

DESIGNING COMPANY PERFORMANCE MEASUREMENT SYSTEM USING BALANCE SCORECARD APPROACH

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ABSTRACT

This research aimed to design how to measure company performance by using balance scorecard approach in coal transportation services industry. Depth interview was used to obtain qualitative data determination of strategic objectives, key performance indicators, strategic initiatives, and in charge units for each balanced scorecard perspectives while the quantitative data were obtained from weighting through questionnaires and analyzed using paired comparison to get a perspective what mostly affected the performance of the company. To measure the achievement of corporate performance, each KPI used (1) the scoring system with the methods that higher is better, lower is better and precise is better; (2) traffic light system with the help of green, yellow, red for identification of target achievement. This research result shows that in the balance scorecard perspective, the most influences on the overall performance of the company include the customer's perspective (31%), financial perspective (29%), internal business processes (21%), learning, and growth 19%.

Keywords: balance scorecard, paired comparison, coal transportation service

ABSTRAK

Penelitian ini bertujuan untuk merancang pengukuran kinerja perusahaan dengan menggunakan pendekatan balance scorecard di industri jasa pengangkutan batu bara. Data kualitatif diperoleh melalui indepth interview digunakan untuk menentukan sasaran strategik, indikator kinerja utama, inisiatif strategi dan penanggungjawab setiap divisi setiap perspektif balance scorecard, sedangkan data kuantitatif digunakan untuk pembobotan melalui kuesioner dan dianalisis dengan menggunakan metode paired comparisson untuk mendapatkan perspektif yang paling berpengaruh terhadap kinerja perusahaan. Ukuran pencapaian kinerja perusahaan dari setiap KPI menggunakan; (1) scoring system dengan bantuan metode higher is better, lower is better dan precise is better; (2) traffic light system dengan menggunakan bantuan warna hijau, kuning, merah untuk identifikasi pencapaian target. Penelitian ini menyimpulkan bahwa perspektif yang paling berpengaruh terhadap kinerja perusahaan adalah perspektif pelanggan (31%), kemudian diikuti oleh perspektif keuangan (29%), proses internal bisnis (21%), dan pertumbuhan dan pembelajaran (19%).

Kata kunci: balance scorecard, paired comparison, jasa pengangkutan batu bara

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INTRODUCTION

The financial crises in Europe and the United States have a negative impact on the growth of the global economy, and one effect of the crisis is weakening coal prices in the international market. Dynamic external environmental conditions result in high competition in coal transportation service industry; therefore, the

companies have been trying to maintain their stability and continue to develop their business that they can be ahead of the competition.

PT Trans Power Marine, Tbk (TPM) is one of the coal transportation services for national and regional areas in Indonesia using the barge from the loading port to the mother vessel. Measurement of the performance

achievement of PT TPM at present is based on the achieving financial aspects i.e. if revenues increase, the company's performance achieved is good, and vice versa. Therefore, for its goals and strategies, PT TPM has outlined its vision, missions and business strategies. Luis and Biromo (2007) argue that the financial statement is an activity that occurs in the past and does not translate the strategy for the future. The views of these experts are associated with the objectives of the company so that it can compete well and become a world-class company; therefore, the company is required to improve the assessment system of more comprehensive performance i.e. it should not only be based on the financial aspect but also on other internal and external management aspects. Internal aspect aims to prevent conflicts of interest among the management aspects in the organization's internal division such as finance, marketing, technical, operation and HR, while the external aspect aims to identify the wishes of the customer. Therefore, in terms of corporate strategy at the present, it needs to be translated into an action strategy that is easily understood and implemented by all levels of the organizational members of PT TPM.

Kaplan and Norton in 1992 introduced a method to enhance the company's performance measurement and translate the corporate strategy into an action strategy that is easily understood by all levels of the organization through the research conducted by introducing the balance scorecard method or abbreviated with BSC. In regard to this study, PT TPM intends to enhance the company's performance measurement system by applying the balanced scorecard method.

Based on this background, the objectives of this study were: (1) to describe the vision and missions of the company that they are the target of the strategy and should be easily understood and divided into four balanced scorecard perspectives, (2) to identify benchmarks and key performance indicators for the determination of four perspectives of the balanced scorecard, (3) to establish the major factor in the implementation of the balanced scorecard in the company so that it can run effectively.

METHODS

The types of data required in this study included qualitative and quantitative data. Qualitative data in the form of respondents' statements were obtained

through discussions with management and staff experts to describe the vision, strategic objectives, Key Performance Indicators (KPIs), strategic initiatives as well as formulation of the strategy map, while the quantitative data were expressed in numbers i.e. the data weighting strategic objectives and KPIs of the four balanced scorecard perspectives. Sources of data used in this study included primary and secondary data where the former was obtained through interviews with respondents from the management and employees of PT TPM and the latter was obtained from the documentation of the internal company data report, literature in the form of journals, and theses.

Data and information collection techniques included: (1) direct observations in the company of PT TPM, (2) in-depth interviews carried out by elements of the management and staff experts of PT TPM, (3) and literature study by reading, discussing, and studying previous research related to this study.

The method to determine the respondents was carried out by intentionally (purposive sampling) from the top management to staff experts. The selection of respondents was based on the consideration of their competence and capacity in each field.

The stages of data processing and analysis are described as follows:

- Describing the vision and missions of the company through discussions with the management and staff experts in the internal enterprise to determine the strategic objectives and key performance indicators (KPIs) grouped into four balanced scorecard perspectives: financial perspective, customer, internal business processes and learning and growth.
- Creating a strategy map to determine the causal relationship from each perspective of the balanced scorecard.
- Performing the weighting for each goal and KPI strategy from the four perspectives of the balanced scorecard and analyzing them using paired comparison techniques to determine the most influential perspective on the performance of the company.
- Conducting scoring system where higher is better, lower is better and precise is better and the method of the traffic light system to determine the achievement of KPI performance against targets on the four balanced scorecard perspectives.

RESULTS

This chapter describes the stages in the process of designing a company's performance measurement system using the BSC from the translation of the vision and missions of the company and the design of the performance of this chart.

The translation of vision and missions of the company

The vision and missions of the company were translated into factors of strategic goals based on the discussion in depth interviews with the management and grouped the four perspectives of the balanced scorecard, namely, customer perspective, financial, internal business processes and learning and growth.

The achievement of the strategic objectives of the company was presented by lag indicators and lead indicators through in-depth interviews with the management and internal expert staff for each of the strategic objectives towards the four perspectives previously determined. Table 1 describes the results of the formulation of strategic goals and performance measures through lag indicator and lead indicators.

The design of performance achievement system

The process of designing company performance appraisal chart began with the weighting of the factors of strategic objectives and indicators obtained by the management and some of the experts in the company's internal staff for each balance scorecard perspective. The results of the weighting were then analyzed using a paired comparison method to obtain the most influential aspect in the performance measurement. Furthermore, the determination of in charge division for each of the strategic objectives and KPI was based on the four perspectives of the balanced scorecard corporate organizational structure that included Division of Procurement and Logistics, Business and Development, Finance (Accounting and Tax, Finance and Treasury, Legal, Information and Technology), Operational (Technical, Operation and Commercial) and HRD (Human Resources and General Affairs) to facilitate the balanced scorecard case-cading to the individual level.

Customer perspective

Based on Table 2, in customer perspective section, customer satisfaction index obtained the highest score (11%) indicating that index measuring customer satisfaction was the most influential aspect to the achievement of strategic objectives of satisfaction and customer loyalty where the in charge division is under the Business Development (BD) department.

Financial perspective

Based on Table 2, in financial perspective section, Return on Assets (ROE) obtained the highest score (14%) indicating that as a public company it was very concerned with the rate of return on capital company investors so that investors would be more confident and the company capital became strong. The in charge division is under by the Finance department (FIN).

Internal business process perspective

Based on Tabel 2, in internal business process perspective section, customer retention obtained the highest score (5%) indicating that the possibility of customers for switching their vendors was very high; therefore, providing added values and giving the best service to customers are two strategies to retain customers in internal business process perspective. The in charge division is under the Operation Department (OPS).

Learning and growth perspective

Based on Tabel 2, in learning and growth perspective section, increase of ERP system obtained the highest score (9%) indicating that, to improve effectiveness and productivity of the company, a system that integrates with all operational sites is necessary. The in charge division is under the by Human Resources and Development (HRD).

Based on Table 2, the overall performance measurement showed that customer perspective obtained the highest score (31%) indicating that customer perspective gave the most contribution to the overall company performance. Based on discussions with the management and staff experts in internal company in compensating the fluctuating coal market conditions and intense competition in the same industry, turn over customer will be easier and faster; therefore, providing

the best service to customer is very necessary. However, the lowest score was obtained by learning and growth perspective (19%) indicating that this perspective gave less contribution to the company performance, and the reason for this is that the resources of this company are very strong. Moreover, based on discussions with the management and staff expert in HR Division & GA, level of comfort and engagement in this company are very high, because the management implements the kinship system with a very strong personal approach.

Strategy Map of PT TPM

Learning and growth perspective is also called intangible assets i.e. as human resource infrastructure; therefore, the company strives to constantly improve the employee competence and engagement supported by the updated information technology systems. Updated technology can improve the performance in terms of creativity, efficiency and productivity, thus resulting in the provision of the best customers services.

Table 1. The formulation of strategic objectives by lag and lead indicators

Strategic objectives	Lag indicators	Lead indicators
Customer perspective		
C1 Improvement in customer satisfaction and loyalty	Customer satisfaction index	Company information can be accessed easily and quickly, on time delivery of cargo, responses in terms of handling the problem
C2 Positive energization to community	of business disruption by the community	Development of a good communication system with local resources for the community. Development a CSR system, especially in the area of operations. Provision of quotas on local resources to be included in the organization's members
C3 Improvement in relationships and good	New customers; Existing customers	Increase in the number of new and old customers
C4 Improvement in engagement with the Government	Compliance to regulation	A system which follows the company's operational standards required the by Government
Financial perspective		
F1 Increase in revenue	Revenue from new customers Revenue from existing customers Return on Asset (ROA)	Increase in number of customers On time delivery of cargo Amount of cargo sent
F2 Growth of shareholder value	Return on Equity (ROE)	Improvement of company productivity
Internal business process perspective		
O1 Improvement in the quality of ship maintenance	Availability Demurage Despatch	The use of spare parts of qualified vessels Implement of planned maintenance system
O2 efficiency in operating costs	% fuel consumption to revenue; % charter to revenue	Productivity of company performance
O3 Health, Safety and Environment (HSE) compliance	Lost Time Injury (LTI); Recordable Injury rate (RIR)	Improvement of safe working environment
O4 Management procurement	On time order schedule; The best quality and price	Rapid procurement of parts of high quality
O5 Increase in the best service to customers	Customer retention	Customer satisfaction
Learning and Growth Perspective		
G1 Improvement of employee engagement and competency	Employee engagement index; Competency gap index	Reduction in employee turn over
G2 Information systems and the latest technology	Improvement in ERP system	Easy and fast monitoring system

Table 2. The results of KPI Weighting and Divisions in charge of the four perspectives

Strategic objectives	Weights (%)	Key performance indicator (%)	Weights	PIC division
Improvement in customer satisfaction and loyalty	11	Costumer satisfaction index	11	BD
Positive energization to community	5	# of business disruption by community	5	BD
Improvement in relationships and good cooperation with customers	10	# new costumer	5	BD
		# existing costumer	5	BD
Improvement in engagement with the Government	5	compliance to regulation	5	BD
Customer perspective			31	
Increase in revenue	15	Revenue from the existing costumers	6	FIN
		Revenue from the new costumers	6	FIN
		Return on Asset (ROA)	3	FIN
Growth of shareholder value	14	Return on Equity (ROE)	14	FIN
Financial perspective			29	
Improvement in the quality of ship maintenance	4	Availablility	1	OPS
		Demurage	2	OPS
		Despatch revenue	2	OPS
efficiency in operating costs	5	Fuel to revenue	2	OPS
		Charter to revenue	2	OPS
Health, Safety and Environment (HSE) compliance	4	LTI rate frequency	2	OPS
		Recordable injury rate	2	OPS
Management procurement	2	On Schedule time order	1	OPS
		The best quality and price	1	OPS
Increase in the best service to customers	5	Costumer retention	5	OPS
Internal business process perspective			21	
Improvement of employee engagement and competency	10	Employee engagement index	5	HRD
		Competency gap index	5	HRD
Information systems and the latest technology	9	Improvement of ERP System	9	HRD
Learning and growth perspective			19	

Internal business process perspective is also as an addition of new sources of revenue including innovation process, operation and after-sales service. Innovation processes are carried out by improving maintenance quality of ships, so the availability of vessels remain high. In internal procurement, it always to get the best price and quality accurately and quickly. In the operation process, the company implements operational cost efficiency, especially in terms of fuel consumption which gets the second rank of total fixed expenses. The objective of the application of health safety and environment (HSE) for all employees in carrying out their activities at PT TPM is that they can work safely and healthily and care for the environment. Application of appropriate HSE in any operational activity will affect the improvement of quality of repairs and provision of the best service to customers

since safe and comfortable working atmosphere will increase employee productivity.

Customers are the end users of what the company produces, in this case, they are the coal transportation services users; therefore, the company assumes that customers are the main source of company revenue. Thus, improving good relationship and cooperation with customers can increase customer satisfaction and loyalty, and eventually will increase the company revenue. Beside customers, social responsibility of the government and public particularly in a operation area, the company should be able to give positive energy to the local community so that the operations can be run safely and smoothly without any resistance from the community.

Financial perspective on traditional strategies serves as primary barometer in measuring company performance. In balanced scorecard method, financial perspective is the final result of all corporate strategy processes; therefore, PT TPM determines two strategic objectives in the financial perspective, i.e. increasing the company revenue and sustaining the shareholder value growth, and the revenues are generated from new and old customers. The outline in Figure 1 describes the strategy map of PT TPM as causal relationship of each balanced scorecard perspectives, ranging from human resource infrastructure in learning and growth perspective, internal business process, customer and financial perspective.

Balance Scorecard Chart

The achievement of company performance is highly dependent on scores of each KPI; therefore, it is necessary to use a scoring system and traffic light system as signs whether the KPI achieves the target or not. Determination of traffic light system was based on higher is better, precises is better and lower is better whereas traffic light system method is to facilitate and understand the performance achievement with colors (red, yellow, green). Limits of each color was determined through discussions with the management and staff expert in the internal company. Nurcahyanie (2008) states that (1) red indicates that KPI has not

achieve the target or the achievement was below target, so it is necessary to improve it; (2) KPI Score Limit shows that if KPI is <60, the color is yellow indicating an achievement but needs to be improved; and (3) KPI Score Limit shows if KPI is 60<KPI<80, the color is green indicating the perfect target. Score Limit: KPI>80.

Table 3 shows the outline of performance measurement simulation with quantitative data taken from Prospectus Company of 2013. The results showed that the sixteen KPI were green, indicating that the company performance target had been achieved, and one KPI was red i.e. new customer, indicating that the target had not been achieved. Based on discussions with the staff experts in internal, it is very reasonable because coal market in the world is being weakened and competition is very tight, thus it negatively gives impact on coal business transportation, so in this case, a new customer becomes obstructed. Initiative strategy to achieve these targets are to create added values and diversify products, and one KPI is yellow i.e. dispatch revenue (incentives revenue because the delivery is earlier than that stated in the contract agreement). The overall company performance measurement in accordance with the quantitative data of 2013 obtained score 148 with the highest contribution from the customer perspective (31%).

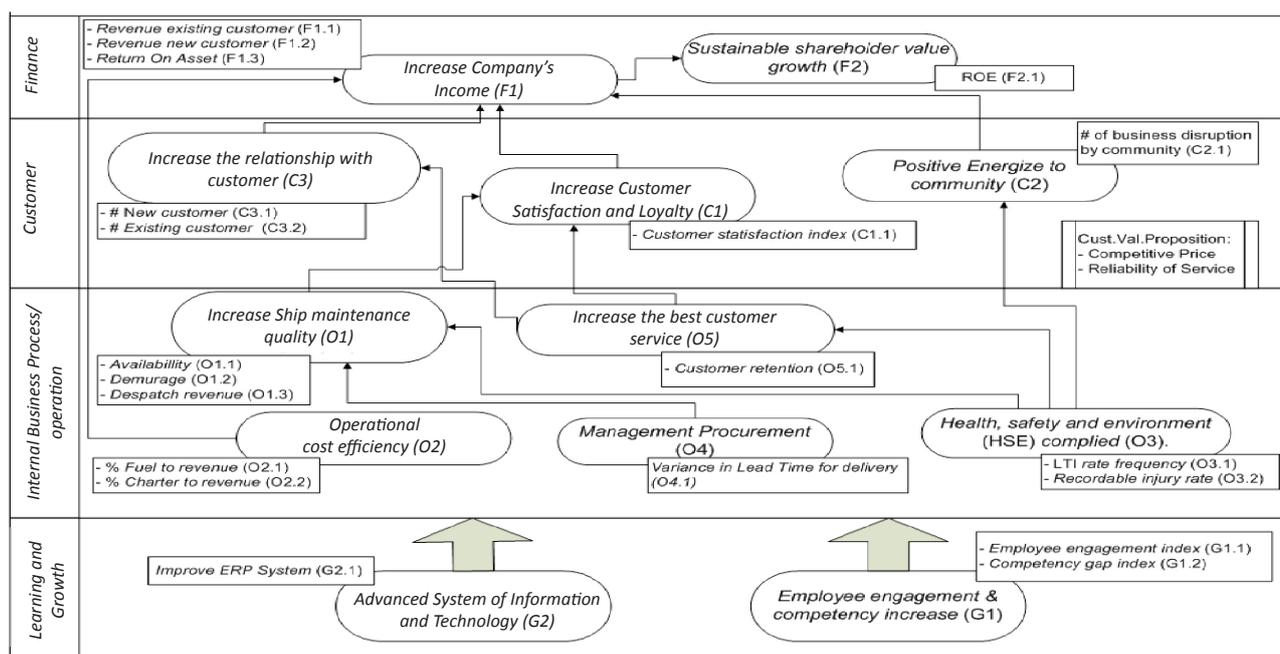


Figure 1. Strategy Map PT TPM

Table 3. The design of simulation performance achievement PT TPM

Strategic objectives	Lag	Actual		Target	Scoring system	Score (3); (4)	Weights (%)	Weights of score (5) x (6)	Traffic light
		Mar-13	3						
1	2								
Customer perspective(C) 31%									
C1.Improve customer satisfaction and loyalty			83	98	Higher is better	85,0	11	9,35	Green
C2.Positive energize to community			0	0	Precise is better	100	5	5,00	Green
C3.Improve relationships and good cooperation with customers			1	2	Higher is better	50	5	2,50	Red
C3.2.# existing customer			11	13	Higher is better	84,6	5	4,23	Green
C4.Improve engagement with Government			97	100	Higher is better	97,0	5	4,85	Green
Financial perspective (F) 29%									
F1. Increase revenue			7	10	Higher is better	70,00	6	4,20	Green
F1.2 Revenue new customer			1	2	Higher is better	50,00	6	3,00	Red
F1.3 Return on Asset			4,99	6,0	Higher is better	83,17	3	2,50	Green
F2.The growth of shareholder value			11,39	15	Higher is better	75,93	14	10,63	Green
Internal business process perspective (O) 21%									
O1.Improving the quality of ship maintenance			96	98	Higher is better	97,96	1	0,98	Green
O1.2 Demurage			0	0	Precise is better	100,00	2	2,00	Green
O1.3 Despatch revenue			1,0	1,5	Higher is better	67	2	1,33	Yel-low
O2. Efficiency operating costs			21	19	Lower is better	110,53	2	2,21	Green
O2.2 charter to revenue			28	25	Lower is better	112,00	2	2,24	Green
O3. Health, Safety and Environment (HSE) complied			1,30	1	Lower is better	130,00	2	2,60	Green
O3.2 Recordable injury rate			2,50	1,63	Lower is better	153,37	2	3,07	Green
O4. Management procurement			93	98	Higher is better	94,90	1	0,95	Green
O4.2 The best quality and price (%)			93	98	Higher is better	94,90	1	0,95	Green
O5. Increasing the best service to customers			100	100	Higher is better	100,00	5	5,00	Green
Learning and Growth Perspective (G) 19%									
G1. Improve employee engagement and competency			98	99	Higher is better	98,99	5	4,95	Green
G1.2 Competency gap index			1	0,5	Lower is better	200,00	5	10,00	Green
G2. The information systems and the latest technology			50	98	Higher is better	51,02	9	4,59	Red
								148,33	

Managerial implications

The results of this study obtained some formulations of strategic objectives, key performance indicators, strategic initiatives and determination on the most influential factors of corporate performance measurement. Based on the scoring system, customer perspective has the highest score (31%), followed by financial perspective (29%), internal business process perspective (21%) and learning and growth perspective (19%). Customer perspective is the most influential factor to company performance as a whole due to lower coal market in the world.

The simulation results of applications of the scoring system and traffic light system using quantitative data from the company prospectus of 2013 obtained sixteen green KPI which means that the company has achieved its target. The three red KPI for customer perspective indicates that the company has not achieved the target of the number of new customers. A strategic initiative in increasing new customers is diversification product transport. The three red KPI for financial perspective indicating that the company has not achieved the target of revenue from new customers as an impact of number of new customers which is red. Three yellow signs at learning and perspectives shows dispatch revenue. The overall performance with predetermined score target by the management and staff at internal company is good with a score of 148. Based on the explanation above, balanced scorecard method is a performance measurement system based on integrated financial and non-financial aspects.

CONCLUSION AND RECOMMENDATION

Conclusion

The vision and missions of the company are an initial foundation to formulate company strategic objective factors in implementing the balanced scorecard method. Based on the discussions with the management and internal staff experts, translation of strategic objectives factors of four balanced scorecard perspectives is in the form of strategy map to determine the causal relationship of each perspective for its easier socialization. Determination of key performance indicators and strategic initiatives of each strategic objective is

based on indicators of lag and lead. The determining factor that most influences the company performance is weighting performance of each strategic objective and KPI of the four balanced scorecard perspectives with paired comparison technique, and the results of weighting shows that the customer perspective is the most influential factor to company performance, with a percentage of 31%, followed with financial perspective (29%), internal business processes (21%) and learning and growth (19%).

Based on discussions of the research results and the experts from the internal company, commitment and cooperation among members of the company are very important in the application of balanced scorecard method in the company, since there is a linkage among the Divisions in which they have a mutual influence in achieving the performance of the company.

Recommendation

The balanced scorecard method is formulated and implemented based on the environmental conditions of the company, and in this case, it is based on the existing structural organizational model in the company. In this research, the author designed the performance measurement system limited to corporate level (company) only; therefore, this research can be further developed (cascading) to the employee level so that each employee has a key indicator performance that should be carried out separately in their daily work activities. As a result, the performance measurement of each employee will be more objective because the assessment is based on the actual data, and eventually has a positive impact on the employee performance assessment the future.

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