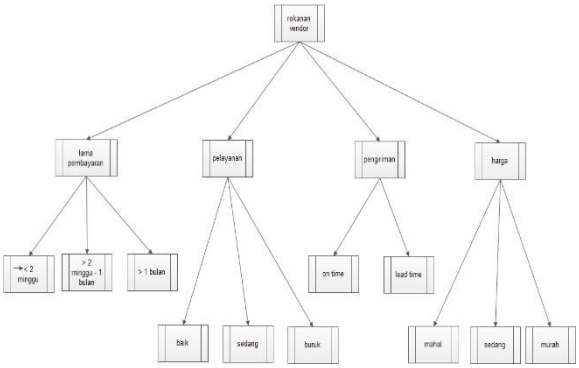


figure 2. Hierarchy Process of determining vendor

1. The process of calculating the weight

a. Weight Calculation Criteria

Table 1. Pairwise Comparison Matrix criteria

	Duration of payment	*Service*	*Delivery*	*Price*
Duration of payment	*1*	*3*	*5*	*7*
Service	*1/3*	*1*	*3*	*5*
Delivery	*1/5*	*1/3*	*1*	*3*
Price	*1/7*	*1/5*	*1/3*	*1*

escription:

1. The above comparison is to compare the leftmost column lies with each column of the second, third and fourth.
2. Line 2 column 2 ratio of long payment worth 1 then both equally important elements.
3. Row 2 column 3 long comparison of payments and long service payments worth 3 then a little more important than service.
4. Line 2 column 4 a comparison between the old payment and delivery time payment worth 5 then obviously more important than delivery.
5. Row 2 column 5 the comparison between the old and the payment of the price of the old payments worth 7 clearly more important than the price.

table 2. Pairwise Comparison Matrix
Criteria Form Decimal

Table 2 Matrix Value Decimal

	Duration of payment	Service	Delivery	Price
Duration of payment	1, 0	3,000	5,000	7,000
Service	0,333	1,000	3,000	5,000
Deliver	0,200	0,333	1,000	3,000

	Duration of payment	Service	Delivery	Price
y				
Price	0,143	0,200	0,333	1,000
∑kolom	1,676	4,533	9,333	16,000

description:

- In the long table payments in column 1 line 3 worth 0.333 a pairwise comparison of the old criteria and the payment of educational services with the old works by comparing the value of each criterion value is 1: 3 = 0.333

Table 3. criteria value

	Duration of payment	Service	Delivery	Price	∑baris	∑baris/n
Duration of payment	(1.000/)/(1.1676)	(3,000)/(4.533)	(5.000)/(9.333)	(7.000)/16.000)	-	-
Service	(0.333)/(1.1676)	(1.000)/4.533)	(3.000)/(9.333)	(5.000/16.000)	-	-
Delivery	(0.200)/91.676)	(0.333)/(4.533)	(1.000)/(9.333)	(3.000)/(16.000)	-	-
Price	(0.143)/(1..676)	(0.200)/(4.533)	(1.000)/(9.333)	(1.000)/(16.000)	-	-

Description:

1. Calculation (1000) / (1676) obtained from Table 3.3 divided by the number in each column.

2. The calculation of the value obtained from the column in the table as long perbaris services obtained from each column in row 2.

3. Calculation of the results obtained from the addition divided by the number of criteria (n).

3. Line and the division of the number of lines

.

Table 4. Total Total Priority Value

	Duration of payment	Service	Delivery	Price	Jml Baris	Vector Prioritas
Duration of payment	0,596	0,661	0,535	0,437	2.229	0.557
Service	0,199	0,220	0,321	0,312	1.052	0.263
Delivery	0,119	0,073	0,107	0,187	0.486	0.121
Price	0,085	0,044	0,035	0,062	0.226	0.056

a) Check the consistency criteria

1) Determine the maximum eigen values (by multiplying each column of the matrix comparison with the priority vector.

$$0{,}557\begin{bmatrix}1{,}000\\0{,}333\\0{,}200\\0{,}143\end{bmatrix} + 0{,}263\begin{bmatrix}3{,}000\\1{,}000\\0{,}333\\0{,}200\end{bmatrix} + 0.121\begin{bmatrix}5{,}000\\3{,}000\\1{,}000\\0{,}333\end{bmatrix} + 0{,}056\begin{bmatrix}7{,}000\\5{,}000\\3{,}000\\1{,}000\end{bmatrix} = 4{,}150$$

1) *count consistency index (CI)*

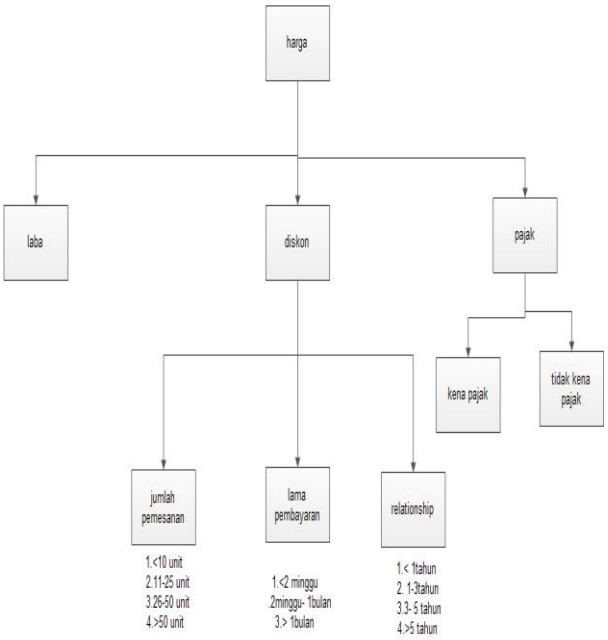
$$CI = \left[\frac{\lambda\,maks - n}{n-1}\right] = \left[\frac{4{,}150 - 4}{4-1}\right] = 0.061$$

2) *consistency ratio where* RI = 0,9:

$$CR = \left[\frac{CI}{RI}\right] = \left[\frac{0{,}067}{0{,}9}\right] = 0{,}068$$

2.2.3 Price Analysis

Hirarky method price analysis.



1) counting price method
for counting selling price method then buy price additing with salary manager want. For selling price additing 2 . selling price regular and selling price costumer

- selling price reguler = buy price + (buy price /100) + (tax./ no tax)
- selling price custome = selling price costume-selling pricereguler * discount/100)+ (tax /no tax

2.2.4 UseCase Diagram

Below is the flow of Use Case decision support system that presents an actor who presented the business processes running in a system as shown in below:

o

2.2.4 *Activity Diagram*

1. *Activity Diagram Login*

Activity diagram this use for verifikasi user data in system.

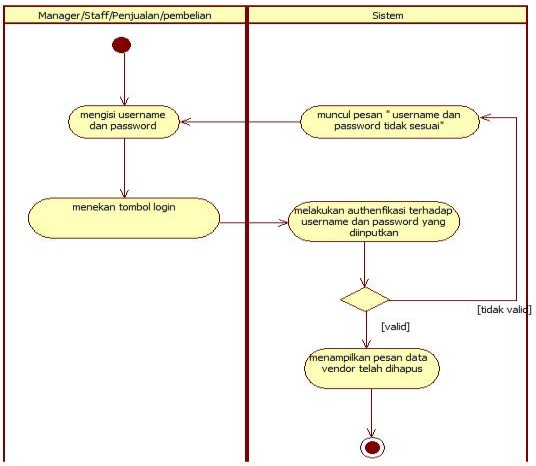


Figure 4. *Activity* Diagram Login

2. *forgot Password Activity Diagram Activity diagrams are used actors to forget the password*

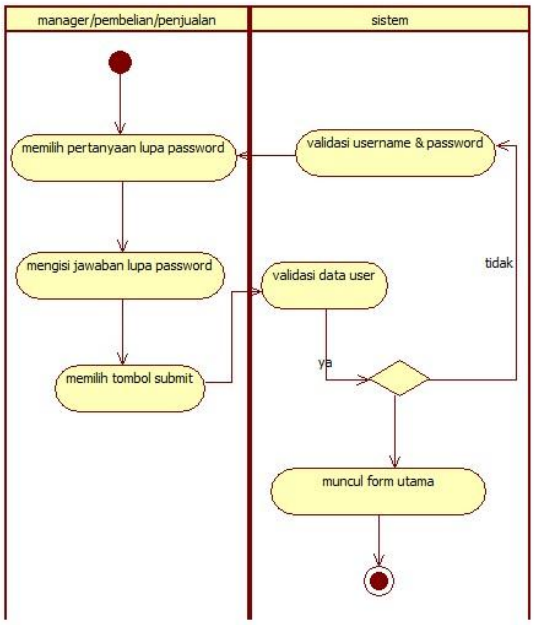


Figure 5. Activity Diagram forgot Password

2.2.5 Class Diagram

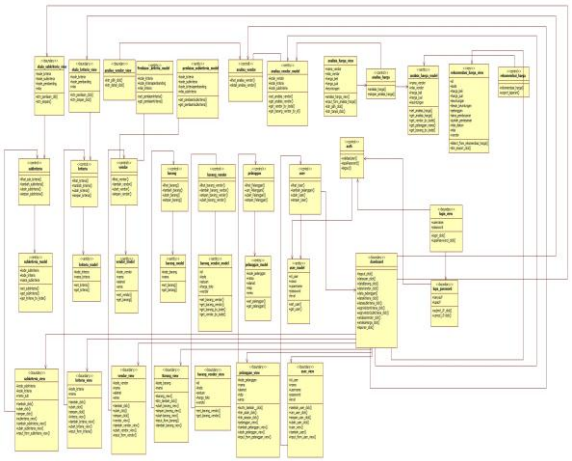


Figure 6. Class Diagram SPK

2.2.6 *Sequence* Diagram

1. *Sequcence* Diagram Login

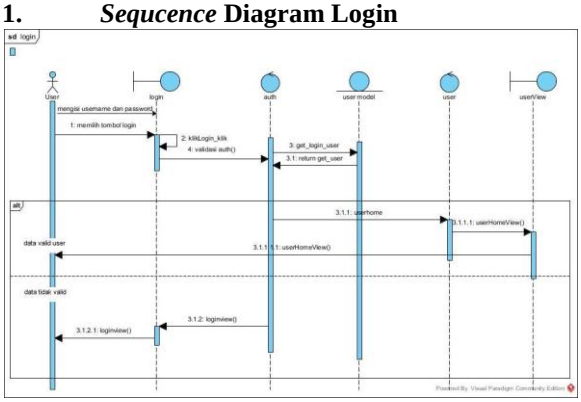


Figure 7. *Sequence* Diagram Login

2. Sequence Diagram management user

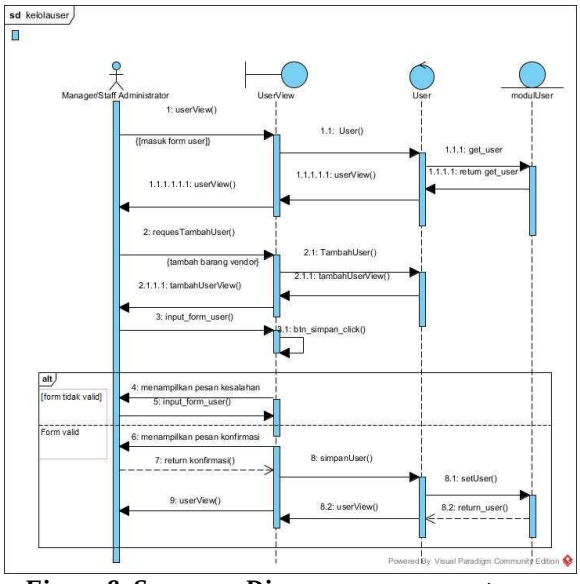


Figure 8. Sequence Diagram management user

2.2.7 table Relationships

Process relationships between files is a combination of a file that has a primary key (primary key) are the same, so that those files into a single unit which is connected fields (attributes) of the key.

No	*hardware*	*spesification*
1	*Processor*	*Intel Corei3 2.3 Ghz*
2	*Monitor*	*Monitor Resolusi 1024 x 728 Pixels*
3	*VGA*	*256 MB*
4	*Memori*	*2,00 GB*
5	*Harddisk*	*500 GB*

No	*harware*	*spesification*
1	*Processor*	*Pentium 4, 1.8 Ghz*
2	*Monitor*	*Monitor Resolusi 1024 x 728 Pixels*
3	*VGA*	*256 MB*
4	*Memori*	*1024 MB*
5	*Harddisk*	*10 GB*

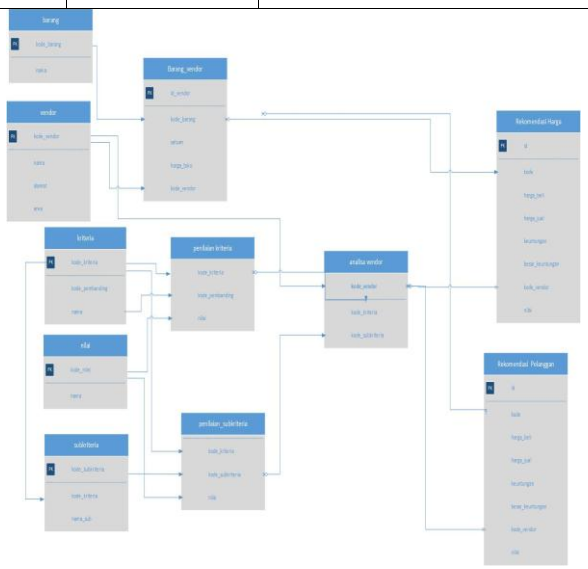


Figure 9. scema relation integration table

2.3 Desain

Here is a figure in the menu structure determination SPK application vendors and the sales price in CV.Datamedia Infotama

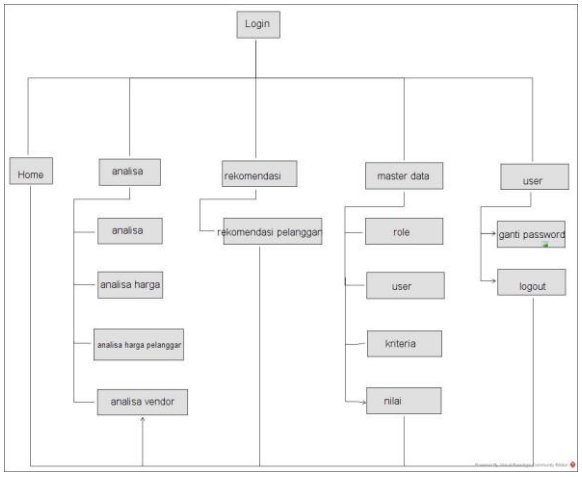


Figure 10. menu structure

2.4 Implementation

2.4.1 Hardware Implementation

Implementation goal is to confirm the module design program on the perpetrators of the system so that the user can provide input to the system builder as shown in Table 9.

Tabel 9. Hardware implementation

Tabel 10. User harware implementation

2.4.2 Software Implementation Specification *software used to build and identification systems used in building.*

No	*Sofware*	*spesification*
1	*Mysql*	*Sebagai DBMS*
2	*Sistem Operasi*	*Windows 7 Ultimate*
3	*Web Browser*	*Mozilla Firefox, Internet Explorer 8*

From the analysis and perancangann has done a result of the application built sala them can be seen as in figure 11, 12, 13,and 14

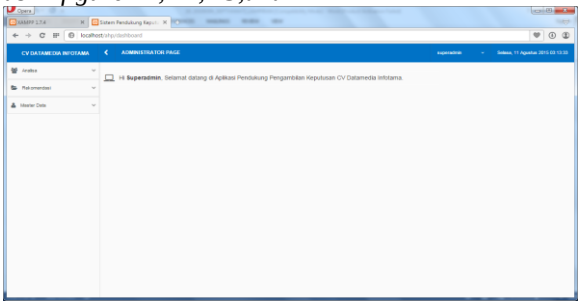


Figure 11. The main view Home

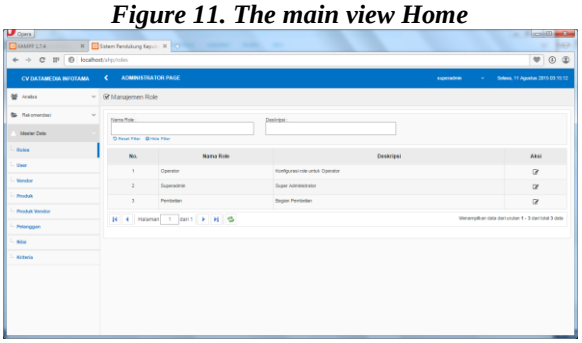


Figure 12. view Role User

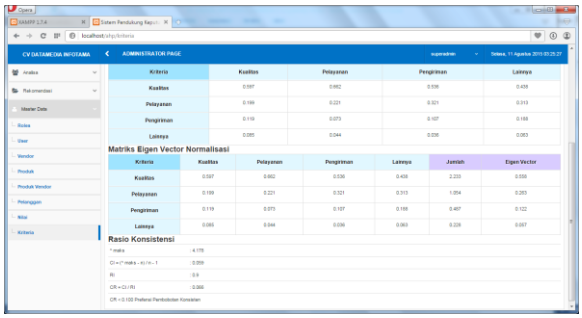


Figure 13. view matrix criteria

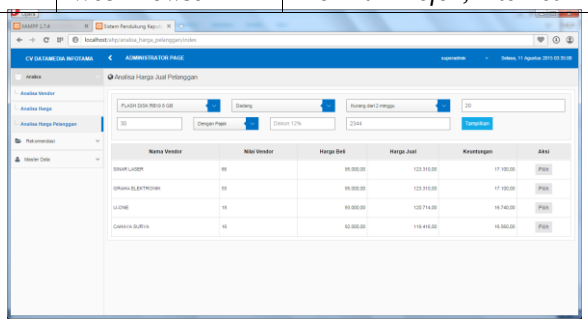


Figure 14. view price analysis

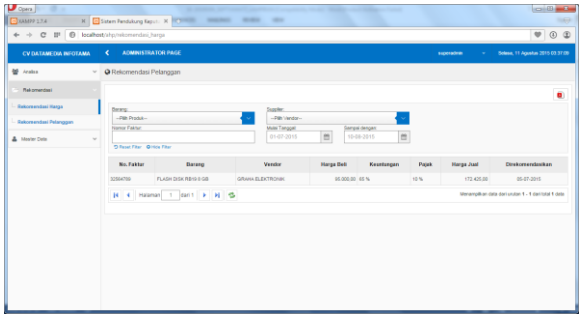


Figure 15. View Price Rekomendation

3 *CLOSING*

3.1 Conclusion

After doing the analysis, design, and testing, it can be concluded as follows:
1. Decision Support System can help managers in determining the vendor and the sales price
2. The decision support system can accelerate manager in menentuakan vendors and the sales price.

3.2 *2 Suggestions*

Of all the results that have been achieved so far, still has shortage .recomended to add things that can complement this decision support system that will come.
Among others are :
1. The software decision support system can still be developed along with the development of the system user requirements specifications that must be met in achieving results and better system performance.
2. Development of an interface more attractive and user friendly.
3. More dynamic again in making the website.

Bibliography

[1] Sommerville, Ian. 2003. *Software Engineering, 9th Edition.* Pearson. Boston.

[2] Hartono, Jogiyanto. 2002. *Pengenalan Komputer, Dasar Ilmu Komputer, Pemrograman, Sistem Informasi, dan Intelegensi Buatan*. Andi. Yogyakarta.

[3] Saaty, T.L. 1994. *Fundamental Of Decision Making and Priority Theory With The Analytic Hierarchy Process.* University of Pittsburgh. RWS publication.

[4] Turban, E., Aronson, J. E., dan Liang, T. P. 2005. *Decision Support System and Intelligent Systems*.Seventh Edition. Prentice-Hall of India Private Limited. New Delhi.

[5] Kusrini. 2007. *Konsep dan Aplikasi Sistem Pendukung Keputusan*. C.V Andi Offset. Yogyakarta.