

Adopting an environmental balanced scorecard as a mechanism to rehabilitate the environment of business organizations and activate its role in sustainable development

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ABSTRACT

The relationship between environmental indicators as a mechanism environmental rehabilitation and the task of measuring and evaluating environmental performance and competitiveness is a complex relationship that needs to look for an appropriate performance appraisal model. Some experts see compliance with environmental requirements as an additional burden that increases production costs and harms the competitiveness of firms and industrial sectors, where others insist that environmental indicators are a useful mechanism to improve production efficiency and reduce negative impacts on the environment because the entire community pays for environmental degradation. Therefore, there is a need to study how a balanced scorecard can be used to incorporate environmental performance indicators within the indicators and other dimensions contained in this tool to achieve a sustainable balanced scorecard capable of rehabilitating the environment of the business organizations and thus activating their role in sustainable development.

We tried at the beginning of this study to discuss the development of indicators and measurement systems of the tool, to evaluate the environmental performance and evaluation indicators prevailing, and then try to provide an idea of what a balanced scorecard and how to prepare this card, getting into the main part of the research, where we discuss the sustainability of companies and how to link and expand the circle of balanced scorecard to include the environmental dimension and linking it to the elements of sustainability to reach the balanced scorecard environmental in order to manage the costs of environmental performance to achieve an efficient and effective economic performance.

1. Introduction

Organizations need to measure and evaluate their environmental performance to meet the needs of stakeholders within and outside the organization. They have therefore turned to environmental management systems as management tools, monitored and evaluated their environmental and social performance. They have also begun to use the standards provided by global professional bodies to assist organizations in identifying indicators Environmental performance. One of the most important performance measurement models developed in the early 1990s is "Balanced Scorecard", which has become one of the best and most widely used models in the world. It is a balanced and integrated performance measurement system and a tool for translating strategies into operational goals and practical indicators that realize the vision and mission of the organization. The balanced scorecard has been clearly developed over the past ten years, and although organizations recognize the importance of the strategic dimension of environmental management and social responsibility, the trend towards establishing environmental management systems and considering the cost associated with environmental protection is an important item of the budget.

Many financial observers, however, still consider corporate sustainability as costly Constraint, as well as a lack of structured tools to manage and control corporate sustainability efforts. Although Balanced Scorecard is considered a tool that

can solve all management problems, it does not have this role in managing sustainability (Abu Qahaf, 1993:111). Therefore, many attempts have been made to integrate the elements of corporate sustainability into the balanced scorecard, and those attempts has taken many pictures such as sustainable balanced scorecard that includes environmental and social dimensions, and environmental balanced scorecard that is concerned with the environmental dimension only.

1.1 Research importance

This paper draws on the importance of studying the relationship between environmental indicators as a mechanism for environmental rehabilitation and the task of measuring and evaluating the environmental performance and competitiveness of organizations, in an attempt to integrate the dimensions of sustainable development into the strategy. As a balanced scorecard is a tool for translating and implementing strategies, there is an arising need to introduce the environmental and social dimension within the balanced scorecard to activate its role as a tool capable of rehabilitating the business organizations as well as evaluating the overall performance.

1.2 Research objective

The aim of the study is to re-framing the indicators of the environmental performance measurement systems and the prevailing evaluation criteria, as well as to focus on the sustainability of companies and try to link and expand the circle

of the balanced scorecard to include the environmental dimension and linking them to the elements of sustainability to reach a balanced environmental scorecard.

2. Performance measurement basics, types and indicators

2.1 Definition and classification of types of performance indicators

In general, the performance indicator is defined as a Quantitative statement that measures the effectiveness of the performance of the whole or part of a plan or goal defined in (Norme) by a process or system for the overall strategic framework. Or it is the effectiveness of the process and the efficient use of resources.

From the above, we can say that performance indicators are a means of measurement, but it is not only at this point, it is more complicated as the indicator is more than a number in terms of significance, as it is a more manageable and less complex in the form of compilation of a collection of information that are subject to observation to include a set of elements can be summarized in the following points:

- Setting goals.
- Measuring the impact of activities carried out.
- Noting the direction of the results.
- Provide a vision for the future.
- Comparison of results with external data.
- Preparation of relations based on the "cause / effect" between the business plans and results achieved.(GASB,1994:6-9)

2.2 Division of types of performance indicators

Performance Indicators: They are called performance indicators of success, indicators that help the organization measure progress towards its desired goals. When the organization analyzes its mission, defines its objectives and identifies shareholders from suppliers, distributors, managers, and others, it needs to measure the progress of its performance by using performance indicators.

The selection of indicators used to measure performance is influenced by the purpose of this measurement, such as planning, monitoring, evaluation, change management, communication, optimization and resource allocation. They usually differ from one institution to another. For example, commercial companies usually use performance indicators to measure the percentage of income increase for increasing sales volume, while schools and universities use these indicators to measure their performance by studying student scores. Whichever indicator is used in institutions, it naturally reflects the extent to which the institution achieves its goals and should indicate how successful and measurable it is. In addition, the choice of a few of these indicators to focus attention on achieving specific goals, and should be concerned with performance measures in certain things such as(Mohammed and Rodney, 2011:149-150):

1. Effectiveness indicator: These indicators reflect the degree of achievement of the goals that the organization

seeks to reach. The Organization's effectiveness has been defined as the ability of the Organization to achieve its objectives(Babeker, 2002).

2. Efficiency indicators: The extent to which the best use of all production elements available in achieving effectiveness or objectives(Al-Abadi, 2005:56).

3. Productivity indicators: The amount of output produced by inputs over a period of time. (Hammoud and Fakhoury 2001: 55) believe that the relationship between inputs and outputs is known in a comparable way.

4. Quality indicators: These are the qualitative specifications of the service or the outcomes that the organization produces in the perspective of satisfying the recipients. The definition of quality according to ISO 9000: A set of characteristics of the product, activity, process or institution, which makes it meet the needs expressed and expected or able to meet them.

5. Competitive indicators: The definition of competitiveness of companies is about their ability to meet the needs of different consumers by providing good quality goods and services through which they can access international markets(Adnan and Mohammed, 2001:19).

6. Achievement Indicators: These indicators measure the level of achievement of the practical objectives of a particular team such as:

- Percentage of workers benefiting from the composition of the work methodology in the form of cohorts.
- The number of quality workshops utilized and the number of improvement proposals submitted.

7. Results Indicators: These indicators measure the degree of saturation, which takes several forms as an expected value, or a realized value. And measure the degree of achievement or failure to achieve the goal in the form of level of activity, or costs or achieved margin and so on.

8. Means indicators: A set of indicators that are concerned with productivity by identifying the results obtained from the means used. Examples of these indicators are:

- Direct working hours / productive units.
- The volume of raw materials consumed.

9. Environment indicators: These indicators allow the official to obtain information about his work environment, and enable him to direct the work correctly, and these indicators give light on complementary activities, and may be based on external factors such as prices of raw materials, and the evolution of interest rates and others.

We can conclude from the above that acceptable indicators are built on the basis of data and information provided by the enterprise information system, while others require the institution to provide means of attracting information

through questionnaires and opinions on certain topics on a regular basis.

3. Evolution of performance measurement systems using modern systems based on strategy

Performance evaluation models that can be used to refine the practices of the performance indicators can be categorized into four integrated axes that lead to the mutual success of individuals and institutions by activating the employees' abilities and directing them towards achieving the strategic goals of the institution.

Axis 1: Clarifying the concept of performance management as an integrated periodic system: This type of system corrects the concept of superiors about the performance management system and eliminates many of the negatives resulting from the wrong application of the system, including:

- Depriving the company from the right investment of the most important tools to activate the capabilities of its employees i.e. the performance management system.
- Absence of the relationship between performance management systems and other systems (selection systems, recruitment, development, promotions, career paths, etc.).
- The staff's view of performance appraisal standards as unfair or that the performance system is a useless employee procedure.

Axis 2: The use of merit and competence in developing staff skills and improving their performance: Why do we assign our employees according to their qualifications and then manage their performance (or expel them from work) according to their behavior? Performance-based performance management systems help managers create a balanced performance management system that eliminates many performance management issues such as:

- High rate of resignation among high-performing employees.
- Problems of chronic performance due to errors of selection and appointment.
- The dilemma of poor performance or low productivity in sensitive jobs.
- The problem of the need for new employees for long periods of time to reach the required level of performance.

Axis 3: The method of comparison with the best(Benchmarking):This approach helps the organization's management teach the practices within the organization and learn from the best practices of competitors, thus making changes to improve and work to be the best by defining the goals to be pursued.

Axis 4: Linking the system to the strategic objectives of the institution using Balanced Scorecard: Many institutions lack organizational mechanisms that link business strategies and employee performance, where 77 percent of companies fail to achieve outstanding success on the ground despite clear strategies. Balanced Scorecard helps the organization to make employees from the top of the pyramid to work in a consistent manner by making the strategy the only engine for all by linking personal goals to strategy and eliminating the worst shortcomings of the institutional failure of the relationship between the performance appraisal system and the strategy of the organization.

4. Identification of environmental performance indicators

The Environmental Performance Index consists of 25 performance indicators that are classified into 6 groups covering environmental health, air quality, water resources, biodiversity, natural resources, and climate change. These six groups fall under the above two main objectives, which are combined to obtain the degree and special order in each country. Each country can measure the gap between the current situation and the target and take the necessary measures to close these gaps by approximating the distance between the results of the current situation and the target situation using a convergence approach. The environmental performance manual relies on accurate data and information and the results of its analysis, which are obtained through(Environmental Newsletter):

- The experts in the fields concerned.
- Statistics and decision-makers all over the world.
- International organizations such as the World Health Organization, the World Bank, the Food and Agriculture Organization, UNICEF and the United Nations Environment Program.

4.1 Objective of the environmental indicator

The guide to measurement depends on achieving the two main objectives:

1. Reduce environmental pressures and effects on human health.
2. Increasing the vitality of the ecosystem and the integrated management of natural resources.

These objectives reflect the priorities of the environmental policies of the countries of the world and the adoption by the international community of the Seventh Goal of the Millennium Development Goals (MDGs) that ensure sustainability.

Therefore, the Environmental Performance indicator complements sustainability indicators, and serves as a powerful tool to support the policy making process and transform environmental decision-making into a solid analytical foundation. It also focuses on the impact of the organization on the living and non-living natural systems. These indicators help identify the most important environmental impacts and show

and link the environmental objectives, because the actual benefit of the results of the environmental performance indicator lies in the analysis of sub-indicators that address the various environmental issues and develop and correct environmental policies.

4.2 Assessing the environmental performance of business organizations

Environmental management systems provide a mechanism for monitoring and developing environmental performance. The industrial revolution that took place after the Second World War led to significant environmental pollution that attracted the attention of people from all over the world, which made the 1972 United Nations Conference on the Environment called for the creation of an interest in addressing the causes of this great pollution that will affect the quality of life in the world.

What is the 14000 IOS series and justifications for its existence?

Is a series of international standard specifications for environmental management systems consisting of a number of specifications, each of which is a set of items and requirements of a technical and administrative nature, the purpose of which is to encourage and develop environmental management more efficient and effective in different organizations in order to develop the environment and provide useful and practical means of cost effectiveness (Enrique, 1996:3). These items reflect organizational applications that are available to collect, interpret and deliver environmental information. This also reflects the company's commitment to play an active role in examining its processes comprehensively, integrating them with environmental considerations, seeking ways to increase the efficiency of operations and establishing studies to reduce waste production at an early stage of production, and the search for an opportunity to transform their unwanted secondary products into reusable materials, and to provide customers, shareholders and entities related to environmental issues guarantees that enhance confidence in them and their products (Mayser, 2011:76).

5. The use of Balanced Scorecard as an input to the environmental rehabilitation of the organizations and achieve sustainable development

5.1 The concept of the balanced scorecard and its importance

Traditional accounting systems are based on the financial measurement of organizational performance, which creates confusion between the organization's strategy and performance measurement methods, where that does not reflect the value of most intangible assets, which are an important aspect of market value, such as employees knowledge and skills, customer satisfaction, innovation, and others., And because financial indicators address current and past balanced performance (Lagging Indicators), organizations have tended to develop and create performance systems and indicators that address the future (Leading Indicators), taking into account the intangible assets (Kaplan and Norton, 1992:71-79).

There have been many definitions given to this tool and can be highlighted the most important as follows:

Kaplan Norton says that Balanced Scorecard is a system that provides a coherent set of ideas and principles and Comprehensive roadmap to track the translation of vision into a coherent set of performance metrics. These benchmarks contribute to business execution, business strategy development, business strategy communication, Coordinate between the individual and organizational performance to achieve the long-term objectives that organization seek (Al-ghalibi Idris, 2007:149).

Drury, also points out that balanced scorecard is a strategic management system that translates the unit's strategic vision into operational objectives for each of the four perspectives and then determines the specific performance measures for each goal (Drury, 2001: 493).

5.2 The importance of Balanced Scorecard

Today's organizations need to be excellent both strategically and operationally in order to survive and meet the challenges of tomorrow. And there is only one framework that helps to achieve the required balance between strategy and operations is Balanced Scorecard.

The importance of a balanced scorecard can be summarized as follows (Al-siraj, 2009:4):

1. Clarification and translation of the vision and strategy of the Organization.
2. Connect and link strategic objectives and applied measurements.
3. Planning and setting goals and arranging strategic initiatives.
4. Strategy Evaluation.

Some researchers believes that if the purpose of the balanced scorecard is strategic control, then the importance of BSC will be as following (Kaplan Norton, 1996:13):

- Develop a comprehensive set of key strategic objectives;
- a common understanding of planned activities to deliver strategic objectives;
- a common language that ensures the making of strategic objectives and the plans and objectives of the organization;
- an explanation of the reasons for linking the objectives to the financial requirements of the organization;
- Identify the necessary strategic initiatives; As well as periodic performance and strategy review (strategy assessment);
- Encourage dialogue within the organization on strategic goals and expectations.

5.3 Methodological steps to design and implement the balanced scorecard

Step 1: Formulate an organizational vision to define strategies and build overall strategic objectives.

Step 2: Clarify and translate the vision and strategy of the company.

Step 3: Connect and link strategic objectives and applied measurements.

Step 4: Pay attention to feedback and strategic learning.

Step 5: Evaluate the balanced scorecard to make sure the measurement is correct and then run the card. (Muhaimar and Jameel, 2005:16).

5.4 The fundamental dimensions to be considered for designing a balanced scorecard

Balanced Scorecard design should allow the set of goals and metrics within the organization to be linked to different aspects. This is achieved by taking into account the following points:

1. Main aspects of Balanced Scorecard:

- **Financial aspect:** includes indicators that measure the profitability of the organization.
- **Customer dimension:** It is concerned with identifying customers and the market sector. The performance indicators are then determined for this aspect which can include: customer service, customer retention rate, market share of the organization.
- **Internal processes:** Executives identify the internal processes that are required to be implemented and which enable: to achieve the objectives provided, to satisfy the shareholders. Balanced performance measurement is concerned with the development of new processes and innovative activities to serve and satisfy customers.
- **Learning and growth:** Meeting long-term goals and strong competition requires constant improvement of performance and skills, and growth and development comes in: individuals, procedures, systems.

2. The axes that each dimension contains in the balanced scorecard

The organization should define the following axes for each dimension of the balanced scorecard:

1. Goals.
2. Measurements (indicators).
3. Standards (Target Results).
4. Initiatives.

3. Causal Relationships: Many strategic processes represent relationships of cause and effect, and therefore the measurement must achieve the relationship between them

so that they can be managed and verified. The relationship must include the four aspects of a balanced scorecard (Youssef, 2005:35).

4. The organizational unit for the implementation of balanced scorecard: The best application of the Balanced Scorecard is the strategic units within the business organizations where it has an integrated chain of activities that form the value chain in stages of development, operations, marketing, distribution, sales, customer service.

5. Four aspects only: Is it sufficient?

Balanced scorecard includes four main sections, which can be added to other elements according to the organization and its circumstances and surrounding environment. For example, an organization can put the environment side as it affects its main operations, and other organizations add human resources as well as key perspectives.

6. Expanding the circle of balanced scorecard by integrating the environmental dimension as a mechanism for environmental rehabilitation of the organizations

The environmental dimension is clearly reflected in the concept of sustainability of companies, and then successful organizations try to pay attention to tools that achieve a good assessment of their environmental performance. As noted above, the balanced scorecard is a tool for turning strategies into action, and if the objective of the study is to integrate the environmental strategy into the balanced scorecard, it is necessary to identify the strategy of sustainability of companies, which represents the environmental dimension as an important pillar.

6.1 Linking sustainability elements to Balanced Scorecard indicators

Environmental and economic issues are addressed together within the framework of environmental accounting but represent only two pillars of sustainable development. The concept of sustainable development is equivalent to the concept of well-being, which requires recognition that humankind must coexist within the limits of available resources and its determinants. Sustainable Development, defined as three pillars of economic, environmental and social pillars. (Al-Najjar, 1999:498). Therefore, institutions must seek to achieve growth rates away from distortions and structural imbalances in the areas covered by the model of important elements of economic, social and environmental sustainability. These are the areas that allow organizations to think about links between two dimensions of sustainability:

1. Business Status: addresses how environmental sustainability contributes to economic sustainability, and allows organizations to develop appropriate strategies within environmental and social sustainability.

2. The human condition: It deals with how economic and environmental sustainability contributes to social sustainability, and is based on the idea that environmental things will help people develop themselves, and

environmental protection is carried out to protect people in the long term.

3. The Green Situation: Sustainability is viewed from the perspective of how it serves the environment, and organizations then look at how economic and social sustainability affects environmental sustainability.

As for the framework that organizations can use to promote sustainable development, they should cover their three dimensions (economic, social and environmental). If sustainable development provides important topics that can be incorporated into the tasks, strategies and processes of organizations concerned with the future, we believe that the framework of the balanced scorecard fits well with this challenge as it includes important areas of sustainability and environmental responsibility such as: satisfaction of stakeholder parties, organizational learning, and development, The environmental performance associated with its four dimensions.

6.2 Introducing environmental information in the balanced scorecard - a sustainable balanced scorecard

The balanced scorecard is a powerful framework for managing and evaluating environmental, social and economic issues, integrating environmental issues into the organization's value creation system, furthermore being the foundation of the organization's strategic management systems. Compared to the conventional balanced scorecard, the interaction between the parts in traditional systems leads to the closed cycle and no new progress in the organization's business model, while the environmental balanced scorecard systems achieve linear relationships between the parts, leading to a good business model (Al-Najjar, 1999:522).

There are many views on how to incorporate and integrate the environmental dimension into the balanced scorecard, where some see that there are three possibilities to integrate environmental and social issues into the balanced scorecard:

- Integration of environmental and social measures in the four dimensions in the balanced scorecard.
- Add a fifth dimension to take environmental and social matters into account.
- Creation of a balanced scorecard for environmental and social performance.

The environmental dimension is related to the consumption of energy, raw materials and their waste, the emission of pollutants, etc. The strategic objective of the

environmental dimension is determined according to the concepts of industrial biotechnologies and is related to measures that can be derived from environmental management systems, environmental management accounting systems and life cycle analysis of products.

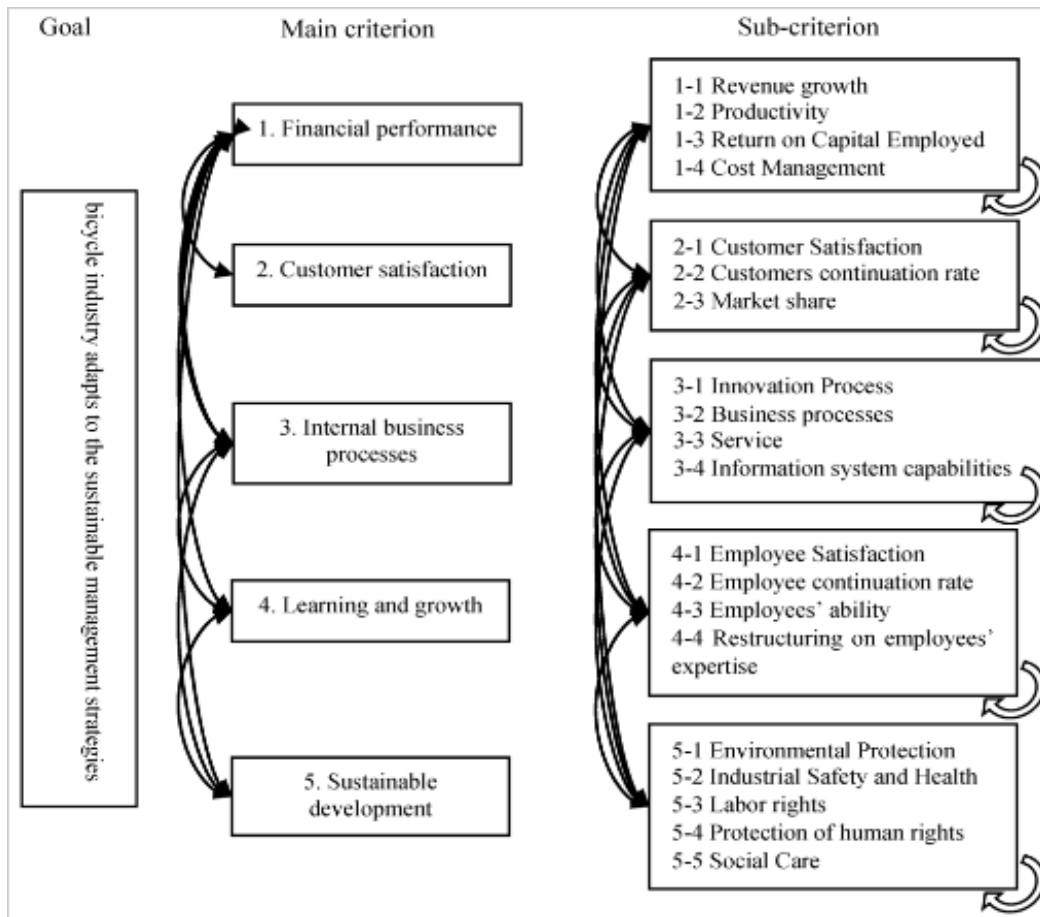
The balanced scorecard can be a better tool for integrating environmental and social management systems into the core operating processes of business organizations, the demonstration, and integration of the environmental dimension depends on the view that calls for planning and evaluating green behavior at the operational strategy level, an integrated performance measurement system should therefore be established at this level. According to this approach, we note that the dimension of operational processes, which includes related environmental measures, leads to the other three dimensions of a balanced scorecard (financial dimension, customer dimension, learning and growth) and attempts to reconcile market requirements with materials and operational capability.

According to some studies conducted, many agreed that there are more than two ways in which environmental and social issues can be integrated into a sustainable balanced scorecard. For example, we will list the two most important methods agreed upon:

1. Balanced Scorecard with an added dimension. A fifth dimension of environmental and social sustainability is added to the four dimensions of a balanced scorecard. This solution develops the state of sustainability in the organization and can be applied in companies that are highly vulnerable to sustainability issues.

2. The overall sustainable balanced scorecard

The fifth sustainable dimension is linked to the future indicators of all four dimensions, thus making causal relationships clear, while maintaining privacy, aiming at introducing environmental and social issues in all dimensions, promoting the idea of systematic knowledge of sustainability, while environmental competition strategies provide a good basis for describing the mechanism of a sustainable balanced scorecard and placing it in the content of appropriate strategy scenarios. The following figure shows an illustrative example of how the environmental balanced scorecard works by integrating the dimensions of a balanced scorecard with elements of sustainability to reach the ultimate objective of maximizing the value of shareholder.



Sustainable balanced scorecard

Source: Chih-Chao Chung ,et al, Sustainability 2016, 8(6), 518; doi:10.3390/su8060518.

7. Conclusion

Through our study to integrate the environmental dimension in the balanced scorecard, the multiple models of the balanced scorecard and how to achieve the objectives of the organization, we reach the following results:

1. The sustainable balanced scorecard (SBSC) contributes to the visibility and sustainability of companies, where formulation processes force the management to identify important sustainability strategies and identify cause and effect relationships. Although it is not a tool for creating strategies but a tool for translating them into business, SBSC provides a way to review the effectiveness and efficiency of the strategies followed In the past and identify them to reach the vision and tasks of the organization.
2. As a management system, the SBSC outperforms the ISO 14000 environmental management systems and therefore the management should focus on a few carefully selected targets that are already important to

the organization, preventing them in a positive way from being absorbed in the hundreds of sustainability problems faced by the organization. Environmental management systems can be integrated into the traditional management systems of the organization, so practitioners will consider the eco-balanced scorecard as an appropriate tool to determine the sustainability of companies and transform them into operational processes for the organization.

3. SBSC is a tool to provide new opportunities to integrate environmental goals and standards into existing business systems. However, because a large number of goals in a balanced scorecard will increase with sustainability objectives, It can be said that SBSC will not exclude other tools for sustainability such as ISO 14000 or SA 8000 But they help to spread the idea of sustainability within the Organization's processes and structures and link them to strategic action.

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