

DESIGNING OF PERFORMANCE MEASUREMENT SYSTEM PT KIDANG KENCANA SAKTI BY USING BALANCED SCORECARD

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Abstract

PT. Kidang Kencana Sakti is a company engaged in the gas turbine maintenance services. This company employed performs a financial aspect to evaluate company's performance. However, this is unable to control the company's operational process, customers, and learning and growth. Therefore, it is necessary to create a measurement tool that is in line with the vision and mission of the company. This study aims to develop a balanced scorecard to measure the company's performance. The final result of this final project is determine the strategies based on the company's vision and mission, to determine the performance indicators. The weighting of each indicator for financial perspective is 31%, customer perspective is 45%, internal business process perspective is 15%, learning and growth perspective is 9%. The highest weighting score is the customer perspective.

Keywords – Balanced Scorecard (BSC), Analytical Hierarchy Process (AHP), Performance Measurement

1. Introduction

Every good company should have the right strategies for human resources. Human Resources (HR) Management is designing management systems to achieve organizational goals by using human talent effectively and efficiently (Mathis and Jackson, 2010). Human Resource in the company should have a good quality, that is why the company should have a performance management system to measure their work, so the company can stand against the competitor and develop as the company follow their vision and mission. Performance management should originate with what the organization needs to accomplish to meet its strategic objectives. Each employee has some contribution to make to those more significant objectives through his or her job. In a sense, a strategic plan for the organization (Mathis and Jackson, 2010). Performance measurement is a process of steering mission and vision and objectives of the organization and making these measurable through Key Performance Indicators (KPI) in order to be able to take the right actions to keep the organization on the track (de Waal and Kourtit, 2013).

The development of an increasingly competitive business world has caused changes in competition in terms of marketing competition, management of human resources, and handling of transactions between companies and consumers and companies with other companies. According to the consulting agency Price Waterhouse Coopers, there are at least 5 industrial sectors that will grow rapidly in Indonesia in 2018 as technology advances, such as Commerce (Virtual Commerce), Agriculture, Health, Manufacturing, and Retail and Consumption. In an effort to face the intense competition, companies are required to be more professional in managing their business so they can expand their business to a greater level

PT Kidang Kencana Sakti is a company that works for the overall maintenance, repair and rehabilitation of steam and gas turbines and generators. The Company is Located at Jl. R.A.A Wiranata Kusumah No.18, Baleendah, Bandung, West Java 40375. The company has repaired and rehabilitated steam and gas turbines and generators in several branches of the North Sumatra State Electricity Company (PLTG Payapasir, Glugur, Teluk Lembu, Labuan Angin PLTU), South Sumatra (PLTG Lampung, Kramasan, Talangduku, Pauhlimo, PLTU Ombilin, Bukit Asam), South Kalimantan (Trisakti PLTG, Asam Asam PLTU), West Kalimantan (Siantan PLTG), South Sulawesi (Tello PLTG), West Java (Kamojang PLTP, Gunung Salak PLTP, Labuan PLTU), Central Java (Semarang PLTG, Cilacap, Cirebon, PLTU Lontar), East Java (PLTG Gresik, PLTG Grati), Province of Bali (PLanggaran Gas Pesanggaran, PLTG Pemaron), DKI Jakarta (PLTG Muara Karang, Muara Tawar).

PT Kidang Kencana Sakti seeks to optimize its productivity in order to continue to grow. Like companies in general in Indonesia PT Kidang Kencana Sakti still uses conventional techniques in analyzing organizational success. This conventional technique is easier to apply because the company only see from the financial side only. PT Kidang Kencana Sakti experienced symptoms of an unclear strategy caused by using conventional techniques. Conventional techniques used by PT Kidang Kencana Sakti make the company pay less attention to other factors such as Customer Perspective, Internal Business Process Perspective and Learning and Growth Perspective. Measuring company performance through financial performance is relatively less reflective of success indicators because the size of the financial performance cannot show the company's goals and how to improve the company's performance (Kaplan and Norton, 1996).

A performance measurement that only focuses on the financial sector is also unable to explain the company's track record and lack of ability to bring the company towards change for a better company future (Kaplan and

Norton, 1996). In order to measure the company's performance required a comprehensive measurement approach, namely the concept of the balanced scorecard, which measures the performance of the company based on financial factors, customer, internal business process and learning and growth. In line with the company's main objective to make a profit and in the existing performance management company using financial to measure the performance management, in this research is more compatible to use Balanced Scorecard as a method to create a Performance Management System in PT Kidang Kencana Sakti.

The objective of this research is to design performance management system of PT Kidang Kencana Sakti by using Balanced Scorecard method by assessing four perspectives that are Financial, Customer, Internal Business Process, and Learning and Growth. Based on the description above have been found that it was important for PT Kidang Kencana Sakti to have tools used to support the implementation of performance management by using the Balanced Scorecard method as a strategic performance management system. Therefore, it is proposed Balanced Scorecard method to design and measure a company's performance management system with elements contained in Balanced Scorecard in research entitled " Designing Of Performance Management System PT Kidang Kencana Sakti By Using Balanced Scorecard".

2. Basic Theory and Research Methodology

2.1 Basic Theory

2.1.1 Performance Measurement

Performance measurement is a process of steering mission and vision and objectives of organization and making these measurable through Key Performance Indicators (KPI) in order to be able take the right actions to keep the organization on the track (de Waal and Kourtit, 2013). The benefits of performance measurement in a company as follows: (1) High Result Orientation, (2) Better Strategic Clarity, (3) High People Quality and (4) Higher Organizational Quality (de Waal and Kourtit, 2013)..

2.1.2 Balanced Scorecard

The Balanced Scorecard translates mission and strategy into objectives and measures, organized into four different perspectives: financial, customer, internal business process, and learning and growth. The scorecard provides a framework, a language, to communicate mission and strategy. It uses measurement to inform employees about the drivers of current and future success. By articulating the outcomes the organization desires and the drivers of those outcomes, senior executives hope to channel the energies, the abilities, and the specific knowledge of people throughout the organization toward achieving the long-term goals. (Kaplan & Norton, 1996)

2.1.3 Analytical Hierarchy Process

The Analytic Hierarchy Process is a general theory of measurement. It is used to derive ratio scale from both discrete and continuous paired comparisons in multilevel hierarchic structures. These comparisons may be taken from actual measurements or from a fundamental scale that reflects the relative strength of preferences and feelings (Saaty & Vargas, 2012).

2.2 Conceptual Model

Conceptual model is a picture that shows the mindset of looking at and settle existing problems. the following conceptual model for this research:

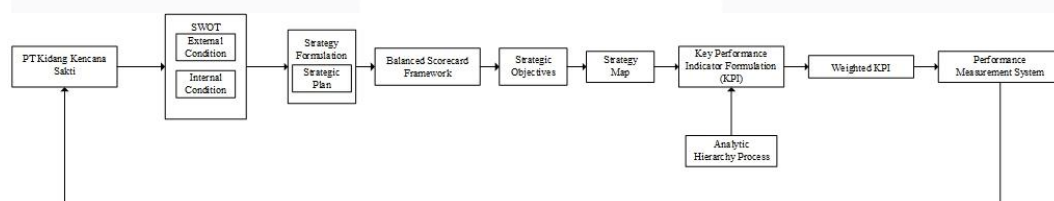


Figure 1 Conceptual Model

Based on figure 2, the first step to design performance management measurement is to see the vision and mission from PT. Kidang Kencana Sakti, vision and mission is the thing that company want to accomplished, then see strategies that already been applied in the company. Then we define both into balance scorecard perspective which is financial, customer, internal business, and learning and growth perspective. Then the result is strategy map and key performance indicator.

3. Discussion

3.1 Vision and Mission

PT. Kidang Kencana Sakti has vision embodies the foremost in the field of comprehensive maintenance for Gas Turbines and Steam Turbines. To realize its vision, PT. Kidang Kencana Sakti has missions that are:

1. Building reliable, professional and innovative HR in achieving customer satisfaction

2. Using equipment, materials and work scope that are in accordance with customer requirements and manufacturer's standards
3. Providing the best service to every customer
4. Increasing company profits so that it can support the company's plans and development

3.2 SWOT Analysis

Based on research that has been done about the general description and vision and mission of PT. Kidang Kencana Sakti, and seeing the current condition of PT. Kidang Kencana Sakti, to analyze the strategies used and the performance that has been produced by the company, It can be seen several factors which are internal factors that include the strengths and weaknesses of the company, as well as external factors that include the opportunities and threats of the company. Based on the analysis, it can be concluded internal factors and external factors in the table below:

	<i>Strength</i>	<i>Weakness</i>	<i>Opportunity</i>	<i>Threats</i>
1	Evaluation is done every semester	Lack of detail planning	Positive trend in increase power plant facility	Unstable political environment
2	Applying continuous Improvement concept	Lack of vital equipment	Hard for new player to enter because of high entry barrier	Complicated administration requirement from customers
3	Certified with ISO	Lack of information about services offer	New Technology	Competitive market
4	C-level exec have broad network	Lack of human resources.	The need for turbine maintenance and repair services is always there.	Volatile markets
5	Has a definite organizational structure (clear command and responsibility lines).	Limited highly skilled human resources		
6	More than 10 years experience in the field	Expensive production costs		

3.3 Strategy Formulation

The strategy formulation is based on the results of the SWOT analysis by combining the various indicators contained in strengths, weaknesses, opportunities, and threats. Merging using TOWS Matrix. The resulting strategy will be used as a guide in the formulation of strategic objectives in the next step. Based on SWOT analysis and discussion, the management set a new strategy. Here is the preparation of strategy formulation using TOWS matrix :

<p>INTERNAL</p> <p>EXTERNAL</p>	<p>Strength</p> <ol style="list-style-type: none"> 1. applying continuous Improvement concept 2. Certified with ISO 3. C-level exec have broad network 4. Has a definite organizational structure (clear command and responsibility lines). 5. More than 10 years experience in the field 	<p>Weakness</p> <ol style="list-style-type: none"> 1. lack of vital equipment 2. Lack of information about services offer 3. Lack of Branding 4. Limited highly skilled human resources 5. Expensive production costs
<p>Opportunity</p> <ol style="list-style-type: none"> 1. Positive trend in increase power plant facility 2. Hard for a new player to enter because of high entry barrier 3. New Technology 4. The need for turbine maintenance and repair services is always there. 	<p><i>S-O</i></p> <ol style="list-style-type: none"> 1. Expanding market share and profitability (S21 S2, S3, S4, S5, O1, O3) 2. Continuously improve services process to maintain a high level of standards (O2,O1,S2) 	<p><i>W-O</i></p> <ol style="list-style-type: none"> 1. Provide sufficiently clear information about services (W2,O1) 2. Create the company's image by becoming a trusted provider of turbine maintenance and repair services.(W1,W3,O1,O4)
<p>Threat</p> <ol style="list-style-type: none"> 1. Unstable political environment 2. Complicated administration requirement from customers 3. Competitive market 4. volatile markets 	<p><i>S-T</i></p> <ol style="list-style-type: none"> 1. Strengthen relationship with government official (T1,S3) 	<p><i>W-T</i></p> <ol style="list-style-type: none"> 1. Optimization of human resources effectively and efficiently (W4,T3) 2. Pressing company expenses(T3,W5)

3.4 Data Processing

In the design of performance management system, formulated strategy, strategy, and KPI as follows :

Table 3 . 4 1 Strategy, Strategy Objective, and KPI

Perspective	Strategy	Objective	KPI
Financial	Pressing company expenses	Increase cost efficiency	Yearly operating expenses
	Expand profit opportunities	Increase revenue growth	Revenue Growth Rate
		Increase profitability	Return of Equity (ROE)
			Return on Assets

			Net Profit Margin
Customer	Provide sufficiently clear information about the product	Decrease customer complaint	Percentage of customer complaint
		Increase customer satisfaction	Percentage of customer satisfaction
	Create the company's image by becoming trusted provider of turbine maintenance and repair services	Increase customer loyalty	Customer Retention Rate
		Increase customer growth	Customer Acquisition Rate
Internal business process	Continuously improve services process to maintain high level of standards	Decrease Defect Rate of Services	Percentage of Defect Rate
		Increase quality of services	Planned Maintenance Percentage
	Strengthen relationship with government official	Create Partnerships	Amount of Established partnerships
Learning and growth	Optimization of human resources effectively and efficiently	Improve of employee competence	Amount of Training
			Employee Retention Rate
		Increase productivity	Amount of Employee that achieve the target
			Percentage of Attendance

In the results of the draft it is necessary to have weighting for each perspective, strategy, strategy objective, and KPI because each instrument has different importance level. weighting is done using AHP. besides, it is also necessary to test the consistency of the instrument. the instrument is said to be consistent if the value of consistency is not more than 10%.

3.5 Weight and Consistency Test

Weighting and consistency tests are conducted on each perspective, strategy, strategy objective and KPI. This is done because each perspective, strategy, strategy objective and KPI have different importance level. The weighting and consistency test for each instrument is performed using AHP pairwise comparison ratio. Weighting is done by filling out questionnaires by three people who are considered as experts in the company. The result of the weighting is then processed using Microsoft Excel software. Here is the result of the weighting :

Table 3. 5 1 Normalization of Weight

Normalization Weight							
Perspective	Weight	Strategy	Weight	Strategy objectives	Weight	KPI	Weight
Financial	31%	Pressing company expenses	6%	Increase cost efficiency	6%	Yearly operating expenses	6%
		Expend profit opportunities	25%	Increase revenue growth	5%	Revenue Growth Rate	5%
					20%	Return of Equity	7%

				Increase profitability		Return on Assets	5%
						Net profit margin	8%
Customer	45%	Provide sufficiently clear information about services	8%	Decrease level of customer complaints	7%	Percentage of customer complain	7%
				Increase customer satisfaction	1%	Percentage of customer satisfaction	1%
	37%	Create the company's image by becoming trusted provider of turbine maintenance and repair services	Increase customer loyalty	30%	Customer Retention Rate	30%	
			Increase customer growth	7%	Customer Acquisition Rate	7%	
Internal Business Process	15%	Continuously improve services process to maintain high level of standards	9%	Decrease defect rate of services	1%	Percentage of Defect Rate	1%
				Increase quality of services	8%	Planned Maintenance Percentage	8%
		Strengthen relationship with government official	6%	Create partnerships	6%	Amount of Established partnerships	6%
Learning and Growth	9%	Optimization of human resources effectively and efficiently	9%	Improve of employee competence	4%	Amount of Training	1%
						Employee Retention Rate	3%
				Increase productivity	5%	Amount of Employee that achieve the target	4%
						Percentage of Attendance	1%

4. Analysis
4.1 Perspective Analysis

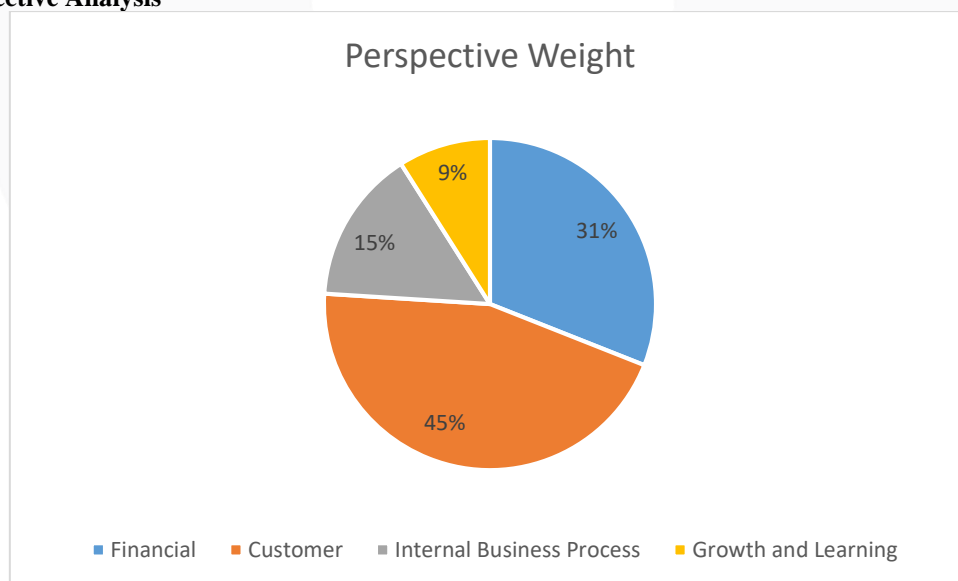
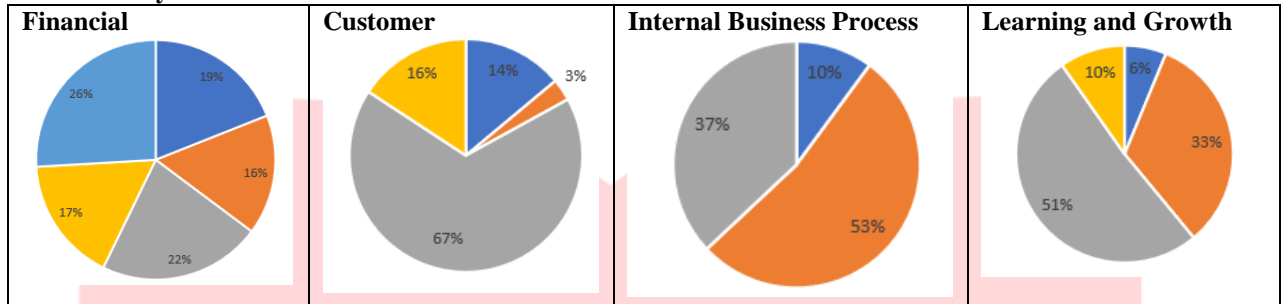


Figure 4 . 1 1 4 Perspective

Customer perspective were in the first place with score 45%. Second place is financial perspective with 31% score. Internal business process is 15% , learning and growth is 9%.

4.2 KPI Analysis



4.2.1 Financial KPI

Based on the picture can be seen that there are five performance indicators on the financial perspective and the highest score is net profit margin which have 26% score, the second highest score is return of equity which have 22% score, the third highest score is operating expenses which have 19% score. The fourth performance indicator is return on assets which have 17% score. The fifth is revenue growth rate which have 16% score.

4.2.2 Customer KPI

Based on the picture can be seen that there are four KPI on the perspective of the customer and who has the highest weight is customer retention rate which have 67% score. Second highest weight customer acquisition rate which have 16% score. Third highest weight is percentage of customer complain which have 14% score. Fourth and last highest weight is percentage of customer satisfaction which have 3% score.

4.2.3 Internal Business Process KPI

Based on the picture can be seen that highest weight is Planned maintenance percentage which have 53% score, second is amount of established partnerships which have 37% score, and third is percentage of defect product which have 10% score.

4.2.4 Learning and Growth KPI

Based on the picture can be seen that highest weight is amount of employee that achieve the target which have 51% score, second highest is employee retention rate which have 33% score, third highest is percentage of attendance which have 10% score, and the fourth is amount of training which have 6%.

5. Conclusion

The Balanced Scorecard as a company performance measurement tool has the advantage that measurement and evaluation is carried out through 4 interrelated perspectives, oriented to financial and non-financial aspects. 4 perspectives used in the Balanced Scorecard are financial perspective, customer perspective, internal business perspective processes and learning and growth perspectives. Based on the results of the design that has been done, the following conclusions can be taken:

1. To describe the performance of PT. Kidang Kencana Sakti it has been formulated 16 KPI in four perspective Balance Scorecard, this KPI is derived from vision, mission, strategy, and strategy objective to describe the state of performance in PT. Kidang Kencana Sakti.
2. Based on the measurement result, Customer Perspective have the first highest weight which is 45%. The second highest weight is financial perspective which have 31% score. The third highest weight is internal business process which have 15% score, and learning and growth which have also 9% score.

Reference List

- Audina, G. O. et al. (2017) 'Perancangan sistem pengukuran kinerja organisasi pada pt xyz dengan metode balanced scorecard', 4(1).
- Chan, A. P. C. and Chan, A. P. L. (2004) 'Key performance indicators for measuring construction success', *Benchmarking: An International Journal*, 11(2), pp. 203–221. doi: 10.1108/14635770410532624.
- Fu, H. and Lin, S. (2009) 'Applying Ahp To Analyze Criteria of Performance Measurement for National Energy Promotion Projects', 7(1), pp. 70–77.
- Haslinda, A. (2009) 'Evolving Terms of Human Resource Management and Development', *The Journal of International Social Research*, 2/9, pp. 180–186. doi: 10.1126/science.aac5677.

- Kaplan, R. S. and Norton, D. P. (1996) 'Robert S. Kaplan, David P. Norton-The Balanced Scorecard_ Translating Strategy into Action -Harvard Business Press (1996).pdf', Harvard Business Press. doi: 10.1109/JPROC.1997.628729.
- Mathis, R. L. and Jackson, J. H. (2010) Human Resource Management, South-Western Cengage Learning. doi: 10.1111/j.1467-9280.2006.01785.x.
- Michalska, J. (2005) 'The usage of the Balanced Scorecard for the estimation of the enterprise's effectiveness', *Journal of Materials Processing Technology*, 162–163(SPEC. ISS.), pp. 751–758. doi: 10.1016/j.jmatprotec.2005.02.227.
- Ofori, D. F., Sekyere-Abankwa, V. and Borquaye, D. B. (2012) 'Perceptions of the Human Resource Management Function among Professionals: A Ghanaian Study', *International Journal of Business and Management*, 7(5), pp. 159–178. doi: 10.5539/ijbm.v7n5p159.
- de Waal, A. and Kourtit, K. (2013) 'Performance measurement and management in practice: Advantages, disadvantages and reasons for use', *International Journal of Productivity and Performance Management*, 62(5), pp. 446–473. doi: 10.1108/IJPPM-10-2012-0118.
- Wehrich, H. (1982) 'The TOWS Matrix A Tool for Situational Analysis', *The TOWS Matrix A Tool for Situational Analysis*, 15(2), pp. 54–66. doi: 10.1136/bcr-2017-222123.