

Determining Key Performance Indicators at PT Cahaya Utama Branch Sidoarjo using Integrated Performance Measurement System (IPMS) and Balanced Scorecard Methods

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Abstract— This study aims to determine the appropriate Key Performance Indicators (KPIs) for PT Cahaya Utama Branch Sidoarjo using the Integrated Performance Measurement System (IPMS) and Balanced Scorecard (BSC) methods. The research employs a descriptive design, integrating qualitative and quantitative data. Key stakeholder needs were identified, and business objectives were set accordingly. KPIs were determined and validated through stakeholder feedback, comparative analysis, and expert judgment. The hierarchical weighting system prioritized the KPIs, highlighting critical areas for performance improvement. Results indicate a strong alignment between stakeholder needs and business objectives, with comprehensive and balanced performance metrics. The study concludes with recommendations for continuous KPI monitoring, employee development, customer-centric culture, and regular process audits to sustain and enhance organizational performance.

Keywords: Key Performance Indicators, Integrated Performance Measurement System, Balanced Scorecard, Organizational Performance, Stakeholder Needs

I. INTRODUCTION

Established in 2004, PT Cahaya Utama has rapidly expanded its operations throughout Indonesia, offering comprehensive outsourcing services. The Sidoarjo branch, being one of its significant operational units, has been pivotal in maintaining the company's reputation for quality service delivery. However, internal inefficiencies and resource limitations have posed significant challenges to sustained

performance and customer satisfaction.

The primary issue faced by PT Cahaya Utama Sidoarjo Branch is the lack of a robust performance measurement system. This deficiency has led to difficulties in tracking progress, identifying areas for improvement, and aligning organizational activities with strategic goals. As a result, there is a pressing need to develop a comprehensive performance measurement framework that can address these challenges.

This study aims to develop a performance measurement system for the PT Cahaya Utama Sidoarjo Branch using the IPMS and BSC methods. The specific objectives are:

- To identify key performance indicators (KPIs) relevant to the organization's strategic goals.
- To categorize these KPIs into the four perspectives of the Balanced Scorecard.
- To prioritize the identified KPIs based on their importance and impact on organizational performance.

II. LITERATURE REVIEW

1. Performance Measurement Systems

Performance measurement systems (PMS) are critical tools for organizations to monitor and evaluate their performance. Effective PMS helps organizations to understand their current performance, identify areas for improvement, and make informed decisions to achieve strategic objectives. Two widely recognized PMSs are the Integrated Performance Measurement System (IPMS) and the Balanced Scorecard (BSC).

2. Integrated Performance Measurement System (IPMS)

IPMS integrates various performance dimensions, offering a holistic view of organizational performance. It emphasizes the

alignment of performance measures with business processes and stakeholder requirements. The key components of IPMS include defining business objectives, identifying stakeholder requirements, and developing performance measures that reflect these requirements.

3. Balanced Scorecard (BSC)

Developed by Kaplan and Norton in the 1990s, the Balanced Scorecard (BSC) is a strategic planning and management system used extensively in business and industry, government, and nonprofit organizations. BSC transforms an organization's strategic objectives into a coherent set of performance measures. It categorizes performance measures into four perspectives:

1. Financial Perspective
2. Customer Perspective
3. Internal Processes Perspective
4. Learning and Growth Perspective

Each perspective provides a different view of organizational performance, ensuring a balanced approach to performance measurement.

1. Research Design

This study employs a descriptive research design to analyze the performance measurement systems at PT Cahaya Utama Branch Sidoarjo. The research integrates both qualitative and quantitative data to provide a comprehensive understanding of the company's performance metrics.

2. Data Collection

Data collection involved both primary and secondary sources. Primary data were obtained through observations, interviews, and questionnaires distributed to employees and management. Secondary data were gathered from company records, industry reports, and relevant literature.

3. Data Analysis

The data were analyzed using the IPMS and BSC frameworks. The analysis involved identifying stakeholder needs, setting business objectives, determining KPIs, and validating these indicators through a systematic process.

III. METHODOLOGY

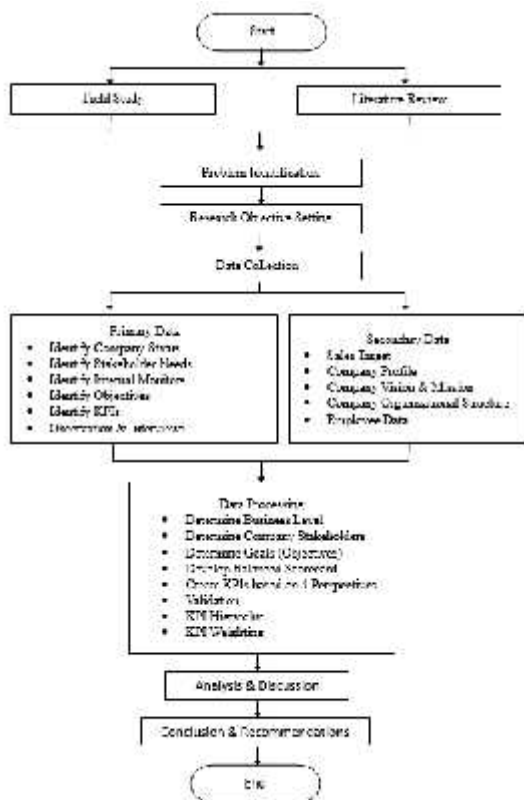


Figure 1 Flowchart

IV. DATA PROCESSING AND ANALYSIS

1. Identifying Stakeholder Needs

The first step in the IPMS process is identifying the needs and expectations of key stakeholders, including employees, customers, and management. Each group has unique requirements that influence the company's performance metrics.

Table 1 Stakeholder Requirements for PT Cahaya Utama Cabang Sidoarjo

No	Stakeholder	Requirement
1	Management	Minimize Company Operating Costs
2		Increase Company Sales
3		Increase Company Productivity
4	Employees	Improve Facilities Supporting Work
5		Enhance Employee Skills
6		Receive Competitive Salaries and Benefits
7		Career Opportunities within the Company
8	Customers	Provide Optimal Customer Service Quality
9		Offer Competitive Pricing
10		Ensure Services Are Always Available and Accessible
11		Build Strong Relationships with Customers

2. Setting Business Objectives

Based on the stakeholder needs, the company set nine business objectives categorized by stakeholder alignment. These objectives provide a clear direction for performance measurement and improvement.

Table 2 Requirements and Corresponding Business Objectives

Requirement	Business Objective
Minimize Company Operating Costs	Increase Profitability Company
Increase Company Sales	Increase Quantity Customer
Increase Company Productivity	Increase Revenue Company
Improve Facilities Supporting Work	Increase Satisfaction Employee
Enhance Employee Skills	Increase Skills Employee
Receive Competitive Salaries and Benefits	Increase Satisfaction Employee
Career Opportunities within the Company	Increase Productivity Employee
Provide Optimal Customer Service Quality	Increase Satisfaction Customer
Offer Competitive Pricing	Increase Satisfaction Customer
Ensure Services Are Always Available and Accessible	Increase Quality Service
Build Strong Relationships with Customers	Increase Loyalty Customer

3. Determining Key Performance Indicators (KPIs)

The BSC framework was used to translate business objectives into specific KPIs. These indicators cover four perspectives: Financial, Customer, Internal Business Processes, and Learning and Growth.

Table 3 Key Performance Indicators (KPIs)

Key Performance Indicators
Profit Margin: Measures the percentage of profit generated from each sale after all costs and taxes are deducted. $\frac{\text{Total Sales} - \text{Total Costs} - \text{Taxes}}{\text{Total Sales}} \times 100\%$
Total Revenue: Measures the total revenue generated from sales of products or services to customers. Number of Products/Services Sold Selling Price
Customer Satisfaction: Measures the level of customer satisfaction with the company's products or services. $\frac{\text{Number of Customers Surveyed} - \text{Number of Satisfied Customers}}{\text{Number of Customers Surveyed}} \times 100\%$
Customer Retention Rate: Measures the percentage of customers who continue to use the company's products or services over a specified period. $\frac{\text{Number of Customers at Start of Period} - \text{Number of Customers at End of Period} - \text{Number of New Customers}}{\text{Number of Customers at Start of Period}} \times 100\%$
Task Completion Time: Measures the average time taken by employees to complete their tasks.

Key Performance Indicators

Average Task Completion Time per Employee

Service Satisfaction: Measures the level of customer satisfaction with the services received from the company.

$$\frac{\text{Number of Customers Receiving Service} - \text{Number of Customers Satisfied with Service}}{\text{Number of Customers Receiving Service}} \times 100\%$$

Market Share: Measures the percentage of the market controlled by the company.

$$\frac{\text{Total Market Sales Company}}{\text{Total Market Sales}} \times 100\%$$

Employee Performance: Measures the performance level of employees in achieving their targets.

$$\frac{\text{Set Target Employee Achievement}}{\text{Target}} \times 100\%$$

Training Program Satisfaction: Measures the level of employee satisfaction with training and development programs.

$$\frac{\text{Number of Employees Participating in Program} - \text{Number of Employees Satisfied with Program}}{\text{Number of Employees Participating in Program}} \times 100\%$$

4. Financial Perspective

KPIs under this perspective measure the company's financial health and profitability. Examples include revenue growth, profit margins, and cost management.

5. Customer Perspective

Customer satisfaction and loyalty are critical for business success. KPIs in this area include customer satisfaction scores, retention rates, and market share.

6. Internal Business Processes Perspective

This perspective focuses on the efficiency and effectiveness of internal operations. KPIs include process cycle times, defect rates, and operational efficiency.

7. Learning and Growth Perspective

Employee development and organizational learning are essential for long-term success. KPIs in this perspective measure employee satisfaction, training effectiveness, and innovation capacity.

Table 4 Strategy Objectives Based on the Four Perspectives of BSC

Perspective	Code	Strategy Objective
Financial	F 1	Increase Profitability Company
	F 2	Increase Customer Revenue
Customer	C 1	Increase Customer Satisfaction
	C 2	Increase Customer Loyalty
Internal Business Process	IBP 1	Increase Employee Productivity
	IBP 2	Improve Service Quality
	IBP 3	Increase Customer Quantity
Learning and Growth	LG 1	Enhance Employee Skills
	LG 2	Increase Employee Satisfaction

8. Validation of KPIs

The identified KPIs were validated through a series of steps, including stakeholder feedback, comparative analysis, and expert judgment. This validation ensures that the KPIs are relevant, reliable, and aligned with the company's strategic objectives.

Table 5 KPI Selection

Key Performance Indicator	Selected
Measure the percentage of profit generated from each sale after deducting all costs and taxes.	✓
Measure the total revenue generated from sales of products or services to customers.	✓
Measure the level of customer satisfaction with the company's products or services.	✓
Measure the percentage of customers who continue using the company's products or services over a specific period.	✓
Measure the time taken by employees to complete their tasks.	✓
Measure the level of customer satisfaction with the services received from the company.	✓
Measure the percentage of market share controlled by the company.	✓
Measure the level of employee performance in completing tasks and achieving targets.	✓
Measure employee satisfaction with training and development programs.	✓

9. Hierarchical Weighting of KPIs

To prioritize the KPIs, a hierarchical weighting system was applied. This system assigns different weights to each KPI based on its importance and impact on overall performance. The hierarchical structure helps in focusing on the most critical areas for improvement.

10. KPI Weighting Using Pairwise Comparison

Pairwise comparison is crucial in AHP (Analytic Hierarchy Process). Decision-makers compare two different alternatives using a scale ranging from 1 (equally important) to 9 (absolutely more important).

The weighting of Balanced Scorecard Perspectives. The priorities of the four perspectives are summarized in Table It shows the weights from respondents regarding the importance of each main criterion for performance evaluation.

Table 6 Balanced Scorecard Perspective Weights

Perspective	Weight
Financial	0.053-0.084
Customer	0.223-0.296
Internal Business Process	0.133-0.166
Learning and Growth	0.501-0.550

Table 7 Financial Perspective Weights

Sub criteria	Weight
Profitability	0.860-0.875
Revenue	0.125-0.140

F1: Profit percentage after all costs and taxes.
F2: Total revenue from sales.

Table 7 Customer Perspective Weights

Sub criteria	Weight
Customer Satisfaction	0.860-0.888
Customer Loyalty	0.112-0.140

C1: Customer satisfaction with products/services.
C2: Percentage of loyal customers over time.

Table 8 Internal Business Process Weights

Sub criteria	Weight
Task Completion Time	0.192-0.210
Service Quality	0.675-0.784
Market Share	0.011-0.115

IBP1: Time taken by employees to complete tasks.
IBP2: Customer satisfaction with services.
IBP3: Market share percentage.

Table 9 Learning and Growth Perspective Weights

Sub criteria	Weight
Employee Performance	0.800-0.887
Training Satisfaction	0.113-0.137

LG1: Employee performance in task completion.
LG2: Employee satisfaction with training programs.

Table 10 Final Weights of Criteria

Criterion	Weight
Financial	0.084
Customer	0.296
Internal Business Process	0.166
Learning and Growth	0.454

Financial Perspective Final Weights

Table 11 Financial Perspective Final Weights

Sub criteria	Weight
Profitability	0.875
Revenue	0.125

Customer Perspective Final Weights

Table 12 Customer Perspective Final Weights

Sub criteria	Weight
Customer Satisfaction	0.888
Customer Loyalty	0.112

Internal Business Process Final Weights

Table 13 Internal Business Process Final Weights

Sub criteria	Weight
Task Completion Time	0.210
Service Quality	0.675
Market Share	0.115

Learning and Growth Final Weights

Table 14 Learning and Growth Final Weights

Sub criteria	Weight
Employee Performance	0.667
Training Satisfaction	0.333

V. DISCUSSION AND ANALYSIS

1. Analysis of Integrated Performance Measurement System (IPMS)

PT Cahaya Utama Sidoarjo Branch employs the Integrated Performance Measurement System (IPMS) to assess its performance. This method involves identifying stakeholders and analysing their desires. The study focuses on three main stakeholders: Leaders, Employees, and Customers.

Employees are crucial as they drive business and revenue growth. Their desires include personal development, salary increases, and a comfortable work environment. Customer satisfaction is essential for business continuity, with their desires being product quality and friendly service. Leaders are responsible for the company's direction and strategy, aiming for profitability, operational efficiency, and a positive company image.

Through external monitoring, the company's ability to meet stakeholder desires was evaluated. Results indicate that the company has made efforts in employee development and infrastructure improvement to support their performance.

Based on stakeholder desires, nine business objectives were formulated, and classified according to common desires among stakeholders. The implementation of IPMS at PT Cahaya Utama Sidoarjo Branch demonstrates the company's commitment to success by meeting stakeholder needs, helping focus on crucial aspects, and achieving performance targets.

2. Analysis of Balanced Scorecard (BSC)

The Balanced Scorecard (BSC) analysis is used to enhance human resource performance from various perspectives, including financial, customer, internal business process, and learning and growth. The Key Performance Indicators (KPIs) derived from strategy objectives are categorized into these BSC perspectives.

The KPIs include:

1. Measuring profit percentage from sales after all costs and taxes.
2. Measuring total revenue from product or service sales.
3. Measuring customer satisfaction with the company's products or services.
4. Measuring the percentage of customers who continue using the company's products or services over time.
5. Measuring the time taken by employees to complete their tasks.
6. Measuring customer satisfaction with the company's service.
7. Measuring the market share controlled by the company.
8. Measuring employee performance in completing tasks and meeting targets.
9. Measuring employee satisfaction with training and development programs.

These KPIs were validated through a questionnaire assessing their relevance to the company's conditions. Responses from company leaders confirmed that all KPIs were deemed appropriate, indicating the validity of the KPIs.

3. Analysis of KPI Weighting Using Pairwise Comparison Method

Weighting is conducted to represent the importance of each perspective and KPI. A higher weight for a perspective indicates its

greater significance and impact on improving PT Cahaya Utama Sidoarjo Branch's performance.

1. The financial perspective has the highest priority with a weight of 0.454. This means that learning and growth should be prioritized over financial, customer, and internal business process perspectives. Improving revenue growth affects company performance through increased sales.
2. From a financial perspective, employee productivity costs a weight of 0.875. This indicates that measuring profit percentage from sales should be prioritized to enhance company profit, optimize financial management, and ensure sustainable finances.
3. From the customer perspective, the KPI for measuring customer satisfaction with products or services weight 0.888. Prioritizing this KPI is crucial for

improving customer satisfaction and loyalty, ultimately benefiting the company's reputation and service quality.

4. From the internal business process perspective, the KPI measuring the time taken by employees to complete tasks weight 0.675. Prioritizing this KPI contributes to employee performance and operational efficiency, positively impacting business processes.
5. From the learning and growth perspective, the KPI measuring employee performance in achieving targets is weighted at 0.667. This KPI should be prioritized to support company growth through effective employee performance and target achievement.

VI. CONCLUSION

Based on the research conducted, the following conclusions can be drawn:

The Key Performance Indicators (KPIs) using the Integrated Performance Measurement System (IPMS) method and Balanced Scorecard (BSC) framework at PT Cahaya Utama Sidoarjo Branch are based on stakeholders, as well as the company's vision and mission. Nine KPIs have been established:

1. Measuring the percentage of profit generated from each sale after deducting all costs and taxes.
2. Measuring the total revenue generated from the sale of products or services to customers.
3. Measuring the level of customer satisfaction with the company's products or services.
4. Measuring the percentage of customers who continue using the company's

products or services over a certain period.

5. Measuring the time taken by employees to complete their tasks.
6. Measuring the level of customer satisfaction with the service received from the company.
7. Measuring the percentage of market share controlled by the company.
8. Measuring employee performance in completing tasks and achieving targets.
9. Measuring employee satisfaction with training and development programs.

Recommendations

The following recommendations are provided for future researchers: Future researchers may use different variables for Key Performance Indicators to provide more accurate results for the implementation of proposed improvements.

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