

EVALUATION OF UTILIZATION INFORMATION TECHNOLOGY ON KOPWANI ACCOUNTING INFORMATION SYSTEMS USING COST BENEFIT ANALYSIS AND GAP ANALYSIS

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Abstract— the purpose of this paper is to evaluate the utilization of information technology in KOPWANI accounting information systems. To determine the extent of the investment made by KOPWANI can meet the needs of the organization and produce results that accounting information fast, precise, and accurate. The methodology used in this paper is a literature study methods and descriptive survey research. Literature study is to find and study reference materials about the Cost Benefit Analysis (CBA) and GAP Analysis. Descriptive research survey conducted by questionnaire to respondents and conducted interviews to speakers. Evaluation results obtained from the calculation of Cost Benefit Analysis (CBA) and GAP analysis shows a positive value. The Investments were made by KOPWANI is a good job, but not fully optimized. There are accounting records that cannot be process. KOPWANI advised to upgrade applications and perform replacement of the hardware used by employees.

Keywords- Cost Benefit Analysis (CBA), Evaluation, GAP Analysis, Investment, Optimization

I. INTRODUCTION

The decision to invest is a very important decision, as it requires the allocation of substantial funds and involves risk (Mulyani and Heni, 2008). So that each investment decision making, must be analyzed and evaluated in order to consider the return on invested capital and risk, in order to obtain a decision on the feasibility of the investment.

According to Irani, Z is quoted from the Journal of the Operational Research Society (2010, p917), the investment decision is very important to be evaluated and then mapped to the benefits, costs, and risks that are used to support the decision of whether to invest or not. The purpose of the evaluation is a management activity, to predict or assess how well the SI project meets stakeholder expectations.

KOPWANI (Indonesian Women's Cooperative) is a cooperative established by Indonesian women engaged in various business units spread across Greater Jakarta. KOPWANI has 9 business units namely Corporate Credit, Business Loans, mortgages, KPRS, KOPWANI Village 1 and 2, Commerce, Social Programs, Travel, and Home Flowers. In managing the various business units, KOPWANI has been using MYOB applications to assist business unit of

accounting information systems. MYOB application was implemented in 2003 with the hope of meeting the needs of the organization and generates accounting information that is fast, precise, and accurate.

The scope of evaluation of the optimal use of information systems in KOPWANI include; 1. Optimize the utilization of information system evaluation has been done by KOPWANI in late 2003 was conducted using Cost Benefit Analysis (CBA) and GAP Analysis to get the value of the benefit obtained KOPWANI. 2. Evaluation will discuss on accounting information systems using MYOB applications. 3. The evaluation results will made proposals for the development of integrated accounting information systems.

The purpose of this study, are; 1. Analyse the use of information systems in KOPWANI. 2. Measuring the economic value of the investment costs that been implemented in KOPWANI. 3. Knowing the benefits resulting from the use of information systems, whether these benefits are in accordance with the cost and purpose of the utilization of enterprise information systems or not.

There are three methods used in this study. They are literature, field research, and evaluation methods. Fieldwork conducted by interview, questionnaire distribution, and documentation. While the evaluation method used are Cost Benefit Analysis (CBA) and GAP Analysis.

The benefits of this study are; 1. Provide useful information on the top management to determine the optimal use of information systems. 2. KOPWANI helps to know how much profit and benefit from the use of information systems that do. 3. Results of evaluation of information systems can be use as a reference for further use

II. THEORY

General Theory

Information technology investment is an investment decision in allocating all types of Management Information Systems (MIS), which consists of the total lifecycle cost of the entire project or a piece of a project involving information technology including operating costs of the project after the system has been implemented (Hendarti, 2011).

According to Hendarti (2011), the evaluation of information technology investments must be done carefully and thoroughly because; 1. The amount of funds spent considerable in an investment. 2. Investment on information technology change the way companies work. 3. Information technology investment brings the company's business process changes. 4. Any expenses affected directly and indirectly. 5. The existence of tangible and intangible benefits within company. Accounting Information Systems (AIS) is a subsystem of the Management Information System (MIS) that collect, process, and report information related to the financial aspects of the business event.

Cost Benefit Analysis (CBA) is the process of collecting, comparing, and evaluating the costs associated with the investment, whether in accordance with the benefits and advantages that will come back. The stages conducted in the method of Cost Benefit Analysis (CBA), namely:

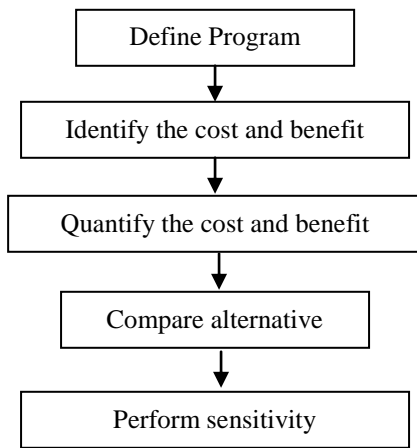


Figure 1. Method of CBA

Cost / Benefit Ratio (CBR) is the present value (present value) of benefits divided by the present value (present value) of the cost. The formula used to calculate the CBR, namely:

$$\text{Cost Benefit Ratio (CBR)} = \frac{PV \text{ Benefits}}{PV \text{ Costs}} = \frac{\sum_{t=0}^n \frac{Bt}{(1+r)^t}}{\sum_{t=0}^n \frac{Ct}{(1+r)^t}}$$

Return on Investment (ROI) is another technique that used in capital budgeting decisions, where the return on investment will compared to the opportunity cost of capital. ROI of a project calculated using the formula:

$$\text{Return on Investment (ROI)} = \frac{\text{Profit}}{\text{Investment Cost}}$$

Net Present Value (NPV) of a project shows the net benefits received by the project over the life of the project at a certain interest rate. NPV can also interpret as the present value of the cash flows generated by the investment. In calculating, the NPV is necessary to determine the relevant interest rate.

The formula for calculating NPV, namely:

$$\text{Net Present Value (NPV)} = \frac{B_0 - C_0}{(1+r)^0} + \frac{B_1 - C_1}{(1+r)^1} + \dots + \frac{B_n - C_n}{(1+r)^n}$$

Payback Period is the period that indicates how long the capital invested in the project can return. The shorter the time required for the return on investment, the more profitable the investment plan.

The formula can be used to calculate the payback period of an IT project, namely:

$$\text{Payback Period (PP)} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}} = \frac{C_0}{C}$$

GAP Analysis

GAP analysis is a method / tool that helps an organization to compare current performance with potential performance. GAP analysis goal is to identify the distance between optimistic allocation and integration of inputs, as well as the achievement now. GAP analysis helps organizations to discover what needs fixing, and what should retain and enhanced.

III. KOPWANI

General Profile KOPWANI

KOPWANI is a cooperative established by Indonesian women engaged in various businesses scattered in JABODETABEK. KOPWANI was founded in May 25, 1975. KOPWANI has nine business units, namely Corporate Credit, Business Loans, mortgages, KPRS, KOPWANI Village I and II, Commerce, Social Programs, Travel, and Home Flowers. To manage the accounting records of the business units, KOPWANI has been using MYOB Premier Software version 3, which has finish installed by the end of 2003.

Information Technology Profile of KOPWANI

Overall costs incurred in conducting initial investment KOPWANI information system are as follows:

Table 1. Initial Investment

Hardware Cost	Rp 53.176.000,-
Software Cost	Rp 11.300.000,-
Training Cost	Rp 10.500.000,-
Total Cost Investment	Rp 74.976.000,-

PC hardware consists of 6, 6 printers, 3 USB Modem, 6 UPS, 1 Projector, 1 Tripod Projector. Software costs consist of Installation and 3 License. In addition, the cost of training for 6 people board.

Operating costs for information technology is including maintenance costs, repair costs, and maintenance costs throughout the information technology used.

Table 2. IT Operational Cost

Year	IT Operational Cost
2004	Rp 2.425.000,-
2005	Rp 4.950.000,-
2006	Rp 3.000.000,-
2007	Rp 4.000.000,-
2008	Rp 2.596.100,-
2009	Rp 1.660.000,-
2010	Rp 3.954.500,-

IV. DISCUSSION

Here is the result of the calculation using the Cost Benefit Analysis (CBA).

Table 3. Result of CBA

Year	CBR	ROI	NPV	Payback Period
2003	-	0.000000	Rp 553.930 ,819	7 Bulan
2004	10.0410	10.041008		
2005	7.0363	7.036305		
2006	8.5212	8.521151		
2007	11.4847	11.484702		
2008	13.0241	13.024072		
2009	7.8242	7.824168		
2010	7.8823	7.882252		

From the calculation above can be summarizing, as follows:

a. Analysis of the calculation results with Benefit Cost Ratio (CBR) from 2004 to 2010 showed results above one. Benefit Cost Ratio calculation results (CBR) showed that the value of the benefits of the investment value of information systems.

b. Results of analysis by calculating the Return On Investment (ROI) from 2004 through 2010 show the results of more than 1. Calculation results Return On Investment (ROI) shows investment in information systems KOPWANI considered feasible.

c. Results of analysis with the calculation of Net Present Value (NPV) from 2004 to 2010 showed a positive number. Because cash flow after implementation is sufficient to repay the invested capital and provide the required rate of return on capital. Net Present Value (NPV) of IDR 553.930.819, -. Net Present Value calculation results show worthy information systems investments, since the acquisition of Net Present Value (NPV) of the positive value of the investment.

d. Results of analysis with the calculation of payback period from 2004 to 2010 showed a positive number. The Payback Period is 7 months, less than 1 year. It can be concluded payback period of investment fast enough for information systems.

As for the of GAP Analysis is done by distribution of questionnaires to 30 respondents in KOPWANI.

Table 4. GAP analysis

Part	Alt No	Expected	Performance	GAP
Variabel	Question	Expected	Performance	GAP
A System Easyness	1	3,067	3,233	0,166
	2	2,933	2,933	0
	3	2,633	2,867	0,234
	4	2,867	3,1	0,233
B System Ability	5	2,967	3,233	0,266
	6	2,733	2,833	0,100
	7	2,767	2,8	0,033
	8	2,567	2,833	0,266
C System Security	9	2,8	1,5	-1,300
	10	1,7	3	1,300
	11	2,3	3,3	1,000
	12	2,1	2,5	0,400
	13	2,8	2,4	-0,400
	14	2,1	2,4	0,300
D Access Speed	15	3,3	3,033	-0,267
	16	2,633	2,767	0,134
	17	2,333	2,733	0,400
	18	2,633	2,633	0,000
E Training	19	3,4	2,8	-0,600
	20	2,4	2,4	0,000

Based on the table, it can be seen how large the distance or gap between user expectations and the performance of the system against the current system. There are some important points that can be analysing related to the performance of the system, namely:

Part A. Ease of use of the system is considered very well, where the GAP analysis, all the results are positive. Display MYOB Premier Version 3 has good graphics or user friendly. Menu or submenu displayed too simple, quickly and easily understood by users.

Part B. The ability of the current system is very good, as indicated from the results of a positive GAP analysis. MYOB Premier Version 3 also can result in financial statements that fit like a chill and the resulting data is accurate.

Part C. Broadly speaking MYOB Premier Version 3 has a security system, which was quite well. However, users feel the system log in and log out ineffective. Moreover, the difficulty in changing the data that is non-confidential where the GAP analysis showed negative results (- .400).

Part D. Users feel in conducting retrieval / withdrawal data from the database are fast. However, the speed of the data storage from the GAP analysis (- .267) felt bad, because of downtime while data storage.

Part E. In terms of training or training based on the GAP analysis showed negative results (-0.600), the user feels an additional basic knowledge of MYOB applications during training, but the training provided is not too deep

V. CONCLUSION

Based on the the previous chapters, these are the things that can inferred from the results of evaluation of the optimal use of MYOB Premier Version 3 on KOPWANI, namely:

1. Based on the analysis and evaluation using the Cost Benefit Analysis (CBA) it shows that the MYOB Premier Version 3 provides a positive value.
2. Based on evaluation using GAP Analysis on the accounting KOPWANI, it was concluded that there are some things that have been fulfilled in the system such as:
 - a. Ease and capabilities of MYOB Premier Version 3 application in meeting the needs of bookkeeping considered very good.
 - b. Performance security system MYOB Premier Version 3 was quite well. However, users feel the system log in and log out are not yet effective.
 - c. Access speeds at the time of withdrawal / data retrieval considered quickly, but it still had downtime and error during data storage.
 - d. In addition, there are user expectations regarding the procurement of regular training to improve skills and increase knowledge about accounting information systems they use. However, in fact the training provided has not been able to meet the expectations of users.
3. Based on the results of the interviews, it concluded that the MYOB Premier Version 3 KOPWANI help the process of accounting records as compared to the manual system is tedious. However, MYOB Premier Version 3 is not too optimal because it still has the disadvantage that has not been able to meet the needs.

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