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DEVELOP BALANCED SCORECARD FROM KPI IN CONSTRUCTION COMPANIES (CASE STUDY: STATED-OWNED ENTERPRISE)

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Abstract

Construction has become the large industry in this global era. Lack of performance management system is the biggest problem that caused unstable performance to this industry. Demand from this industry requires a stable performance and management measurement to reach their vision and mission. There are so many performance measurement tools implemented in the construction industry such as performance prism, malcolm baldrige, six sigma, Balanced Scorecard, etc. The authors implemented Balanced Scorecard as a performance measurement tools to analyze strategy for the construction companies. Balanced Scorecard (BSC) is one of the tools to measure the performance of a company. BSC has four perspectives which consist of financial perspective, customer perspective, internal process perspective, and learning and growth perspective. This paper discusses the BSC analysis from existing company's Key Performance Indicators (KPIs), which has been known from the annual report of a construction company. Companies that were analyzed is a construction company in Indonesia which is one of the state-owned enterprises. There are limitations to the data which is secondary data from annual report and analysis of BSC based on vision, mission, and existing KPIs from the company. The results of the analysis of the BSC is a strategy in terms of financial, customer, internal process, and learning and growth

Keywords: Construction Company, Balanced Scorecard, Key Performance Indicators

1. Introduction

In the construction industry, performance measurement is an essential element in the management that provides important information for process control and establish challenging and feasible goals. Furthermore, it supports the implementation of business strategies (Costa & Formoso, 2003). Unfortunately, the construction industry frequently has uncertain performance although construction industry contributes a significant influence to economics sector in a country, (Chan & Chan, 2004). The problem that affects the construction industry performance, in general, is the lack of Performance Measurement

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System (Formoso & Lantelme, 2000). From this fact, it is proven that construction industry must have a Performance Measurement System in order to stablize the performance.

Performance measurement is the process of calculating the efficiency and effectiveness of actions (Neely, 2005). Basically, the performance measure that is widely used is financial measures (Gautreau & Kleiner, 2001). But Sanger (1998) said that ".. financial measures are useful – but they tend to measure the past they tend to measure the easily measurable". So, there is a systematic shift of emphasis from financial performance measures to non-financial measures. Traditional financial oriented and accounting performance measurement are no longer sufficient to evaluate the company's performance (Basheka & Tumutegyereuze, 2013). So from this systematic shift—financial measure to non-financial measure, there is one tool in performance management that does not only contain financial measure, named Balanced Scorecard.

Balanced Scorecard (BSC) is a performance management tools designed by Harvard business school professor Robert Kaplan and Renaissance Solution president David Norton in 1992. It is contain three more measurement perspective beside financial, they are: customer perspective; internal/business process perspective; learning and growth perspective. Each perspective includes a wide range of potential sub-measures (Kagioglou, Cooper & Aouad, 2001). BSC can be used as a tools to measure performance of a construction company.
For measuring the performance of construction companies, there are also Key Performance Indicators. KPIs are a compilation of data measures used to evaluate the performance of a construction operations (Cox, Issa & Ahrens, 2003). In addition, "KPIs play a key role in providing information on the performance of construction tasks, projects, and companies" (Ali, Al-Sulaihi & Al-Gahtani, 2012). Thus, the use of the KPIs in construction is a reflection of the growing need to focus on a range of quality and performance issues (Department of the Environment, Transport and the Regions, 2000)

One of the state-owned-enterprises in Indonesia which is engaged in construction sector has defined their own KPIs for the company. The KPIs for their company are listed in their annual report. From the information that has been obtained, this company has not yet designed their owned performance tools. Based on this information, this paper aims to develop Balanced Scorecard for performance management tools from KPIs that has been defined by the company.

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2. Literature Review

According to Kaplan and Norton (1993), BSC is used as the basic handling of the company's efforts in defining and communicating the interests of key importance to managers, employees, investors and even customers. The BSC's technical part is based on an efficiency logic in which there is an organizationally located demand for the BSC based on its promise of improved organizational performance (Ax & Bjørnenak, 2005). Kaplan and Norton (1996) assume that underlying relationship is the measures of organizational learning and growth will affect the measures of internal business processes, which will influence the measures of the customer perspective, which, finally, will alter the financial measures. Comprehensive approach to performance management system is well designed and supported by three basic criteria that lead to the success of the performance management system including the Balancedd Scorecard (Basu, 2004). The essense of the BSC is attach result metrics and performance drivers, connected together in a cause-and-effect relationship. Even,the Balanced Scorecard is permitting measurements in non-financial areas to be used to predict future financial performance (Nørreklit, 2000).

The BSC should cover a various range of performance measures in order to represent all dimensions of the organisation (Aidemark, 2001). According to Kaplan and Norton (1996), the concept of Balanced Scorecard is a strategic measurement system which is divided into four perspectives: financial, customer, internal processes, and learning and growth that aims to build a real indicator of performance in all business functions. Pineno (2002) argues that the BSC offers to managers to identify performance indicators and predict the establishment of corporate wealth and health by using the BSC. BSC control strategy within the organization and uncover asset and previously unknown information through the translation of strategy that is fast and scalable. Kaplan and Norton (1992), said that BSC also offers a comprehensive guide on the balanced of the financial perspective with other important areas. BSC provides the facility to companies to improve their vision and strategy and then turn them into action, so as to create an executive supplying the complete framework that translates the strategic objectives of an organization into a consistent set of performance measures. The key steps are organized by a strategic perspective which consists of financial indicators and harmonizing them with the operational steps that a driver future financial performance, there are: customer satisfaction, internal processes and innovation and development activities of the company.

Kaplan and Norton (1996), revealed that the concept of the BSC is a system of measurement system organized in four perspectives (financial, customer, internal processes, and learning and growth) that aims to build a real indicator of performance in all business functions, there are:

1. rigour in purpose;

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2. rigour in measurement; and

3. rigour in application.

The BSC's result is strategy like improved quality and higher value (Anthony, 1998).

To measure the performance of a company, the first thing to do is to look for the Key Performance Indicators (KPIs). Measurement is the heart of the performance management process as the information system (Kagioglou, Cooper & Aouad, 2001). In this research, the KPIs of construction company is already known then the next step is to analyze these KPIs using the Balanced Scorecard. According to Kagioglou, Cooper and Aouad (2001), Organization of a company, it is important to run a variety of purposes. This is part of the company's internal and external factors, such as the attract future investment, retain and attract more customers, remain competitive and innovative in increasing profits and stock prices. Along with the changing times, traditional financial measures are not enough to sustain the company to further grow due to lack of focus and failure strategy to provide quality data. Performance measures are one important thing to choose the relevant steps as an organization's strategic objectives and key performance results (Butler, Letza & Neale, 1997).

Balanced Scorecard component in addition to KPIsis strategy map. Kaplan and Norton (1992), explains that the strategy map explains about the logic of the strategy to demonstrate clearly and objectives for critical internal processes that create value and intangible assets required to support them. The difference between performance measurement and the BSC is a performance measurement focus on controlling behaviour while according to Kaplan and Norton (2001a, 2001b), BSC affords opportunities to motivate organizational members to Achieve Reviews their goals that support the long-term vision. By long-term strategic objectives with short-term actions, BSC plays an important role in integrating strategic management systems. Bean and Geraghty (2003), suggested that in order to involve employees, communication approaches need to be well thought out. Managers need to summarize the scorecard highlights successes and opportunities, and review a summary by employee. To demonstrate the visual graphics from the ground up, how investments in employee training, information technology and innovation links to internal processes and customer actions are then linked to the financial results of the use strategy map. Different methods for communicating the necessary include: posting a strategy map, newsletters, town meetings, and shift meetings. Inefficiencies should be identified accurately in order to know which part that requires more attention, while the resources should be allocated to carry out the necessary repairs. **Figure 1** shows four perspective of B

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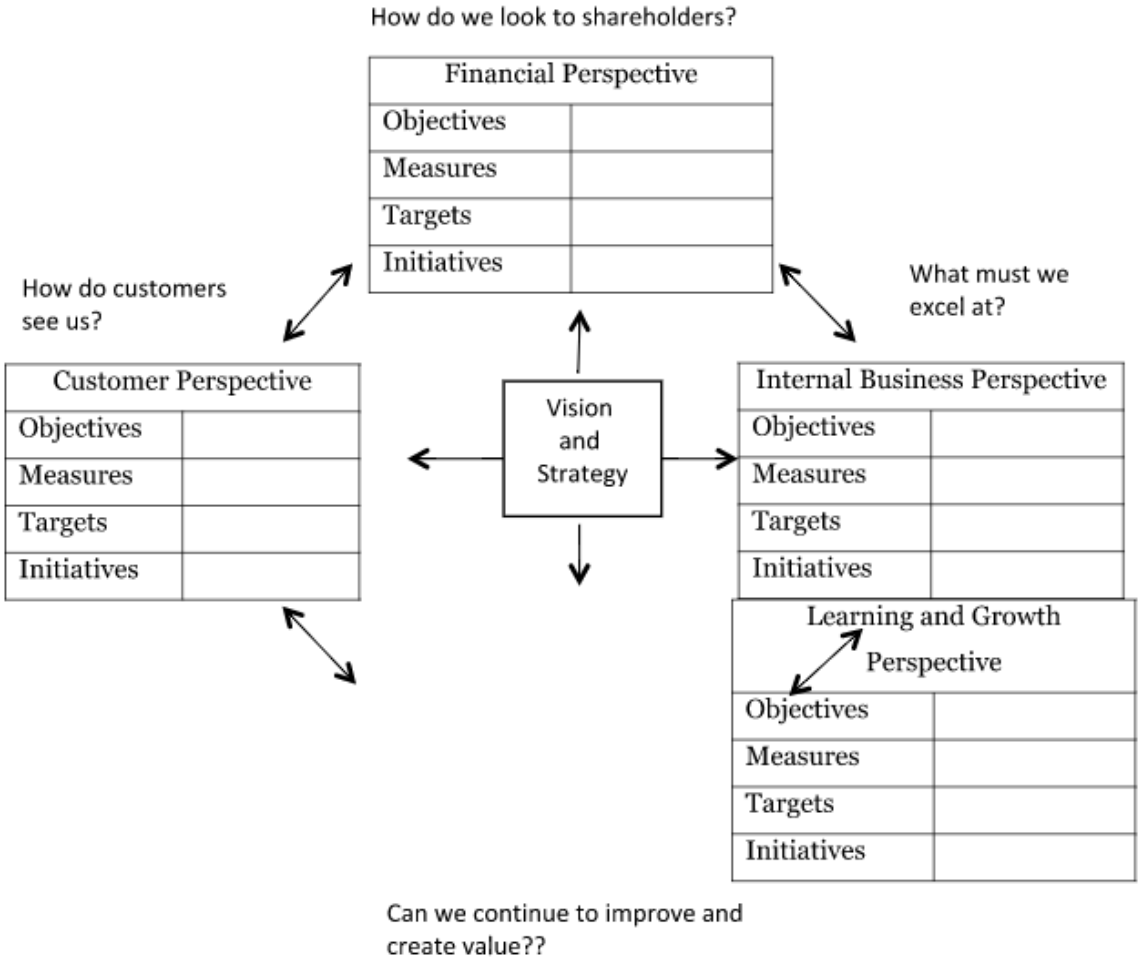

Figure 1 The Balancedd Scorecard

Source: Kaplan and Norton (1996)

3. Methodology

The methodology used in this paper is based on literature review. This paper analysis the KPI of one construction company (state-owned-enterprise) in Indonesia using the Balanced Scorecard (BSC) as a performance tool for determining the company's strategy to improved their performance.

The data used for the analysis of secondary data obtained from the website of one construction company in Indonesia which is part of a state-owned-enterprise. In the annual report, the data already known is the company's vision and mission, and Key Performance Indicators (KPIs) of the company. Thus, the first step in this paper is to analyze the vision and mission of the company. Afterwards, analysis of the Balanced Scorecard is conducted based on existing company's KPIs. The Balanced Scorecard resulted in a company's strategy to enhance the company performance.

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4. Analysis

This paper analyzed about vision, mission, and KPIs from the company. Afterwards, Balanced Scorecard develop from existing company's KPIs.

Vision and Mission Analysis

Analyze vision and mission of company with framework of Balanced Scorecard will help the company to determine a development strategy. When the vision and mission already grouped into severally perspective Balanced Scorecard, so determining strategy each of perpective also be easier.

The Vision of the company is "*To Be The Big Five Construction Companies In Indonesia"*. If the vision examined into four perspectives of Balanced Scorecard, it can be seen from **Figure 2**. **Figure 2** shows that the vision of company has become a part of every perspective. Because vision of company is highly correlated with finance, customers, internal process, learning and growth perspective.

PERSPECTIVE	VISION
FINANCE	*"TO BE THE BIG FIVE CONSTRUCTION COMPANIES IN INDONESIA"*
CUSTOMER	
INTERNAL PROCESS	
LEARNING & GROWTH	

Figure 2 Breakdownof the company vision into Balanced Scorecard perspective.

Analysis of the company mission also examined four perspectives of Balanced Scorecard as can be seen from **Figure 3**. Based on **Figure 3**, all of perspective is completely filled with mission of a company. It means mission from a company already covers all of perspective from Balanced Scorecard.

5. KPIs Analysis

Existing KPIs from the case study was used as a reference for researcher to implement of Balanced Scorecard, can be seen in **Figure 4**. Each KPIs already grouped into severall perspective of Balanced Scorecard. Each of perspective filled with KPIs and target.

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PERSPECTIVE	MISSION
FINANCE	• Achieving Above-Average Growth. Fulfilling shareholders expectation by achieving business growth above the industry's average.
CUSTOMER	• Realizing Excellent Performance Meeting the customers satisfaction by working fast, quality, accurate and cost efficiency.
INTERNAL PROCESS	• Concern for Environments. Playing an active role in community empowerment and environmental protection.
LEARNING AND GROWTH	• Developing and outstanding and Tough Human Resources.Developing competent, militant and fully dedicated Human Resources. • Growing with Partners Building mutually beneficial cooperation and growing with partners.

Figure 3 Breakdown company mission into Balanced Scorecard perspective.

FINANCE PERSPECTIVE				
	PLAN	WEIGHT	AUDITED	WEIGHT
NEW CONTRACT	5,744,922	8%	3,438,575	4.79%
RETURN ON EQUITY(ROE)	17.98%	9%	10.41%	5.21%
OPERATING RATIO	4.25%	9%	6.16%	4.96%
CUSTOMER PERSPECTIVE				
	PLAN	WEIGHT	AUDITED	WEIGHT
CUSTOMER SATISFACTION INDEX	76	10	86,8	11.42%
COMPLAIN HANDLING	80%	10%	81.82%	10.23%

INTERNAL PROCESS				
	PLAN	WEIGHT	AUDITED	WEIGHT
QUALITY	75%	7%	95.79%	8.94%
GCG				
COGS	90.33	8%	87.94%	8.22%
SOE PORTAL DATA ENTRY	80%	5%	80%	5%
DEVELOPMENT IMPROVEMENT KPKU	250	7%	301	8.43%
IMPLEMENTATION CSR & PKBL	100%	6%	46.91%	2.81%
LEARNING AND GROWTH				
	PLAN	WEIGHT	AUDITED	WEIGHT
INCREASE HR COMPETENCIES	76	10	86,8	11.42%
FULLFILL A NUMBER OF HR	80%	10%	81.82%	10.23%

Figure 4 Breakdown company existing KPIs into Balanced Scorecard perspective.

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Balanced Scorecard from KPIs

Balanced Scorecard as a measure and management tool have a characteristic in their relationship between each of perspective with a strategic objective and strategic iniciative as an output. From **Appendix1**, We can see the correlation between strategy map, objectives, indicator, target and inisiative strategy.

Conclusion

This paper improves the knowledge about the importance of using the BSC in the company as a strategy to improve work performance, supported by analysis of the vision and mission as a reference for the company's activities for the next few years. The Vision for this company has been correlated with each section perspective of the company, such as finance, customers, internal processes, learning and growth. As for the mission, the construction company has been using the Balanced Scorecard (BSC) in designing corporate mission because the mission in accordance with the perspective BSC (financial, customer, internal process and learning and growth). The vision and mission of the company is already matched with the BSC that have met the critical perspective to the company. Relations vision, mission, and KPIs against BSC perspective generating strategic initiatives for each perspective. In addition, this paper analyzes the existing KPIs from a construction company using the BSC. After analysis, it a strategic initiative was found as output. This means that companies that already have the BSC KPIs can be used as a tool to gain a strategic initiative for companies, especially companies state-owned enterprises.

In this paper using BSC analysis for construction companies, but for further research BSC can be used for any other company either state owned or not. BSC can also be used for companies that already know their KPIs or companies that have not set KPIs. Additionally, further research can also use other tools such as Six Sigma and Malcolm Baldrige.

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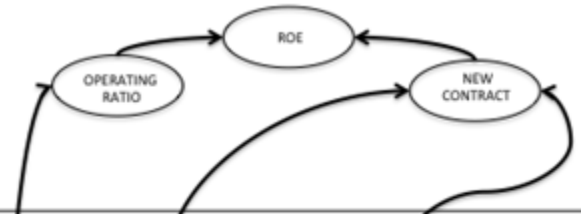
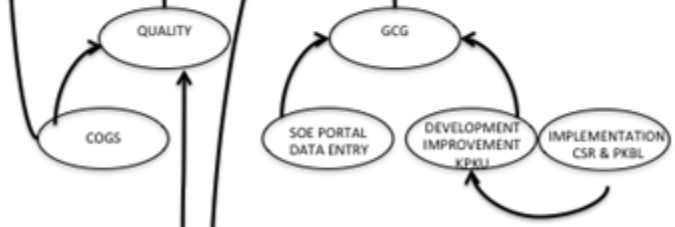
PERSPECTIVE	STRATEGIC MAP	OBJECTIVES	INDICATOR	TARGET	INITIATIVE
FINANCIAL PERSPECTIVE		• PROFITABILITY • INCREASING CONTRACT QUANTITY • COST EFFICIENCY	• RETURN ON EQUITY • NEW CONTRACT • OPERATING RATIO	• 17,98 % • RP 5.744.922 • 4.25%	• USE MORE FINANCIAL LEVERAGE, BY INCRESING THE AMOUNT OF DEBT CAPITAL RELATIVE TO ITS EQUITY CAPITAL, A COMPANY CAN INCRESE ITS RETURN ON EQUITY (ROE) • TAP A NEW MARKET SEGMENT WITH INNOVATIVE IN R&D. AND ALSO MAINTAIN CONTINOUS CUSTOMER. • FINDING BEST FORMULA OPERATING RATIO TO MEET MOST COST EFFICIENCY RATIO OF THE COMPANY.
CUSTOMER PERSPECTIVE		• HIGH RATIO CUSTOMER SATISFACTION INDEX • INCREASE NEW CUSTOMER SEGMENT • GOOD AFTER SALES SERVICES	• CUSTOMER SATISFACTION INDEX(CSI) • COMPLAIN HANDLING	• 76 POINT • 80%	• IMPLEMENT CRM SYSTEM, TO BUILD AND STRENGTEN RELATIONSHIP BETWEEN COSTUMERS AND ALSO CAN IDENTIFY AND PROVIDE SERVICES TOMEET THE NEEDS OF CUSTOMERS. • DEVELOP AFTER SALES SERVICE STRATEGY PLAN.
INTERNAL PROCESS PERSPECTIVE		• HIGH QUALITY PRODUCTS & MANAGEMENT • EFFECTIVE PROCESS • COMPETETIVE PRICES	• QUALITY • GCG • COGS • SOE PORTAL DATA ENTRY • DEVELOPMENT IMPROVEMENT KPKU • IMPLEMENTATION CSR & PKBL	• 75% • 80 POINT • 90.33% • 80% • 250 POINT • 100%	• IMPLEMENT TOTAL QUALITY MANAGEMENT (TQM). • IMPLEMENT GOOD CORPORATE GOVERNANCE AS A FOUNDATION IN OPERATION OF A COMPANY MANAGEMENT. • FULLFILLED SOE DATA ENTRY. • IMPROVEMENT IN PERFORMANCE WITH DEVELOPING KPKU AS A MEASURE PERFORMANCE.
LEARNING AND GROWTH PERPECTIVE		• HIGH QUALITY HR • HIGH QUANTITY HR	• INCREASE HR COMPETENCIES • FULLFILL NUMBER OF HR	• 100% • 100%	• IMPLEMENT COMPETENCIES TRAINING • FORECAST A NUMBER OF HR REQUIREMENT BY PROJECT.

APPENDIX 1 Balanced ScorecardAnalysis