Abstract

Decision Support System is a computer based system that can give recommendation for people to make a decision. This system is not buit to make a decision but to support decision maker to make best decision based on information that gained by system. One problem that can be solved by using DSS is vendor selection problem.

Every year PT Telkom measured all vendor that they used in all division. There are eight category vendor that must be measured (KITB, KITM, KITK, KGSME, JPAT, TI, Outsourcing, Konsultan) but the method which used to calculate was still conventional calculation. It is need sophisticated model that can give recommendation to decision maker to choose the best vendor. Model which can be used is AHP and *Neural network*

From the testing obtained result that system accuracy was 75% comparing with data from PT Telkom. Adjusted activation function, bias and input value in hidden layer also influence in result of model. And the best result is obtained when model using bipolar sigmoid as activation function, bias weight is 0,07 and input value is 1/n where n is number of vendor

Keyword : Decision Support System, AHP, *Neural network*, Vendor selection