

## **An Assessment of the Rajamangala Sakon Nakhon Recycle Bank Project using a Balanced Scorecard**

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**Keywords:** Balanced Scorecard, Rajamangala Sakon Nakhon Recycle Bank Project

**Abstract.** The objective of this research was to assess the performance of the Rajamangala Sakon Nakhon Recycle Bank Project using a Balanced Scorecard. The results indicated that:

1. The average assessment of the 4 perspectives is well development. The average score of the evaluation issues does not meet the criteria of 4.4.
2. The assessment of the customer perspectives is well development. The average score of the evaluation issues does not meet the criteria of 4.2.
3. The assessment of the internal process perspectives is well development. The average score of the evaluation issues does not meet the criteria of 4.6.
4. An assessment of the learning and growth perspectives is well development. The average score of the evaluation issues does not meet the criteria of 4.2.
5. An assessment of the financial perspectives is very well development. The average score of the evaluation issues meets the criteria of 4.

### **1. Introduction**

Currently, many organizations are focused on environmental issues. The University policy encourages environmental awareness, social responsibility, and the use of resources to achieve value, in preparation to enter the 'Green University'. Therefore The Rajamangala Sakon Nakhon Recycle Bank Project was established to recycle and manage waste within the University as effectively as possible.

The project has been in operation since August 2015, and has tried to maximize the participation by all parties, whether they are students, faculty or staff. This is the first assessment of the performance to be made, with the aims of providing information for future decision-making, and to promote the development and sustainability of waste recycling banks. To achieve these aims, it was decided to monitor and evaluate the recycle bank by applying the knowledge of the Balanced Scorecard approach.

A Balanced Scorecard (BSC) is a tool that allows management to assess the performance of the organization according to the strategy set by the organization. BSC can be divided into four perspectives:

- 1) Customer Perspectives, related to the needs of customers, such as customer satisfaction, brand image, the marketing process and customer relationship management.

2) Internal Process Perspectives, related to internal processes and organizational structures, such as coordination, production management, advertising and public relation and systems used in the operation.

3) Learning and Growth Perspectives, related to developing the skills of employees, employee satisfaction, morale of staff, the development of facilities in operation, working environment, and job skills including the system used to work.

4) Financial Perspectives, associated with an increase in revenue, the increase in production at a lower cost, and less waste during production.

Therefore, to reflect the objectives and goals of the recycling bank, this research led to the concept of a Balanced Scorecard to evaluate the effectiveness and efficiency, and to provide information to develop and improve performance.

## **2. The objective of this study**

To assess the Rajamangala Sakon Nakhon Recycle Bank Project by using a Balanced Scorecard.

## **3. Literature Review**

Kaplan and Norton (1996) defined the Balanced Scorecard as a tool to convert Mission and Strategy into a set of performance measures. It has helped define the measurement system and management strategy to cover many issues. The Balanced Scorecard produces a numerical value to measure the performance of organizations from the 4 perspectives of financial control, customer relationships, internal affairs and learning and growth.

1. The Financial Perspectives; are particularly important because they make a company aware of its performance. Financial indicators (KPI) are increase margin, increase revenue, reduce cost, and other.

2. Customer Perspectives; with a view to answering the question, "how do customers see us", customer indicators are customer satisfaction, market share, customer retention, customer acquisition and other.

3. Internal Process Perspectives; help to enable organizations to deliver value to the customer requirements. Internal process indicators are productivity, employee skill, quality, cycle time, operations and other.

4. Learning and Growth Perspectives are determined with the view that the administration will give priority to people in the organization. Learning and Growth indicators are satisfaction and attitude of employee, employee skill, employee turnover and other.

## **4. Research Methodology**

4.1 Population: 260 lecturers and staff in RMUTI- Sakon Nakhon Campus; 2,736 students in RMUTI-Sakon Nakhon Campus, and 4 staff working in the Recycle Bank Project.

4.2 Sample [2]: 155 lecturers and staff, 338 students and 4 staff working in the Recycle Bank Project.

4.3 The model was evaluated based on the concept of [3] comprehensive survey in four areas: Customer Perspectives, Internal Process Perspectives, Learning and Growth Perspectives, and Financial Perspectives. The index to evaluate the project was in accordance by [1]

## **5. Results**

### **5.1 Customer Perspective Results**

**Table 1:** Results of an assessment performance of the Rajamangala Sakon Nakhon Recycle Bank Project, customer perspectives

<b>KPI of Customer Perspectives</b>	<b>Performance in Year 2016</b>	<b>Score Level</b>	<b>Development Level</b>	<b>Criteria</b>
1.1 Percent of new clients	$(\frac{931-657}{657}) \times 100 = 41.70\%$	5	Very Well	Pass
1.2 Percent of Loss clients	$(\frac{600}{931}) \times 100 = 64.45\%$	1	Fail	Fail
1.3 The number of customer complaints or other agencies	No	5	Very Well	Pass
1.4 Assessment of the recycle bank in the customer view.	3.92	4	Well	Fail
<b>Mean</b>		<b>3.75</b>	<b>Well</b>	<b>Fail</b>

Table 1 shows that an assessment of the Rajamangala Sakon Nakhon Recycle Bank with a Balanced Scorecard from customer perspectives is a well development (3.75). A score of 4.2 or above is required to meet the criteria. Two KPIs pass the criteria: the percentage of new clients (5), and the number of customer complaints or other agencies (5). Two KPIs fail the criteria: percentage of clients lost (1) and the assessment of the recycle bank in the customer's view (4).

### **5.2 Internal Process Perspective Results**

**Table 2:** Results of an assessment performance of the Rajamangala Sakon Nakhon Recycle Bank, internal process perspectives

<b>KPI of Internal Process Perspectives</b>	<b>Performance in Year 2016</b>	<b>Score Level</b>	<b>Development Level</b>	<b>Criteria</b>
2.1 Operation quality Level of recycle bank project	$(\frac{4}{5}) \times 100 = 80\%$	4	Well	Fail
2.2 Process Quality Level of recycle bank project	$(\frac{4}{5}) \times 100 = 80\%$	4	Well	Fail
2.3 The report covers the performance	Weekly report/ Annual report/ Semi-annual report	4	Well	Fail
2.4 The number of times a process to monitor and evaluate the recycle bank project	1 time per year	2	Improvement	Fail
2.5 The number of public relation exercises on the recycling bank project	8 times per year	2	improvement	Fail

2.6 The number of promotional items.	2 times per year	3	Fair	Fail
2.7 Campaign / public relation / training to educate employees about waste segregation or environmental knowledge.	4 times per year	5	Very Well	Fail
2.8 The quantity and quality scales/ calculator	The scales are accurate. A calculator for calculations involving staff at all.	4	Well	Fail
2.9 Accuracy and integrity in recruiting recycle buyers	No bidding but the specific store to purchase the waste meets the requirements such as a license and very well service.	2	Improvement	Fail
2.10 Honesty in the budget of recycle bank project	Documents can be verified correctly according to the regulation set	5	Very Well	Pass
2.11 Internal process assessment of the recycle bank in the staff view.	3.89	4	Well	Fail
<b>Mean</b>		<b>3.55</b>	<b>Well</b>	<b>Fail</b>

Table 2 showed that an assessment of the Rajamangala Sakon Nakhon Recycle Bank Project with a Balanced Scorecard from internal process perspectives is a well development (3.55). A score of 4.6 is required to meet the criteria. The only KPI to pass is the honesty in the budget of the recycle bank (5).

### 5.3 Learning and Growth Perspective Results

**Table 3:** Results of an assessment performance of the Rajamangala Sakon Nakhon Recycle Bank Project, learning and growth perspectives

<b>KPI of learning and growth perspectives</b>	<b>Performance in Year 2016</b>	<b>Score Level</b>	<b>Development Level</b>	<b>Criteria</b>
3.1 The number of the study visit of the staff	None	1	Fail	Fail
3.2 The number of activities that benefit society	None	1	Fail	Fail
3.3 The results of the evaluation to improve operations	1 time per year	2	Improvement	Fail
3.4 The quality level of information technology implemented in the recycle bank project	Plan to implement the information technology with the recycle bank project	5	Very Well	Pass
3.5 Learning and growth assessment of the recycle bank in the staff view.	3.50	4	Well	Fail
<b>Mean</b>		<b>2.60</b>	<b>Fair</b>	<b>Fail</b>

Table 3 showed that an assessment of the Rajamangala Sakon Nakhon Recycle Bank with a Balanced Scorecard from learning and growth perspectives is a fair development (2.6). A score of 4.2 is required to meet the criteria. The KPI of the quality level of information technology implemented in the recycle bank project (5) passes the judging criteria. Four KPIs fail: the numbers of the study visit of the staff (1), the numbers of activities that benefit society (1), the results of the evaluation to improve operations (2), and leaning and growth assessment of the recycle bank in the staff view (4).

#### 5.4 Financial Perspective Results

**Table 4:** Results of an assessment performance of the Rajamangala Sakon Nakhon Recycle Bank Project, financial perspectives

<b>KPI of Financial Perspectives</b>	<b>Performance in Year 2016</b>	<b>Score Level</b>	<b>Development Level</b>	<b>Criteria</b>
4.1 Percentage of budget disbursement capabilities.	$(\frac{5,000}{50,000}) \times 100 = 10\%$	5	Very well	pass
4.2 Cost and Effectiveness Analysis	$(\frac{5,000}{274}) \times 100 = 1,824.82\%$	5	Very well	pass
<b>Mean</b>		<b>5</b>	<b>Very well</b>	<b>pass</b>

Table 4 showed that an assessment of the Rajamangala Sakon Nakhon Recycle Bank Project with a Balanced Scorecard from financial perspectives is a very well development (5). A score of 4 is required to meet the criteria. Both the percentage of budget disbursement capabilities (5) and the cost and effectiveness analysis (5) KPIs pass.

### 3. Conclusion

**Table 5:** Results of an assessment performance of the Rajamangala Sakon Nakhon Recycle Bank Project, summary of the 4 perspectives

<b>Evaluation Perspectives</b>	<b>Assessment Performance</b>	<b>Development Level</b>	<b>Consideration Criteria</b>
1. Customer Perspectives	3.75	Well	Fail
2. Internal Process Perspectives	3.55	Well	Fail
3. Learning and Growth Perspectives	2.60	Fair	Fail
4. Financial Perspectives	5	Very well	Past
<b>Mean</b>	<b>3.73</b>	<b>Well</b>	<b>Fail</b>

Table 5 showed that an assessment of the Rajamangala Sakon Nakhon Recycle Bank Project with a Balanced Scorecard from 4 perspectives is well development (3.73). The mean score does not meet the required criteria of 4.4. The financial perspective (5) is a pass. Customer perspectives (3.75), internal process perspectives (3.55), and learning and growth perspectives (2.60) fail.

### References

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