

# Design and Implementation of Balance Scorecard System in Iran's Gas and Oil Industries

## (A Case Study in Butan Gas Company in Ahvaz)

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### ABSTRACT

In today business, not only strengths and weaknesses should adjust with opportunities and threats, but also the ever-changing world should be considered. Today, companies must consider the position of the current situation and Based on that Future view are outlined. Therefore, performance evaluation of organizations and their performance results is an important and strategic process which not only determines. The competitive position of the organization, but also plays a significant role in the continuous improvement of the quality and effectiveness of the organization's management decisions. In this study to evaluate the performance of Ahvaz Butan gas company the balanced scorecard model is used. The balanced Scorecards evaluation model, the performance from four perspectives(financial, customer, internal process and learning and growth). In this study, for the financial, customer, internal process aspects the four years actual quantitative information from butan gas and for learning and growth aspects questionnaire were used.

**KEYWORDS:** Balanced scorecard, Butan Gas Company, Performance evaluation, Implementation

### INTRODUCTION

Following the dramatic changes in the business world in the last decades, to establish or maintain their position in the global market, organizations need to continuously improve their performance. Due to rapidly changing technology and increasing various of products. Non-financial (not financial) indicators of an organization to measure the performance should be considered. Therefore, managers are always looking for a comprehensive and integrated tool for evaluating the performance of their organizations. In order to ensure accurate implementing of their strategies achieve sufficient information of their current position and by Looking to the future, provide their organization improvement. An evaluation method should be able to state the overall objectives of the organization(in terms of distance to the goal) at the moment and specify The position of organization with regards to the environment(market, competitors and other organizations). It also reflects the effective of all activities of the organization. The Balanced Scorecard is one of the last major events of the twentieth century in the management accounting which it's the future favorable effects in the field of organizational goals, Planning the customer satisfaction, increasing shareholder value and, increasing the suppliers satisfaction , evaluating management and units operation, creation of strategic information systems and strategic communication with in the organization, will have an important role[1]. The Balanced Scorecard in 1992 by Kaplan & Norton Was introduced. They believed that "the thing to get, is what you measure." The Balanced scorecard (bsc) studies the performance of organization from four main aspects. (financial perspective, customer perspective, internal perspective and learning and growth perspective). Recent studies have shown that only %5 of employees understand the company's strategy and only 25% of managers care to organizational strategy and 60% of organizations, do budgeting regardless of organizational strategies and 85% of executive teams, discuss about organization strategies less than one hour per month [2]. The balanced scorecard approach makes company strategies and view into measure able targets. In balanced scorecard both financial and non-financial criteria are measured, the criteria for obtaining an optimal trading strategy diversifying their performance levels have been designed with care [3].

### 2. RESEARCH BACKGROUND

Kaplan and Norton(1992) planed and conducted a research project on performance evaluated, Twelve firm in "balanced scorecard", they regard it as a set of criteria that are quick but comprehensive review of the business become feasible for unit managers. They described Balanced Scorecard it in to hands, numbers and indicators the air craft cockpit. Pilot needs all the detailed information about the flight. Information about fuel, wind speed, altitude, direction, destination, and other indicators into the current and future conditions are briefly characterized. Kaplan&Norton(1993) examined the balanced scorecard in RockWater Company, Apple Computer and a small equipment manufacturer advanced. These three companies used bsc to evaluate performance and to use the strategies. Martinsons et al (1999) in an article called "balanced scorecard: a

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Foundation for the strategic management of information systems" introduced four structures to assess the activity of information systems : Value of commercial, consumer-driven, internal process and future readiness. They stated that the balanced scorecard has emerged .

#### Criteria for selecting the suitable organizational unit:

Before you conclude that a balanced scorecard system at the highest level is the best option for performance evaluation, we should consider criteria for this important decision. There are many elements of a balanced scorecard system for the first appropriate organizational unit. These criteria are shown in Figure 2.

**Figure1.** strategy and view point Conversion into the four main balanced scorecard perspectives (Kaplan&Norton, 2005).



**Figure 2.** Seven criteria for selecting the organizational unit to start developing bsc (Paul R.niven, 2006).

**Table 1.** is a sample worksheet to determine Butan company as the organizational unit to start the balanced scorecard method in the system:

Criteria	Merit	Weight	Total score	Justificatory reasons
Having a clear strategy	10	30%	3	the Butan company has a clear vision and strategy.
Top management support	9	30%	2.7	the Top management want a performance evaluation of organization so he is sued to establish a briefing order.
requires a balanced scorecard	5	15%	0.75	Due to rapid changes in oil and gas industry needs to improve a performance evaluation system to maintain position seems.
Support managers and supervisors	7	10%	0.7	Due to time constraints and busy works good solidarity done.
Sphere of activity	8	5%	0.4	The company produces a specific product, Marketing and will sell.
provide information	4	5%	0.2	Despite the success of the unit a complex performance evaluation system has not been used in the past.
Resources	4	5%	0.2	The company has provided sufficient resources.
<b>Total</b>		<b>100%</b>	<b>7.95</b>	

Make the choice to decide among several options, is among the many benefits of a balanced scorecard system. Implementation of the balanced scorecard as a management system for design-centric organization requires the selection of goals (quantitative targets and implemented initiatives ) to achieve them. Decision making process of the system design problem in any one of the scorecards, is not revealing as much as of the selection phase from different measures. These measures constitute the core of the balanced scorecard are as a reference point and focus for the entire organization[9].

**Table2.** Key performance evaluation indicators of Butan company

Perspective	Quantitative targets	Performance indicators	Disposal units
Financial	*Sales volume growth *Lower cost	* Income from the sale of gas *regular salary costs of staff *Training costs	*Financial
customer	*Customer Satisfaction	*Maintaining customer *achieving customer *Customer Service	*Selling and operating unit
Internal process	*Implementation of Appropriate quality processes *Continuous quality improvement Productivity	* Maintenance Vehicles Index *Maintenance of facilities *Transport and loading parameters	*Department of Transportation *Technical & safety Affairs Unit
Learning and Growth	*Improve information management *Create the right environment for business	*Training investment work *environment quality *Employee satisfaction *To achieve personal goals *Promoting Health	*Department of Human Resources *Department of Research affairs

To Perspective financial, customer and internal processes using real data as well as company annual budget Butan are compared. For the development and learning Perspective the questionnaire has been used.

### 3. Data analysis: financial perspective

**Table3.** Frequency Distribution in Income from the sale of gas with an annual budget index

Actual performance	date	Budget forecast of Butan Company
21%	2009	5%-10%
25%	2010	5%-10%
34%	2011	10%-15%

According to Table 3, which shows the increased sale volume of liquefied gas(LPG) by Butan company, The main reason is the use of LPG as a fuel for cars after implementing the subsidies plan by the ninth government due to rising gas prices people used LPG for their cars as fuel. It is suggested much of the increased demand is from people who look at gas(lpg) as a clean fuel for their cars. It can be built more gas station to answer their demands.

**Table 4.** Frequency distribution according to the wages and pensions of employees with an annual budget index

Actual performance	date	Budget forecast of Butan Company
17%	2009	10%-15%
23%	2010	10%-15%
26.8%	2011	18%

**Table5.** Frequency distribution according to Administrative costs levels with an annual budget index

Actual performance	date	Budget forecast of Butan Company
7.2%	2009	5%-10%
19%	2010	5%-10%
21%	2011	5%-10%

**Table6.** Frequency distribution according to Training costs with an annual budget index

Actual performance	date	Budget forecast of Butan Company
11%	2009	5%-10%
13.6%	2010	5%-10%
6%	2011	5%-10%

As the data in Table6 shows the predicted growth rate, is a fixed cost of training in all 3years, the Training costs has dropped in the year 2011 from the year before so if the conditions continue, in the long run could negatively affect on the quality of staff as well as the innovative use of new technologies by employees.

#### Customer perspective:

From customer perspective the Customer satisfaction was considered as a target. Performance evaluation indicators in the customer perspective are maintaining customers, achieving customer and Customer Service. For each indicator, there is a monitoring process and criteria as follows:

#### Customer achieving index :

Monitoring indicator	
The rate of gas consumption achieving customers	
The total amount of gas sold during the year	*100

#### Maintenance of customer :

Monitoring indicator	
ordering repeat customers in each year	
The total amount of gass old during the year	*100

**Table7.** Frequency distribution according to Actual performance of the company to achieving customers index

Actual performance	Date	Changes compared to last year in butan company
7.3%	2009	2008
15%	2010	2009
17%	2011	2010

**Table8.** Frequency distribution according to Actual performance of the company to Maintaining customer index

Actual performance	Date	Changes compared to last year in butan company
9%	2009	2008
13.4%	2010	2009
18.6%	2011	2010

**Table 9.** Frequency distribution according to Actual performance of the company with Customer Service index

Actual performance	Date	Changes compared to last year in butan company
3.7%	2009	2008
11%	2010	2009
8%	2011	2010

According to Butan company data provided and using standard monitoring, Customer Service of company providing customer satisfaction at all times and subject to identify their needs. There for the identification, evaluation, analysis of current customers and maintain customer needs require a main criterion to attract new customers. In 2011 the rate of increase over the previous year after sales dropped, leading to a loss of customers.

#### Internal processes perspective:

Indicators of performance evaluation are in terms of internal processes maintenance of vehicles, maintenance of facilities and transport and loading indices which each has certain Monitoring and processes criteria areas follows:

#### Benchmark monitoring and maintenance vehicles

Monitoring indicators	
Maintenance costs for vehicles	
	*100
Total sales in the period	

#### Benchmark monitoring and maintenance facility:

Monitoring indicators	
Maintenance costs for facility	
	*100
Total sales in the period	

#### The bulk gas transportation and distribution:

Monitoring indicators	
The number of customer complaints due to late or nondelivery of gas	
	*100
Number of customers Client	

**Table 10.** Frequency distribution according to Actual performance of the company with Benchmark monitoring and maintenance vehicles index

Actual performance	Date	Changes compared to last year in butan company
17.1%	2009	7%-10%
21%	2010	7%-10%
33.3%	2011	7%-10%

**Table 11.** Frequency distribution according to Actual performance of the company with Benchmark monitoring and maintenance facilities index

Actual performance	Date	Changes compared to last year in butan company
19.3%	2009	5%-10%
24%	2010	5%-10%
29%	2011	5%-10%

**Table 12.** Frequency distribution according to Actual performance of the company with transport and loading index

Actual performance	Date	Changes compared to last year in butan company
6.8%	2009	2008
5%	2010	2009
3.3%	2011	2010

Monitoring benchmark index for transportation and loading is made due to the delay or non-delivery of gas by dividing the number of customer complaints over the number of clients which according to the results presented in Table 12 the transport and loading process is improving and through that customers can be attracted.

### **Learning and growth perspective:**

To evaluate the performance of Butan company in Perspective, a questionnaire has been used. For data analysis, descriptive and inferential statistics have been used in this context. The study population consisted of all technician and higher degree employees working in the Butan company. According to information obtained from Butan company, the population consisted of 101 employees who 31 were technician, 54 bachelor's and 16 master's degree and higher . 101 questionnaires were distributed among the employees and Cronbach's alpha was used to calculate there liability of the questionnaire. Alpha values calculated for the questionnaire is **0.9045**. Given that more than 70% of it is value, therefore, there liability of the questionnaire can be confirmed.

$$\alpha = \frac{k}{k-1} \left( 1 - \frac{\sum pq}{s^2} \right)$$

**Table13** . Distribution of respondents in terms of per capita investment in education

percent	Frequency	per capita investment in education
23.7%	24	low
67.3%	68	average
9%	9	High
100%	101	Total

**Table 14.** Distribution of respondents in terms work environment quality

percent	Frequency	work environment quality
62.4%	63	low
19.8%	20	average
17.8%	18	High
100%	101	Total

One of the measures to improve the work environment quality and is to improve health and quality in organizations, Attention to the role of scientific and professional employees in organization and provide them progress and growth Can be an effective for organizational performance. Based on the results, 62.4% of employees are dissatisfaction of work environment quality. If the employees want to work comfortably with high efficiency in their jobs and give good results for organization a healthy environment is necessary and appropriate, both in terms of physical, psychological.

**Table 15.** Distribution of respondents in terms of employee satisfaction

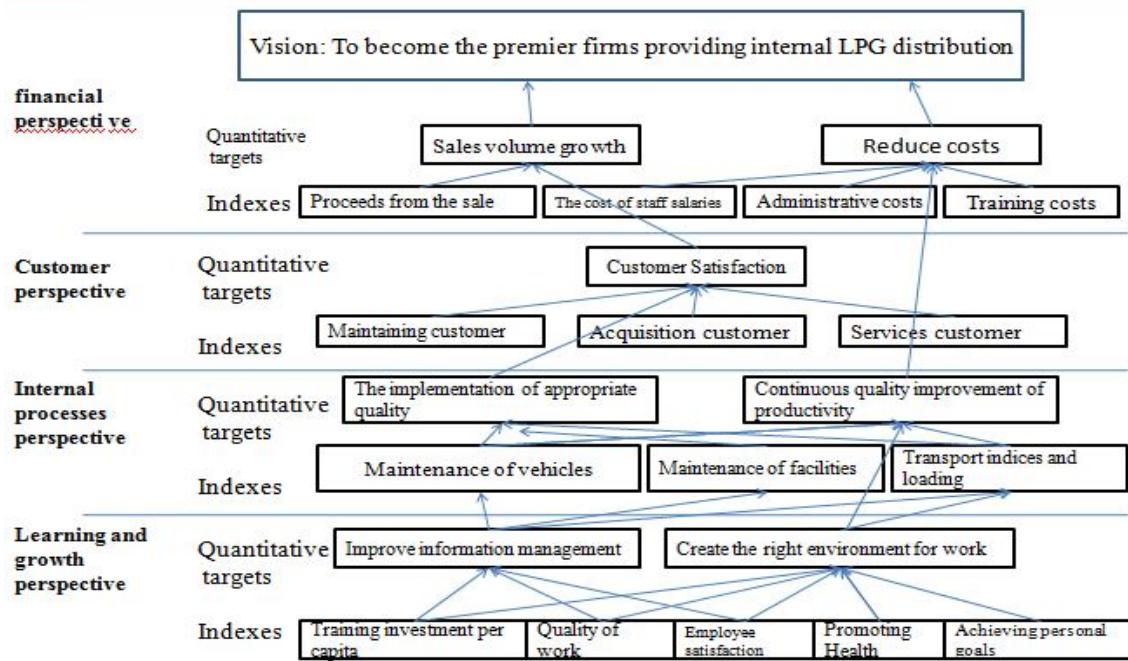
percent	Frequency	employee satisfaction
30.6%	31	low
52.4%	53	average
17%	17	High
100%	101	Total

**Table 16.** Distribution of respondents based on achieving personal goals

percent	Frequency	achieving personal goals
39.6%	40	low
40.5%	41	average
19.9%	20	High
100%	101	Total

**Table 17.** Distribution of respondents in terms of promoting health

percent	Frequency	promoting health
26.7%	27	low
57.4%	57	average
15.9%	17	High
100%	101	Total



**Figure 3.** Butan company's strategic map

#### 4. CONCLUSIONS

Performance evaluation is an important part of the management control system. Strategic planning and control decisions require information about the performance of the different parts of the firm. The balanced scorecard indicators of financial performance in the future to improve the financial indicators of the balance can be achieved. In this paper, first the indicators were selected which were perfect for evaluating the performance of Ahwaz Butan gas co. Then by using quantitative real data about Butan Company, indicators related to three perspectives of financial, customer, and internal processes were evaluated. Information needed for learning and growth perspectives was collected through questionnaire distribution. Cronbach's alpha was used to calculate the reliability of the questionnaire. The results of the implementation of the balanced scorecard system in Ahwaz Butan Gas Company indicated that company's sales amount is increasing, but after sales service has not increased accordingly. This will cause customer dissatisfaction and also employees are satisfied less by work environment quality that can have negative impact on their Productivity and efficiency.

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