

Balanced Scorecard Design at PT X Construction Services Company

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Abstract-This thesis aims to design a balanced scorecard for PT X, a family-owned construction company which has yet to implement a quantifiable performance evaluation system. The decision to use balanced scorecard is based on the company's need to create an understanding of its strategy across the company ranks, and to help with strategy execution. This research is conducted based on qualitative methodology, with case study approach. Data collection is done through in-depth interview with the company's director and managerial staff to better understand the company's strategic objectives and to set targets based on company's capability. Data analysis found 13 strategic objectives and 28 indicators across the four perspectives of balanced scorecard.

Keywords: balanced scorecard, performance measurement, construction company

1. Introduction

PT X is a family construction service company (contractor) based in Jakarta and Surabaya, with a focus on civil construction and a private business-to-business (B2B) target market that has 10 employees and directors still play a big role today. For the past 6 years, PT. X experienced a downward trend in the contract value chart, plus the Covid19 pandemic in Q1 of 2020. This situation was exacerbated by the difference in expectations and negligence of one of the employees of PT. X against PT. F who is one of the long-term clients until the termination of cooperation. Based on the background, it can be concluded that the company has several problems related to strategy communication and direction from superiors to managers and employees, so the company needs a holistic performance measurement system that can help clarify company strategy, communicate strategy to all members, and assist in strategy execution, namely *the balanced scorecard*. The implementation of *the balanced scorecard* in the company is expected to provide direction for *owners*, managers, and employees to be able to focus on the company's goals in running business operations.

2. Literature Review

2.1 Previous Research

Research by Ilahiyah (2016) creates strategic target points along with their size and strategic initiatives in the four business perspectives on the *balanced scorecard*. Research by Malagueño, Lopez-Malagueno, et al., (2018) concluded that the use of *balanced scorecards* has a positive impact on financial performance and exploitative innovation, namely innovation that involves incremental improvement and continuous development, exploiting the company's internal resources to create innovation in the company. Research by Dedic et al. (2020) found a relationship between the innovation and learning perspective with the internal business process perspective and the customer perspective, and there is a relationship between the internal business process perspective and the financial and customer perspective. Research by Alimudin et al (2019) shows that each perspective in the *balanced scorecard* has a different influence on company performance, with the influence of financial perspective of 50.5%,

customer perspective of 56.5%, internal business process perspective of 51.5%, and growth and learning perspective of 72.7%.

2.2 Theoretical Foundation

2.2.1 Balanced Scorecard

According to Niven (2006) describes the *balanced scorecard* as a group of performance measures derived from organizational strategy, which can be expressed in numbers.

2.2.2 Four Perspectives of the Balanced Scorecard

The *balanced scorecard* performance measurement system consists of four perspectives, namely: (1) Financial perspective; (2) Customer perspective; (3) Internal business process perspective; (4) Learning and growth perspectives.

2.2.3 Strategy Map

Strategy map is one component of the *balanced scorecard* that illustrates how the strategy relates the intangible assets owned by the company with the value creation process (Kaplan & Norton, 2004: 45).

2.2.4 Stages of Balanced Scorecard Design

There are 7 stages taken from the 10 stages of balanced scorecard development by Niven (2006) namely: (1) *Gather and distribute background material*; (2) *Provide balanced scorecard education*; (3) *Develop or confirm mission, values, vision, and strategy*; (4) *Conduct executive interviews*; (5) *Develop strategy map*; (6) *Develop performance measures*; (7) *Establish targets and prioritize initiatives*.

3. Research Framework

3.1 Analysis Model

Here is the analysis model of this study:

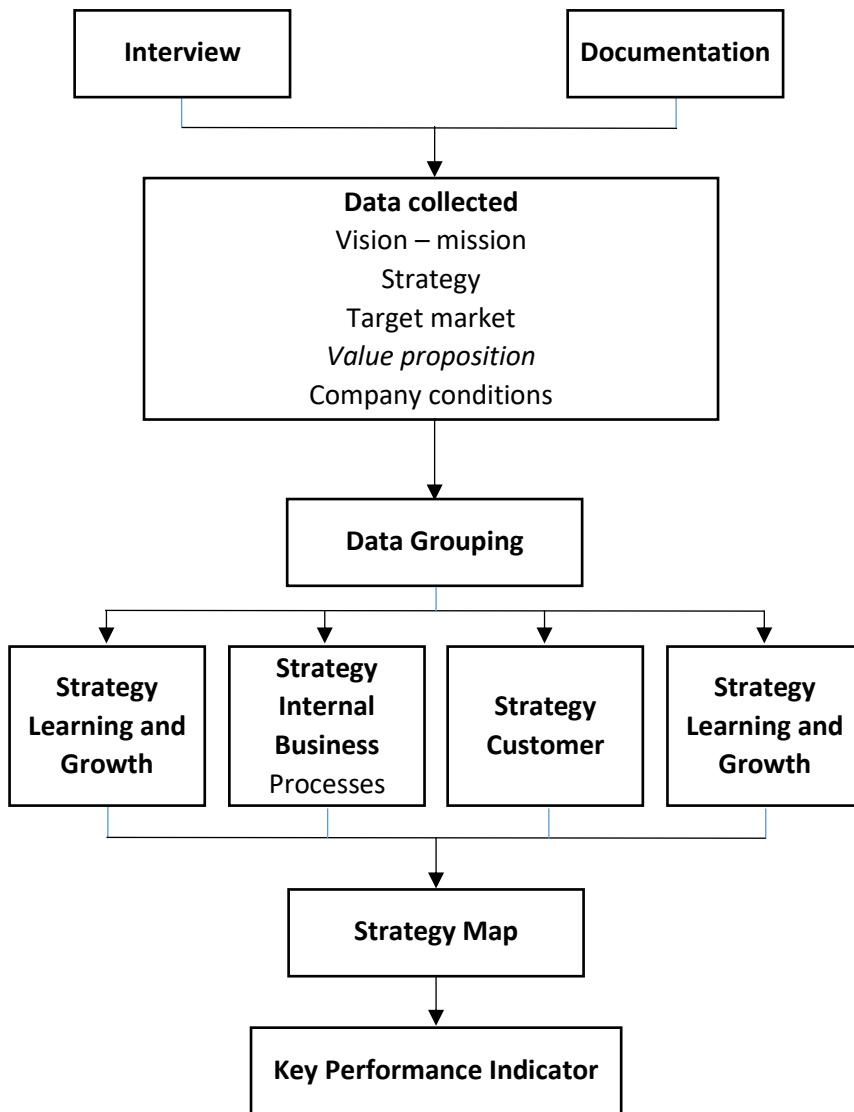


Figure 1 Research analysis model

Source: Data processed (2021)

4. Research Methods

4.1 Types of Research, Samples, and Data Collection

The research is carried out qualitatively with a case study approach. This research was conducted a case study on the process of designing a *balanced scorecard* at PT X. The object of this research is PT X, a writer's family company engaged in construction services. Subjek in this study is the finance director as one of the company's ownership holders, purchasing managers, and field project coordinators, with a total of 3 resource persons. The data collection method uses interviews and documentation. Data processing using (1) Data condensation; (2) Presentation of data; (3) Drawing conclusions and verification. The validity and reliability of the data were tested using the triangulation method.

5. Results and Discussion

5.1 Resource Information

In this study, the data used in the analysis were obtained from interviews with three research informants, namely: Director (FS), Purchasing Manager (HS) and Field Coordinator (IS).

5.2 Data Analysis and Discussion

5.2.1 Balanced Scorecard Design

A. Company Vision, Mission, and Goals

Table 1 Company Vision, Mission, and Objectives

Everyone	Mission	Purpose
Grow and develop into a company with complete integrated services in the field of construction services	Providing complete service to every stakeholder adhering to the principles of an efficient, honest and professional work culture.	<ul style="list-style-type: none">Helping to realize customer desires in the field of construction and planningMaximizing the use of human resources owned by the company starting from the planning, implementation and supervision stages, combined with an integrated work system and solid teamwork to ensure the quality of services provided to customersAlways strive to produce quality service products along with the continuous development of the companyWith a philosophy of efficiency, honesty and professionalism, the company will continue to strive to work on every project with the spirit of "starting from business relationships, ending with friendship" to every customer who uses the company's services

Source: Appendix B

B. Strategic Goals

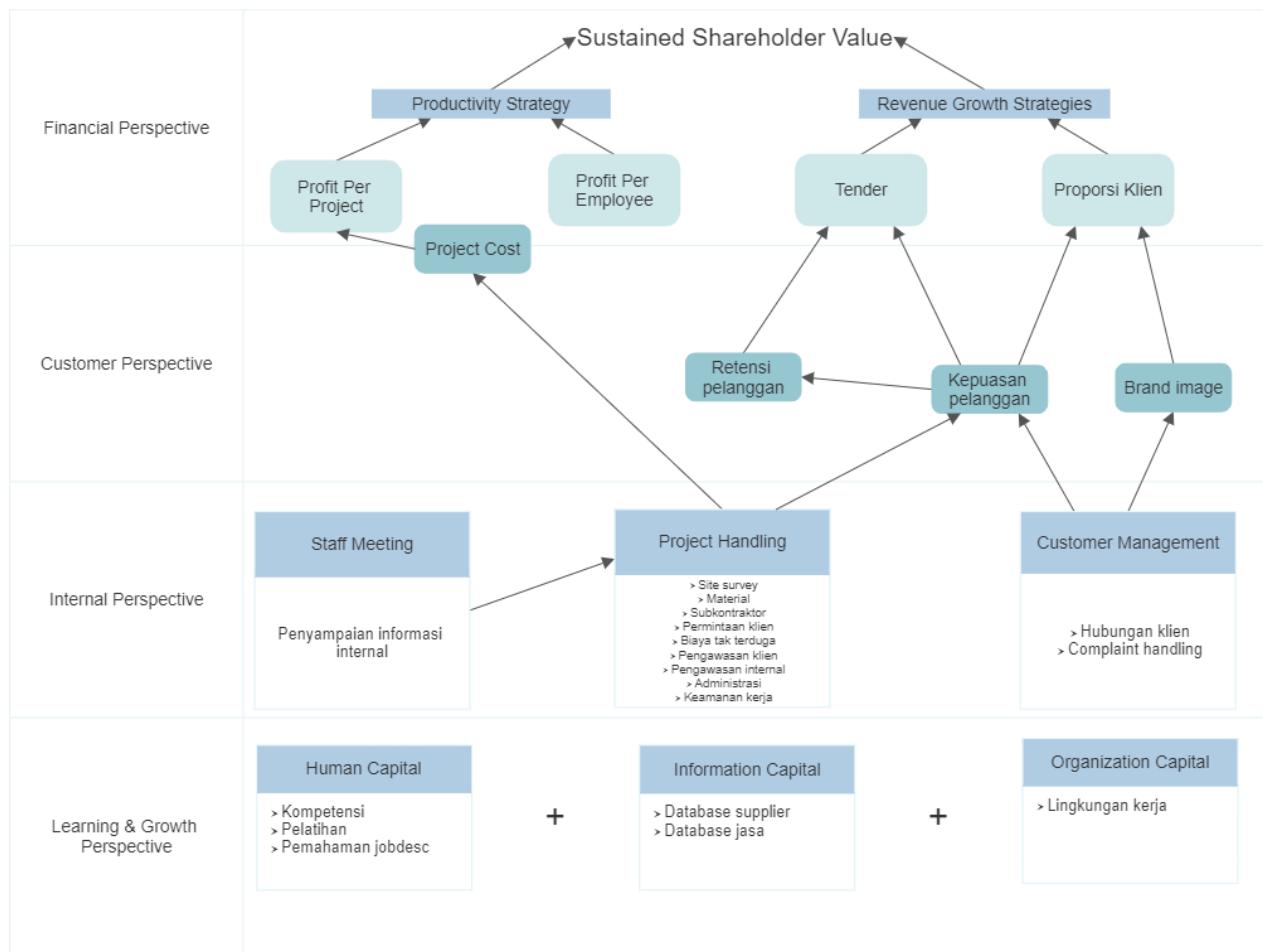


Figure 2 Strategy Map PT X

Source: Data processed (2022)

C. Financial Perspectives

Table 2 Financial Perspective Indicators

To be financially successful, how should a company appear in the eyes of shareholders?				
No	Indicator	Target	Initiative	Weight
1	Profit per project	>12,5%	Sharpen review: • Project location • Material requirements Support workforce	25%
2	Project cost	\leq BoQ	Supplier of cheap raw materials Sub-kon specialist Minimize work errors	10%
	a. Material cost			5%
	b. Labor cost			5%
	c. other costs			
3	Profit per employee	1-2 projects per person per year	Marketing program training	5%
4	Tender	70%	Expanding the network	5%
5	Project success	\leq 1	Improve communication with clients	25%

6	Proportion of clients	70: 30	Prioritizing quality-based client over price-based client	20%
	Quality based	≥ 70%		
	Price based	≤ 30%		

Source: Data processed (2021)

D. Customer Perspective

Table 3 Customer Perspective Indicators

To achieve the vision, how should the company appear in the eyes of customers?				
No	Indicator	Target	Initiative	Weight
1	Brand image	Delivered to 100% of clients	<ul style="list-style-type: none"> • Improve the quality of project results • Provide job training to field workers • Extend client network • Strengthen communication with clients • Improve client perception of the company's <i>brand image</i> 	33.33%
2	Customer satisfaction	>90%		33.33%
3	Customer retention	100%		33.33%

Source: Data processed (2021)

E. Internal Business Process Perspectives

Table 4 Internal Business Process Perspective Indicators

To meet shareholder and customer demand, what business processes need to be mastered?				
No	Indicator	Target	Initiative	Weight
1	Staff meeting	100% project information delivered	<ul style="list-style-type: none"> • Strengthen <i>site surveys</i> • Strengthen communication with clients during <i>project execution</i> 	15%
2	Project handling		<ul style="list-style-type: none"> • Expand data on cheap suppliers in local cities • Expand the data of specialist sub-contractors in local cities 	
	a. Site survey	95% of data has been collected in <i>site surveys</i>		12.5%
	b. Material	100% available		7%
	c. Subkontraktor	*4		7%
	d. Consumer demand	100% fulfilled		3%
	e. Unexpected costs due to delivery time	≤10% capital		3%
	f. Surveillance of client	Ada		3%
	g. Internal control	100% effective	Enforcing rewards & punishments, employee appreciation	12.5%
	h. Accuracy of administration	90%	<ul style="list-style-type: none"> • Update BoQ when client request changes • Strengthen communication between office staff, project leaders, and field employees 	12.5%

			<ul style="list-style-type: none"> WA and Email applications are must-haves for all employees involved Socialize BoQ data updates if changes requested by clients are made after <i>staff meetings</i> 		Source: Data processed (2021) F. Learning and Growth Perspectives Table 5 Learning and Growth Perspective Indicators
	I. Job security	100%	<ul style="list-style-type: none"> Ensure completeness of equipment and work safety attributes for employees in the field 	10%	
3	Client relationship	Excellent	<ul style="list-style-type: none"> Strengthen communication with clients during <i>project execution</i> 	5%	
4	<i>Complaint handling</i>	<1 day	<ul style="list-style-type: none"> Socialize BoQ data updates if changes requested by clients are made after <i>staff meetings</i> 	10%	

To achieve the company's vision, how will the company maintain its ability to change and evolve?

No	Indicator	Target	Initiative	Weight
1	Employee competence	$\geq *4$ (good)	Provide job training to employees according to the characteristics of their work	30%
2	Working environment	Conducive	<ul style="list-style-type: none"> Add amenities for office employees Prepare all the equipment and work equipment needs needed by field workers 	5%
3	Socializes project	Email and WA groups are 100% effective	<ul style="list-style-type: none"> Strengthen communication between office staff, project leaders, and field employees WA and Email applications are must-haves for all employees involved Socialize BoQ data updates if changes requested by clients are made after <i>staff meetings</i> 	30%
4	Employee knowledge of job desc	$\geq *4$ (good)	Good enough	30%
5	New project database	85% supplier, material and labor information in related cities	<ul style="list-style-type: none"> Strengthen <i>site surveys</i> Strengthen communication with clients during <i>project execution</i> Expand data on cheap suppliers in local cities Expand the data of specialist sub-contractors in local cities 	5%

Source: Data processed (2021)

G. Balanced Scorecard PT. X

Table 71 *Balanced Scorecard* PT X

	No	Indicator	Target	Weight	Perspective Weighting
1	1	Profit per project	>12,5%	25%	15%

			2	Project cost						
			a.	Material cost	≤ BoQ	10%				
			b.	Labor cost		5%				
			c.	other costs		5%				
			3	Profit per employee	1-2 project	5%				
			4	Tender	70%	5%				
			5	Project success	≤ 1	25%				
			6	Proportion of clients	70: 30					
				Quality based	≥ 70%	20%				
				Price based	≤ 30%					
Customer	1	Brand image	100% delivered	33.33%	15%					
	2	Customer satisfaction	>90%	33.33%						
	3	Customer retention	100%	33.33%						
Internal Business Processes	1	Staff meeting	100% delivered	15%	35%					
	2	Project handling								
		a. Site survey	95% data	12.5%						
		b. Material	100% available	7%						
		c. Subkontraktor	*4	7%						
		d. Consumer demand	100% fulfilled	3%						
		e. Unexpected costs due to delivery time	≤10% capital	3%						
		f. Surveillance of client	Ada	3%						
		g. Internal control	100% effective	12.5%						
		h. Accuracy of administration	90%	12.5%						
		I. Job security	100%	10%						
	3	Client relationship	Excellent	5%						
Learning and Growth	4	Complaint handling	<1 day	10%						
	1	Employee competence	≥ *4 (good)	30%	35%					
	2	Working environment	Conducive	5%						
	3	Socializes project	100% effective	30%						

	4	Employee knowledge of job desc	$\geq *4$ (good)	30%	
	5	New project database	85% information	5%	

Source: Data processed (2022)

5.3 Managerial Implications

5.3.1 Financial Perspectives

Table 82 Managerial Implications of Financial Perspectives

Indicator	Information	Before Research	After Research
Reduce <i>project costs</i>	All <i>project expenses</i> do not exceed BoQ	\leq BoQ	<ul style="list-style-type: none"> • Strengthen <i>site surveys</i> • Strengthen communication with clients during <i>project execution</i> • Expand data on cheap suppliers in local cities • Expand the data of specialist sub-contractors in local cities
Reduce <i>delivery time</i>	<i>Project processing time</i> does not exceed BoQ	\leq BoQ	
Increase the role of employees in marketing	Encourage employees to help market the company's products and services	Not yet done	Provide marketing training to potential employees
Increase tender wins	The majority of tenders can be won by companies	70-80%	
Increase client spending	Increase client expenses through client type selection	70:30 (Quality:Price)	
Maintain project success rates	All projects won in the tender must be carried out properly	1 project in a period of 5 years	<ul style="list-style-type: none"> • Extend client network • Strengthen communication with clients • Improve client perception of the company's <i>brand image</i>

Source: Data processed (2021)

5.3.2 Customer Perspective

Table 93 Managerial Implications of Customer Perspectives

Indicator	Information	Before Research	After Research
Improve <i>brand image</i>	Prove to consumers that the company can be trusted to provide quality <i>project results</i> and fast <i>delivery time</i>	70-80% of messages are delivered to clients	<ul style="list-style-type: none"> • Extend client network • Strengthen communication with clients • Improve client perception of the company's <i>brand image</i>
Increase client retention	The client again uses the company's services	100% (2021)	
Increase client satisfaction	The client is satisfied with the quality of the project and delivery time compared to the project costs incurred	80%-90%	

Source: Data processed (2021)

5.3.3 Internal Business Process Perspectives

Table 104 Managerial Implications of Internal Business Process Perspectives

Indicator	Information	Before Research	After Research
Increase staff meeting effectiveness	Increase the dissemination of information to every employee involved, related to jobdesk, site survey results, tender results, BoQ, project design, to project implementation	80%-90% of information conveyed in <i>staff meetings</i>	<ul style="list-style-type: none"> • Strengthen <i>site surveys</i> • Strengthen communication with clients during <i>project execution</i>

Indicator	Information	Before Research	After Research
Increase the effectiveness of <i>survey sites</i>	The results of the <i>site survey</i> must be able to explain field conditions, <i>supplier data</i> and specialist sub-contractor data in the local city	≤ 50% of data collected	<ul style="list-style-type: none"> • Expand data on cheap suppliers in local cities • Expand the data of specialist sub-contractors in local cities
Reduce clerical errors	All project journey data can be well documented from <i>pre-bid</i> , project implementation and completion	2 times in the last 1 year	<ul style="list-style-type: none"> • Strengthen communication between office staff, project leaders, and field employees • WA and Email applications are must-haves for all employees involved • Socialize BoQ data updates if changes requested by clients are made after <i>staff meetings</i>
Increase job security	Minimize accidents during <i>project work</i>	There was only a minor accident	<ul style="list-style-type: none"> • Provide work safety equipment and equipment for employees in the field • Provide a P3K box on the <i>project site</i>
Speed up the <i>complaint handling</i> process	Know client requests from pre-bid to project execution	< 1 day	<ul style="list-style-type: none"> • Strengthen communication with clients during <i>project execution</i> • Socialize BoQ data updates if changes requested by clients are made after <i>staff meetings</i>

Source: Data processed (2021)

5.3.4 Learning and Growth Perspectives

Table 115 Managerial Implications of Learning and Growth Perspectives

Indicator	Information	Before Research	After Research
Improve employee competence	Employees have good abilities in project implementation	Good enough	Provide job training to employees according to the characteristics of their work
Create a comfortable work environment	Employees feel comfortable while working in the office or at the project site	Conducive	<ul style="list-style-type: none"> • Add amenities for office employees • Prepare all the equipment and work equipment needs needed by field workers
Increase the effectiveness of project information dissemination to all employees involved	Every employee involved must have a common point of view in project implementation	70-85% effective	<ul style="list-style-type: none"> • Strengthen communication between office staff, project leaders, and field employees • WA and Email applications are must-haves for all employees involved • Socialize BoQ data updates if changes requested by clients are made after <i>staff meetings</i>
Increase employee knowledge about jobdesc	Every employee involved must have good knowledge related to their work in project implementation	Cukp good	<ul style="list-style-type: none"> • Strengthen communication between office staff, project leaders, and field employees • WA and Email applications are must-haves for all employees involved • Socialize BoQ data updates if changes requested by clients are made after <i>staff meetings</i>
Complete <i>supplier and sub-contracting</i> database or in the local area	The company has adequate information related to suppliers, materials and labor in the relevant city	<50% of information is obtained, especially	<ul style="list-style-type: none"> • Strengthen <i>site surveys</i> • Strengthen communication with clients

Indicator	Information	Before Research	After Research
		outside the city of Surabaya	<ul style="list-style-type: none"> • Expand data on cheap suppliers in local cities • Expand the data of specialist sub-contractors in local cities

Source: Data processed (2021)

6. Conclusion and Suggestion

6.1 Conclusion

The *balanced scorecard* design on PT X is as follows:

1. From a financial perspective, companies can review the performance of *profit* per project goals, project *costs*, *profit per employee*, tender success rates, project success rates, and the proportion of clients. Strategic objectives on this perspective are achieved through fulfillment on strategic objectives from the customer perspective and internal business processes.
2. From a customer perspective, companies can review the performance of the target level of *brand image* delivery, customer satisfaction, and customer retention. Strategic objectives on this perspective are achieved through fulfillment on strategic objectives from the perspective of internal business processes
3. In the perspective of internal business processes, companies can conduct performance reviews through the objectives of *staff meetings* (information delivery), *project handling*, and customer management. The strategic objectives in this perspective are achieved through the fulfillment of the strategic objectives of the learning and growth perspective.
4. In the perspective of learning and growth, companies can conduct performance reviews through human resource competencies, completeness of information resources, and organizational resources.

6.2 Suggestion

6.2.1 Suggestion for Companies

Companies can use the *project scorecard* model from each perspective to assess the company's overall performance in the implementation of future projects. The *project scorecard* model includes several parts, such as strategic goals, targets, achievements and initiatives. In the financial perspective, for example, *project cost* indicators consist of *material costs*, *labor costs* and other costs, where targets and achievements are compared against the information recorded in the BoQ, then carry out initiatives such as obtaining data on soup plier or appropriate sub-contractors to minimizer project cost. Complete information in project costs will greatly help companies to measure project progress efficiently, which can help the purchasing division to record various things needed in the *project*.

6.2.2 Suggestion for Further Researchers

This research is only limited to designing a balanced scorecard, further research can evaluate the results of the implementation of the *balanced scorecard* design on company performance. Thus, the results of this research can be further developed to suit the needs of the company.

7. Reference

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