

# Sustainability : Its Factors and its Performance Evaluation

**Amr Essam Sukkar**

LIGS University, Honolulu, Hawaii, USA 9681

Email: amressamsukkar@gmail.com, asukkar@msa.eun.eg, mrsokar@yahoo.com

Received September 17, 2017; Revised September 29, 2017; Accepted October 1, 2017

## Abstract

*Now a days, the world suffering from deflation of the resources and economic problem, thus Sustainable practices need to be accountable at the same time the Small and Medium-sized Enterprises focus on the profit without any care about ability of future generations to meet their own needs, the author has decided for the topic by illustrate the benefits that can the enterprises gain if they put the adaption of the sustainability concept in their strategic plan, moreover the paper highlighted on at strategic tools can be used to measure and compare the environmental impact of human activities for the provision of goods and services. In this paper the author will show the importance of sustainability performance evaluation and the most common indicators that are used to evaluate the companies' sustainability performance.*

**Keywords:** *Balanced Score Card, Environment Management Systems, Environmental performance, Leadership, Life Cycle Assessment, Small and medium enterprises, Social performance, Strategic planning, Strategic sustainability goals, Sustainability performance, Triple bottom line*

## 1. Introduction

There is an increasing agreement that businesses need to embrace environmental sustainability, while recent research on leading sustainable development in the management field still provides only limited guidance on how this should be done [1]. Preliminary research carried out by the Author in Egypt suggests that there are few role models to suggest a way forward. The concept of sustainable business is relatively new. In 1987, the Brundtland Commission coined the phrase sustainable development, defining it as a development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” [2]. The definition of a sustainable economic system might be “one which fulfills present and future needs while using, and not harming, renewable resources and unique human environmental resources of a site: Air, land, water, energy, mineral resources, and human ecology and/or those of other (off-site) sustainable systems” [3]. This concept was highlighted during the 1992 United Nations Conference on Environment and Development in Rio de Janeiro. Since this summit, organizations worldwide have adopted practices for sustainable develop-

ment, economies, and societies [4]. These practices converge around a concern for the environment, economic growth and the development of the world's poor.

The following sections aim to provide a better understanding of the sustainability concept in the organizational context, as well as the relationship between business and the environment in context of that concept, and in addition, attempt to highlight the issue and probable solutions concerning the disparity between business profitability and the existence of the sustainability leader in the small and medium enterprises (SMEs) and the organizational financial results.

## **2. Sustainability and organization financial results**

The main aim for profit enterprises is maximizing the shareholder welfare, the sustainability concept is important for continuity of the business and resources for the next generation but still the profit is the first priority for the enterprises. The challenges are how enterprises can save/gain money from adapting the sustainability concept at the enterprises, how can enterprises achieving their profit goals parallel with caring about their responsibilities to the social and environmental. This way of think should engage in design, production, supply, and marketing activities [5].

A survey of Australian SME's showed that during the process of interviewing larger corporations, they became more aware of environmental responsibility than SMEs. Moreover, they showed that SMEs were generally slow to introduce environmental management controls [6]. A small number of Chinese small firms have adopted a formal management system with concern about the environment and attitudes to sustainability management but which have not yet been incorporated into business strategy [7].

Some researchers argue that organizations require a paradigm shift to adopt more sustainable ways of thinking and behaving [8]. More research is needed in order to change attitudes and behaviors in the workplace to make companies more interested in environmental sustainability, and allow companies to be responsible for their future in terms of resource-consumption. A sustainable future is the idea that fits a business system which sustains natural and human resources - again, a form of Plant, people and Profit (PPP) [3].

“Small and Medium-sized Enterprises (SMEs) will play an ever-increasing role in sustainability achievement” [7]. There are many managers who believe that any ecological efforts in small business are of negligible results or that it is the government that should be responsible for issues regarding environmental care. Therefore in this paper it is suggested that in order to encourage SMEs which are ignoring sustainable practices to adopt and incorporate them into business strategy, paradigm shifts are needed to allow for change inside firms which is the main task for leaders.

The key driving factors of sustainable practices are shown in **Figure 1**, which shows that corporate image is the most important driver [7]. Other factors, besides improving public image, are government and legislation, personal concern, consumer pressure, supply chain pressure, cost-saving, public pressure, international competitiveness, exploring market opportunities, and employee pressure. The significance of this research is that it attempts to address inherent individual characteristics of sustainability leaders apart from such external pressures as mentioned by Yu and Bell and apart from its financial impact on the company as well.

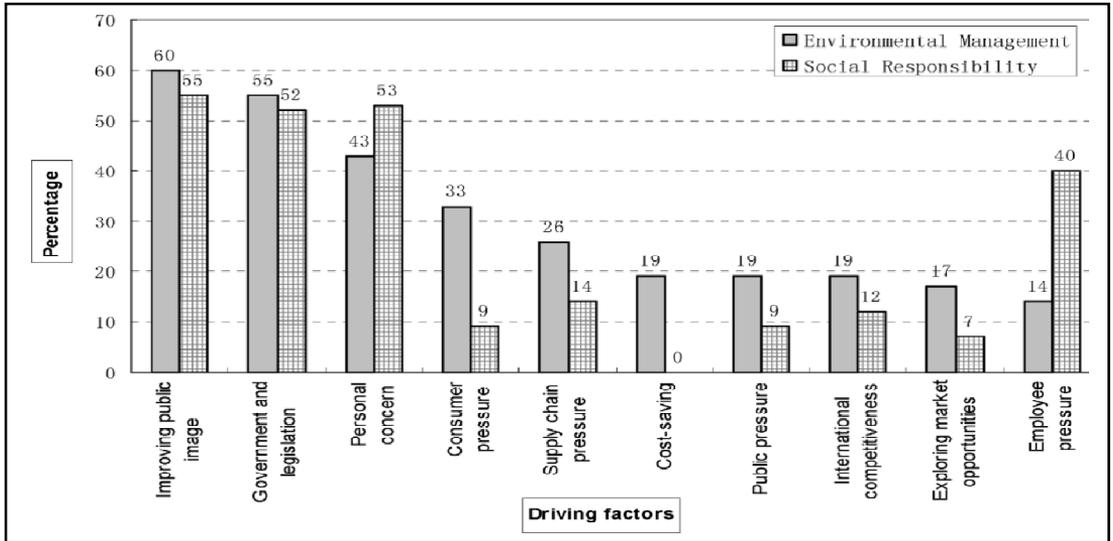


Figure 1: Drivers of implementing environmental and social practice [7].

Another external factor regarding sustainability practices relates to how leaders link such practices to financial benefits where many believe that there is no such link or, on the contrary, might believe that such practices are unjustifiable costs. This may be due to a lack of knowledge or lack of interest in measuring such financial benefits [7]. One of the main obstacles to implementing business sustainability in SMEs is the fact that leaders of SMEs focus on cash flow and staff availability that allow them to perform focusing on surviving on a monthly basis not allowing for time to incorporating sustainability into their strategic thinking [3].

Moreover, several leaders consider that their companies' environmental impact is very limited and many services or non-manufacturing companies believe that environmental issues are of no relevancy to their sector. The researcher, thus, argues that one critical obstacle to implementing business sustainability in SMEs is the leaders' unawareness of the concept which leads them to neglect environmental and social management issues in their strategic priorities and even neglect thinking that they might have different individual sustainability leaders' characteristics.

Figure 2 identifies both driving and resisting forces and an approach to behavior change. It shows poor eco-literacy, low environmental awareness, economic barriers, inadequate institutional infrastructure and limited business support as the resisting forces that need to be minimized and driving forces that need to be strengthened such as education and training , effective research , regulatory framework and institutional reform [9].

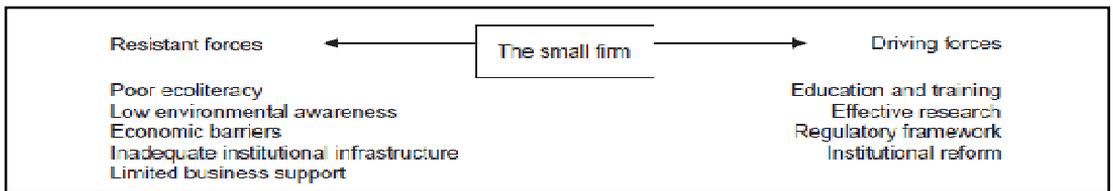
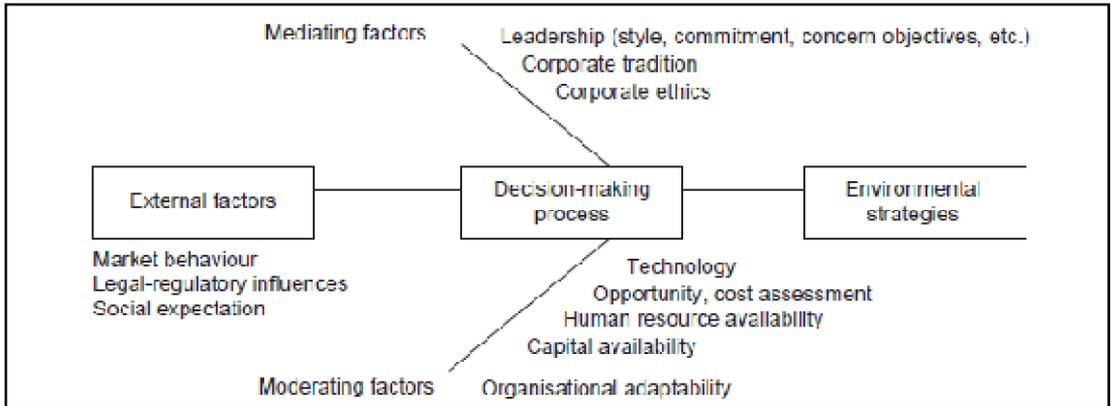


Figure 2: The forces influencing environmental attitudes and behavior of small firms [10]

Ghobadian's figure illustrates the environment-related decision-making elements and processes [9]. Ghobadian's figure offers an overview of some of the key contextual elements and insight(s) to interactions related to SME-environment decision making market behavior, regulatory influences and social expectation as external factors and the mediating factors which interact to lead decision making in confederations that the outcomes of this process are ultimately moderated by factors such as opportunity cost assessments, capital and resources availability, etc.



**Figure 3: Interaction of external, mediating and moderating factors in the UK context [11]**

The clear focus to raising attention on environmental issues is based on impacting mediating factors and the important role of exerting pressure such as the context of Tilley 1999 [9]

Though the above paragraphs highlight many different factors that can influence business sustainability, the objective of this research is to focus on leaders' attributes. It is obvious though that among the above mentioned factors there are those that might influence leaders' attitudes or decisions concerning sustainability issues besides their own attributes. As an example of such factors and as highlighted in **Figure 3**, opportunity, cost assessment, human resource availability or capital availability act as moderating factors that are suggested to impact the leader's decision. It is thus the role of this research, in the field research phase, to discover those factors like the ones mentioned above but in the context of the Egyptian culture and norms that would provide a more comprehensive model as an output of this research.

Maximizing human welfare is only possible if there are structures that encourage development, innovation, conservation, and discovery of new resources, where growth and increasing wealth through these methods, lead to improved social and environmental quality. This suggests that sustainability can be achieved in this new era of responsibility only if a company is meeting the challenge and does what is right for the environment and society [12].

Carried out a two-year grounded theory study of 24 successful leaders of increasingly sustainable organizations in education, business and community [13]. It had been found that sound stakeholder management from a social performance perspective positively correlates with the corporation's financial performance [13]. That suggests that applying sustainability in companies has become an important competitive edge, where economic, social and environmental indicators are more frequently presented, generating useful management scenarios for anticipation of new risks and market opportunities

and if large corporations ignore social and environmental aspects, they put their profit at risk. “European citizens support the government’s coordinating, and regulating role to reconcile the economic, environmental, and social dimensions of sustainability” [14] and therefore, sustainability has become a primary competitive factor for many manufacturing companies in Europe.

Moreover, “sustainability is often linked to innovation management as an approach to creating competitive advantage or delivering long-term shareholder value” [15]. Following that line of thought, the global sustainability challenges and the economic opportunities, which may present to their companies [3]. But to capture such opportunities and gains a company needs to be able to manage aspects related to sustainability or, for that cause, be able to control it, which arouses concerns about how performance related to sustainability can be measured.

### **3. Business opportunities in sustainability concept**

If we need to find business opportunity always we should search for a problem to solve it or observe new trend or find a market gap. That is exactly happened with eco-products which they working on solving the environmental harm increasing, it became business grand that the product eco friendly and eco product fill the gap of finding healthy and environmental friendly products.

The above illustrates that we can find business opportunities during follow sustainability polices reduce waste and make this planet a better place to live.

For examples;

- Cloth Napkins: Millions of napkins and diapers are disposed every day in the world, after having been used just once. Its reusable products. They are easily washed and as a bonus will keep your baby away from the harmful chemicals used to make classic diapers.
- Convey with fabric alternately cotton network pack on keep away from whatever issue. Actually, A percentage supermarkets What's more shops need now produced a move towards ceasing will provide for plastic bags away, or are charging them to dissuade individuals from utilizing excessively awful Numerous of them.
- Gota Dishwasher: The Gota dishwasher created by Yanko Designs looks like a little spaceship, but it actually cleans the dirty dishes by steaming them in the pre-washing cycle and keeping the water to reuse it in later phases.

### **4. Performance Management**

Performance Management is process that significantly affects success of the organization when managers and employees work together to set, reviews results, reward performance and expectations. “After establishing organization goal and standards; (i) Planning – establish performance goals, development goals, and action plans with employees at the beginning of performance period, (ii) Managing – observe, Furthermore archive exertions Furthermore accomplishments; provide feedback, mentor Furthermore counsel representative in regards to execution – Throughout whole execution period. And, (ii) Appraising - evaluate employee’s accomplishments and skills, discuss evaluation with employee – at the end of performance period (Historical document)” [12].

There is a necessity for using the performance management matters to every manager, as he can use it to ensure that services are effective and efficient. “Councilors can use it to ensure that policy decisions are being carried out and citizens are being well served. Increasingly, citizens and partners can

use aspects of performance management, such as public reporting, to hold the council to account” [16].

Performance management is about good management, ensuring that your community, organization and team goals are achieved.

It helps to:

- Prioritize what gets finished Furthermore guarantee there are addition assets should do it
- guarantee nearby powers gatherings give worth to money
- Identify and rectify poor performance at an early stage
- Learn from past performance and improve future performance
- Increase user and public satisfaction
- Motivate and manage staff [16].

### 5. Ease of Use

Sustainable practices need to be accountable and, thus, should be measurable as mentioned above, and as companies implement sustainable programs by applying new policies or adopting new technologies, realistic and clear goals and objectives should be put forth and compared to actual performance on a systematic and continuous basis [17].

Sustainable development requires methods and tools to measure and compare the environmental impact of human activities for the provision of goods and services. In this section the researcher will show the importance of sustainability performance evaluation and the most common indicators that are used to evaluate the companies' sustainability performance [18].

Fiksel argues that “sustainability performance measurement (SPM) must be approached as a systematic business process in order to be integrated effectively into company strategic planning and day-to-day operations” [19].

Sustainability performance can be defined as a company performance in all dimensions and for all drivers of organization sustainability. The concept of multidimensional performance evaluation is based on the Triple Bottom Line theory.

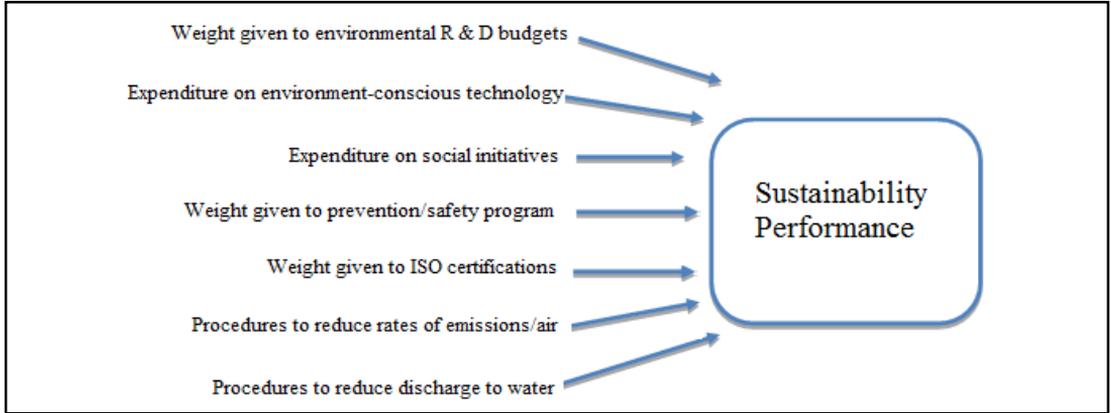


Figure 4: Triple bottom line performance [20]

Triple bottom line entails the comprehensive management reporting of business results and development of the economic entity with a balance of environmental, social and economic capital [20]. To

identify such balance, it is essential to explore how company products or practices impact the environment and society.

We can measure the sustainability actions and performance by: [9].



**Figure 5: Measure the sustainability actions and performance**

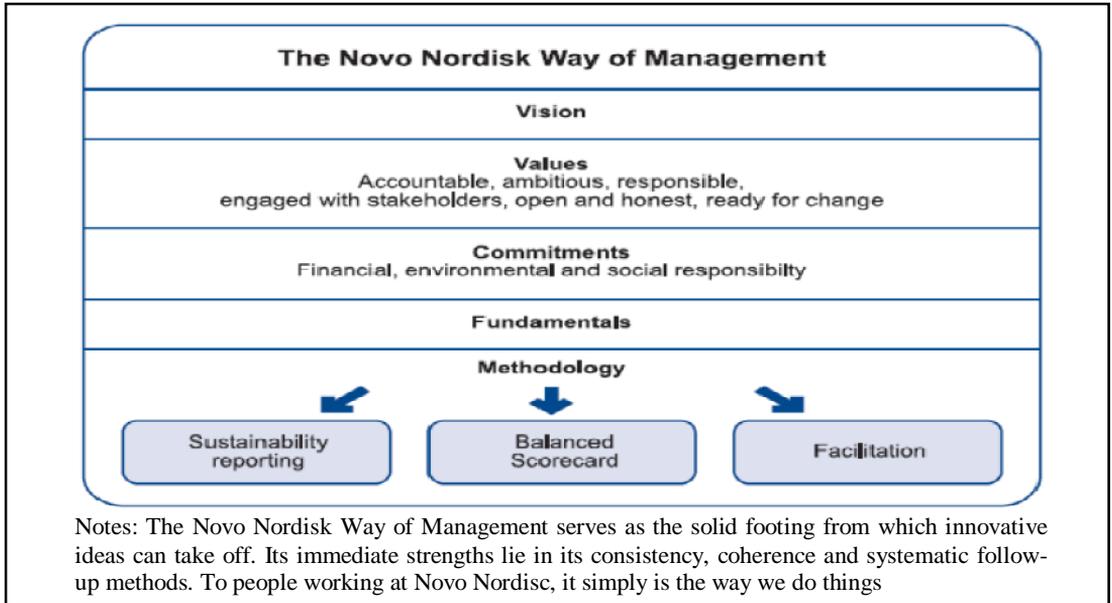
According to the author practical experience in Egyptian context which supported with literature reviews, there are many managers who believe that any ecological efforts in small business are of negligible results or that it is the government that should be responsible for issues regarding environmental care. They occupied by short term outcomes and daily issues rather than with strategic concerns or issues like environmental care and sustainability due to limited resources in terms of time, man power as well as financial resources.

Therefore in this paper is suggested that in order to encourage SMEs which are ignoring sustainable practices to adopt and incorporate them into business strategy, paradigm shifts are needed to allow for change inside firms which is the main task for leaders.

The SMEs should follow the multinational companies to put the adaptation of the sustainability concept in their strategic plans and the following is examples cases;

**Case 1: Novo Nordisk is a world leader in diabetes care and focus entirely on health care.**

The company introduced a way of management in 1997 to ensure integrating sustainable business practices at the operational level (**Figure 6**).



**Figure 6: The Novo Nordisk Way of Management [21].**

In order to help managers consider sustainability in all of their business decisions, the company has adopted the Novo Nordisk Way of Management as an operating tool to help leaders consider sustainability in all of their business decisions, based on three pillars:

Facilitators who are formed of a team of around 16 high-profile professionals at the holding company working to support the sustainability adoption,

The annual (sustainability) reporting used to ensure that sustainability thinking becomes part of everyday business practices and to measure its progress towards sustainability by using a Triple Bottom Line approach which links a set of key targets to sustainability goals.

And the balanced scorecard which is the management tool for embedding and cascading the Triple Bottom Line approach throughout the organization. The scorecard is a vital element of the corporate governance set-up in Novo Nordisk and thus a very powerful tool to ensure integration of the sustainability approach into all business processes [21].

### **Case 2: The Nestlé Policy on Environmental Sustainability**

As the leading Nutrition, Health and Wellness Company they strive to enhance the quality of life for our consumers everywhere with tasty, nutritious and healthy food and beverages. They understand that this sense of well-being also requires that their products are made in a caring and responsible way that preserves the environment for future generations. They are committed to create shared value over the long term by increasing the world's access to higher quality food and beverages, while contributing to environmentally sustainable social and economic development, in particular in rural areas.

Nestlé's environmental stewardship is guided by three principles:

- Their responsibility towards society, present and future

- Their desire to delight consumers
- Their dependence on a sustainable environment that can provide the high quality resources we need to make good food and beverages.

This is the third edition of this policy, originally published in 1991. It takes into consideration valuable feedback from a broad range of consumers and business partners.

Our commitment to environmentally sustainable business practices

The Nestlé Policy on Environmental Sustainability

In line with the Nestlé Corporate Business Principles which include the United Nations Global Compact's principles on the environment we commit ourselves to: full compliance with environmental legislation and our internal requirements which are often more stringent; continuous improvement of our environmental performance by integrating environmental principles, programs and practices into each business through our Nestlé Environmental Management System (NEMS) that complies with the international ISO 14001 standard; What's more affirmation for practices; meaningful and accurate environmental information about our products and activities based on scientific evidence; environmental awareness training and education for our employees, business partners and society; environmentally sound labor practices and recognition of efforts by our employees towards environmental improvement; open dialogue with our suppliers, staff, customers, consumers, and the community on products and activities related to environmental issues.

They apply a product life cycle approach involving our partners from farm to consumer in order to minimize the environmental impact of our products and activities. The aim at all stages of the cycle is to use natural resources efficiently, to favour the use of sustainably-managed renewable resources and to target zero waste. In this way, they intend for our brands to stand for environmental sustainability.

Their priority areas; specific to our food and beverage business we have identified our four priority areas as follows: which is used by all our suppliers, operations and by consumers. As a founding signatory of the United Nations Global Compact CEO Water Mandate, we continue to: work to reduce the amount of water withdrawn per kilo of product; assure That our exercises admiration nearby water resources; fare the well that water we release under nature's domain will be clean; participate for suppliers will Push water conservation, especially among farmers; reach out to others to collaborate on water conservation and access, with a particular focus on women and children.

When selecting they: Prefer to use agricultural materials which are produced based on sustainable practices and are locally available; Provide technical assistance on sustainable agriculture production methods with our local Nestlé agricultural services or through partnership with public agricultural services and research organizations; Promote cooperation with other stakeholders in the food chain to leverage sustainable development in agriculture worldwide, in particular through the Sustainable Agriculture Initiative Platform that we co-founded. During the end of our products, we use efficient technologies and apply best practices to: reduce the amount of energy consumed per kilo of product; utilize sustainably-managed renewable energy sources, where economically viable; control and aim to eliminate emissions, including greenhouse gases; recycle or recover energy from by-products.

Products are critical to guarantee our high quality standards, to prevent food waste and to inform consumers. They strive to: reduce weight and volume of materials; lead the development and use of materials from sustainably-managed renewable resources; support initiatives to recycle or recover

energy from used packaging; The Nestlé Environmental Management System. This policy is implemented through our Nestlé Environmental Management System (NEMS). Local management is accountable for its implementation. To guarantee a reliable What's more sound usage worldwide, Nestlé submits the greater part its manufacturing destinations on ISO 14001 Confirmation by autonomous certify forms.

### **Case 3: IBM**

Daily news reports that point to the growing threat of climate change, new legislation, community demands, staff morale and moral imperative all contribute to the increasing pressure on organizations to go green. Loud and clear, business leaders cannot help but get the message. What is not so clear, however, is the how – CEOs need to hear what specifically they should do to best incorporate environmentally friendly initiatives into the workplace.

It is only when leaders are convinced that responding to ecological needs will complement good business sense that we can expect the rate of conversion to green practice to increase at the rate scientists hope.

Eric G. Olsen, a Senior Managing Consultant for IBM Global Business Services, puts forward a series of suggestions as to how organizations can best begin to develop a green strategy. He argues that a green strategy can form not only the basis of a wider social responsibility program, but can also widen the company's scope of products and services, help form new alliances and improve overall profitability. Just a series of small steps can soon make a big difference across a whole company, and can lead to the development of a mature integrated green strategy. The following list of tips on going green can be no bad place to start:

Place reusing bins for drinks jars What's more paper done noticeable spots for the workplace, and urge individuals to utilize them Eventually Tom's perusing conveying how reusing could enhance worldwide natural patterns.

Encourage a culture that is always aware of waste. Request that lights are turned out in meeting rooms when not in use and that electrical equipment is not left on. Turn televisions and computers off rather than leaving them in stand-by mode. Let staff know how much energy this collective effort will save over a year if everyone makes an effort.

Develop tools and training to explain the threat of global warming and how the business environment can contribute to slowing down the effects. Make it standard procedure that all staff should have training on environmental issues.

Show that the company as a whole is actively involved in supporting the environment. Sponsor initiatives in the local area such as reforestation, litter collection and so on and invite staff to partake in relevant volunteer work. Avoid unnecessary travel by using video-conferencing. Try to get feedback on your company's efforts by sending press releases to newspapers. Similarly, create an in-house news bulletin to update and encourage staff. Make sure operational decisions are made in accordance with green strategy from the top down. Ensure that senior executives lead by example and display proactive behavior. Take advantage of an opportunity to establish strategic differentiation and prioritize product development projects based on their green contribution. Consider forming new partnerships with other companies based on a shared interest in helping the environment. The internet provides an ideal platform for the global business community to come together over the issues they are

most concerned with. If your company delivers products to customers, think about introducing a green delivery option, which may take into account gas emissions from various modes of transport as well as the speed with which the product will arrive. Consider updating materials used in the workplace. Use recycled paper and energy-saving light bulbs, or even invest in motion-sensors for lights that will only switch on when someone is in the room. Buy computer products from vendors that operate in an environmentally friendly way. Reward green contributions in performance management reviews. B Adapt bonus schemes to include a small percentage that is based on recycling efforts of the company. If your company owns a fleet of cars, look into hybrid vehicles. If you use warehouse facilities, consider opting machinery that is powered by electricity rather than natural gas. A wide variety of organizations in many different sectors are already offering a good example on how best to go green. Business leaders may be inspired by a few examples: GE Money offers a credit card that invests 1 percent of the cardholder’s purchases in carbon offset projects. It encourages customers with the claim that \$9,000 of shopping will offset their annual expected emissions. AISO.net, a partner of IBM, boasts 100 percent solar powered web hosting. IBM has launched a “Project Big Green” to help reduce the energy costs of the company and its clients. Chevron, Bank of America and the San Jose Unified School District have between them launched the USA’s largest K-12 solar power and energy efficiency program, which stands as a model for other renewable energy programs. As Olsen argues, the potential benefits of green possibilities for a company are huge. A formalized, well-communicated strategy will help attract educated and talented staff, will improve the company reputation, will attract new partnership opportunities and will increase top-line revenue growth. It is just a matter of starting with a few simple steps.

**Balanced Score Card (BSC) as a tool for sustainability performance evaluation**

Successful companies are planning for both the short term and long term. However, coming-up with a good strategy is not easy. And even when you have a good strategy, trying to measure and evaluate the performances can be even more complicated.

The concept of the Balanced Scorecard (BSC) was developed in the early 1990s as a new approach to performance measurement by Kaplan and Norton [22]. The below table giving a brief history of balance score card.

**Table 1: Brief history of balance Score Card (BSC), Source: [12]**

2003	Strategy Maps: Converting Intangible Assets into Tangible Outcomes (~December 2003)
2000	The Strategy-Focused Organization
1996	The Balanced Scorecard: Translating Strategy into Action
1996	Using the Balanced Scorecard as a Strategic Management System (HBR: Jan-Feb 1996)
1993	Putting the Balanced Scorecard to Work (HBR: Sep-Oct 1993)
1992	The Balanced Scorecard - Measures that Drive Performance (HBR: Jan-Feb 1992)
1990	Measuring Performance in the Organization of the Future (one-year multi-company study)

The Balanced Scorecard is a strategic planning and management system being used in business, government, and nonprofit organizations worldwide. It provides a method of aligning business activities to the vision and strategy of the organization.

The Balanced Scorecard creates a framework for measuring companies’ strategies and performances; moreover it helps to set of tangible objectives coming out from the company strategy and to translate the company’s strategy into a reality.

It helps to set important questions should be answered by the management, for examples;

- Is organization working according to strategy and vision?
- What are the financial objectives of the organization?
- Are the customers satisfied?
- Are the goals of the organization achieving properly? etc.

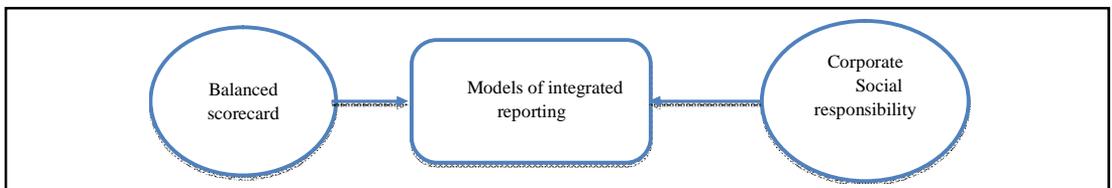
There are four The BSC's four perspectives can be characterized briefly as follows [22]:

- Financial perspective; (Cash flow, Return on investment, Financial result, Return on capital employed Return on equity)
- Customer perspective; (Delivery performance to customer - by rate, Quality performance to customer - by quality, Customer satisfaction rate, Customer loyalty, Customer retention)
- Internal process perspective; (Number of activities, Accident ratios, Opportunity success rate, Overall equipment effectiveness)
- Innovation and learning perspective. (Investment Rate, Internal Promotions %, Employee Turnover, Gender Ratios, Illness rate)

The above prospective can be help to improve the organization alignment and the communications, both internally and externally. In addition to can Linked strategy and operations, emphasis on strategy and organizational results and integrated strategic planning and management.

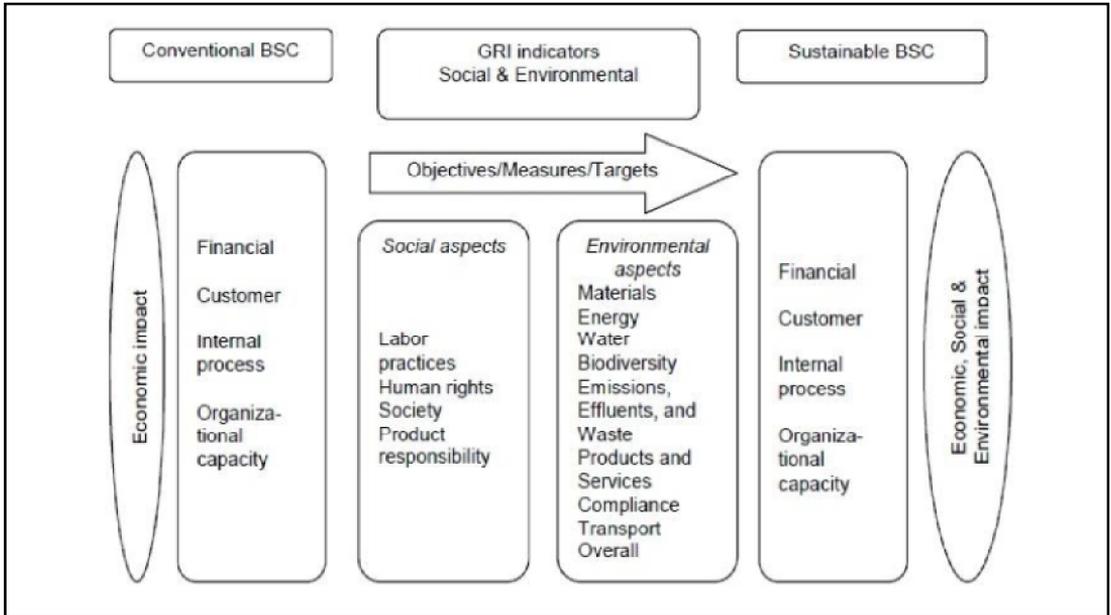
Balanced Score Card (BSC) as a tool for sustainability performance evaluation

Focus on the environmental and social consequences of organizational practices should form a basis for strategic management of organizational sustainability initiatives as well as its competitive strategies. Literature discuss concepts and models of integrated reporting by referring to two perspectives: The first one is corporate social responsibility or sustainability reporting, originally referred to as the triple bottom line of economic, environmental and social metrics [23]. The second one is the balanced scorecard, which includes financial and non-financial metrics. The use of environmental performance indicators has a rather short history in managerial accounting that mostly link to the creation of tools such as the balanced scorecard which helps identify critical indicators in recognizing the multidimensional nature of organizational performance [24].



**Figure 7: Concepts and models of integrated reporting by referring to two perspectives**

A strategy-based balanced scorecard system aligned with principles of the Triple Bottom Line offers a way to accomplish social and environmental goals while integrating them fully with financial performance and competitive advantage [25]. **Figure 8** illustrates how the same measures used in conventional Balanced Score Cards can incorporate the dimensions necessary for the application of sustainability concepts.



**Figure 8: Model for integrating social and environmental indicators in BSC**

This figure adapted from “Social and environmental performance indicators: Dimensions of integrated reporting and benefits for responsible management and sustainability” [24].

To set up a balanced scorecard to meet the requirements of sustainable development, a company should implement the following steps [25].

Identification of an integrated reporting - management vision of a company’s performance; adaptation of issues that define the economic, social and environmental performance to the company’s sustainable strategy.

Setting targets for every aspect of reporting.

Developing and documenting the necessary actions to achieve the proposed objectives.

Developing a performance management model in relation to company objectives.

Designing and implementing an integrated process for assessing integrated (TBL) performance for completion of objectives and actions at least quarterly.

The leadership should ensure that labor practices have efficient processes complying with company requirements related to social and environmental aspects. For example, a company becomes more environmentally responsible by verifying CO<sub>2</sub> emissions, green process design, carbon footprint evaluation for products and packaging, testing oil and water for contaminants, checking air quality, assessing noise pollution, achieving environmental management systems certificates as well as implementing procedures to minimize the risk of corruption within organization and increase social capital. Besides the BSC as a strategic measurement tool that can be used for measuring sustainability performance, life cycle assessment is a system of regulations and certifications frequently used by different companies to demonstrate compliance with sustainability performance standards. This is explained in further detail in the section below.

The below table illustrate an example for a pharmaceutical company (Bristol Myers Squibb) which focused on the integration of environmental sustainability issues in the corporate balance scorecard.

**Table 2: Example of Bristol Myers Squibb sustainability and environmental performance objectives and measurement [26]**

Financial perspective	Customer perspective	Internal process perspective	Learning and growth perspectives
<ul style="list-style-type: none"> <li>• cost saving</li> <li>• \$ saved from accident reduction</li> <li>• saved from product life cycle review</li> <li>• Investment</li> <li>• \$ spend on e-health and sustainability projects</li> <li>• Remediation cost</li> <li>• Preventive cost</li> <li>• Community improvements</li> <li>• Revenues</li> <li>• Sales from environment friendly products</li> </ul>	<ul style="list-style-type: none"> <li>• External customer support</li> <li>• Products safety</li> <li>• Post customer -waste recycled</li> <li>• Customer education</li> <li>• Product safety brochures distribution</li> <li>• Goop citizenship</li> <li>• Awards</li> <li>• Product donations</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental performance</li> <li>• Water use</li> <li>• Packaging reduction</li> <li>• % solvents recycled</li> <li>• Energy use</li> <li>• Hazardous waste generated</li> <li>• Supplied review</li> <li>• Employment performance</li> <li>• Work exposure</li> <li>• Lost workdays</li> <li>• Work related injuries and illnesses</li> </ul>	<ul style="list-style-type: none"> <li>• Employee practices</li> <li>• Training hours</li> <li>• Ergonomic reviews</li> <li>• Diversity</li> <li>• Transfer of best practices</li> <li>• ISO 14001 certificates</li> <li>• Product life cycle reviews</li> </ul>

**Life Cycle Assessment (LCA) as standards of sustainability performance**

Performance indicators should be developed to evaluate sustainability activities undertaken by companies. We should translate each sustainability activity into a metric that can be linked to sustainability performance. They highlight three types of activities:

- Formulating the sustainability strategy,
- Developing plans and programs, and
- Designing appropriate structures and systems.

Moreover, they provide examples for sustainability activities as illustrated in the table one below.

**Table 3: Sustainability activities [17]**

Sustainability strategy (goals)	Plans and programs	Structure and systems
Increase the number of facilities with screening procedures against the use of child labor (No. of facilities)	Investments in cleaner technologies (\$)	ISO 14001 certification (No. of facilities)
Increase gender diversity (% of work force)	Investments in community projects (\$)	Social performance evaluation system in place (No. of facilities)
Reduce emissions (% of reduction)	Safety training programs (hours)	Environmental accounting systems in place (No. of facilities)
Reduce emission (% of reduction)	Support programs for minority-owned business (% of volume of business)	Senior managers with social and environmental responsibilities (No. of senior managers)

**Table 3** shows how the structures and systems come out from strategies which should be formulated by the leaders, for examples to add social and environmental responsibilities as a requirement for

senior management positions and also including the formulation of strategies such as emissions reduction.

Harmful environmental consequences of product manufacturing and usage, and the potential prevention of the resulting pollution as well as the exploration of better ways to sustain current resources are generally researched by different groups of academics and practitioners, that take into consideration the entire life cycle of the product attempting to come out with useful measures and indicators [18]. There are sustainability performance monitors and measurement indicators used by companies. For example, Environment Management Systems (EMS), International Standards Organization (ISO) 14001 regulations and European Union Environmental Management and Auditing Scheme (EMAS) include monitoring and measuring mechanisms [27]. In order to apply sustainability concepts and practices in companies a major change or paradigm shift in vision, strategy and leadership roles should be adopted. It is important, thus, at this stage to elaborate briefly about organizational change and follow that with a detailed account on strategic planning and leaders in that context.

## **6. Conclusion**

In an organization, on both sub-cultural and individual levels, addressing change in context of strategic sustainability goals may provide further insight into how sustainability develops within the organization [28]. Sustainability-seeking organizations must make fundamental paradigm shifts away from their current linear, cradle-to-grave operational models toward a more integrative, eco-effective model. Researchers have also identified different methods to operationalize sustainability within organizations [28]. The studies in this field can measure environmental performances of organizations, for example the adoption of ISO 14001, regulations and their influence on performance, resource use and waste production. Thus, it is evident that sustainability implementation methods and standards are well defined and structured for the interested parties in adopting this concept [29].

To follow the right track in applying the sustainability triple line approach requires considering economic, social, and environmental policies in each stage of development and the integrated application of these policies. In other words, the countries which aim for sustainable development should follow all of its policies about population, distribution of income, education, law, industrialization, foreign trade, and public works in line with its environmental policies [5].

Companies especially SMEs that have not adopted a sustainability concept will most probably have a main goal of growing and sustaining profitability and depend solely on financial indicators in monitoring its performance, hence, it is obvious that practices of such companies will need a paradigm shift in order to adopt sustainability strategies and, in addition, reporting schemes that can capture the company's all-inclusive performance indicators become of great value for decision makers to better forecast its future performance based on that strategic shift [30, 31].

The approach proposed in this paper can help to choose the most stable tools for sustainability management for a specific business considered. Eventually, this will enhance effective and efficient sustainability management. It was illustrated that the balance scorecard provides a strong tool for an integrated sustainability management. It helps significantly to create a framework for measuring companies' strategies and performances, moreover it helps to set of tangible objectives for the sustainability concept coming out from the company strategy, to translate the company's strategy into a reality and

integrate the parallel approaches of environmental, social and economic management systems in companies' strategies.

## REFERENCES

- [1] Graham, R., and S. Bertels, "Achieving sustainable value: sustainability portfolio assessment" *Greener Management International*, Vol. 54, pp. 57, 2006.
- [2] Goldemberg, J., "Ethanol for a sustainable energy future. science" 315(5813), 2007,PP.808-810. 23 :York New ,NJ strategy" sustainable a for reporting Integrated :report enO",.P .M ,Krzus & .G .R ,Eccles .2010 ,Wiley
- [3] Andreas, F., E.S. Cooperman, B. Gifford, and G. Russell, (Eds.),"A simple path to sustainability: Green business strategies for small and medium-sized businesses" Santa Barbara, CA: ABC-Clio, 2011.
- [4] Stoughton, A. M., and J. Ludema, "The driving forces of sustainability," *Journal of Organizational Change Management*, Vol. 25, No. 4, pp. 501–517, 2017.
- [5] Calipinar, H., and D. Ulas, "Model Suggestion for SMEs Economic and Environmental Sustainable Development. Enterprise Development in SMEs and Entrepreneurial Firms," Business Science Reference, IGI Global, pp. 270–290, 2013.
- [6] de Leeuw, L., K. Bubna-Litic, and R. Genoff, "Implementing the Green Advantage™ in small and medium sized enterprises," 2000.
- [7] Yu, J., and J.N.B. Bell, "Building a sustainable business in China's small and medium-sized enterprises (SMEs)," *Journal of Environmental Assessment Policy and Management*, Vol. 9, No. 1, pp. 19–43, 2007.
- [8] Whittaker, R., R. Borland, C. Bullen, R. B. Lin, H. McRobbie, and A. Rodgers, "Mobile phone-based interventions for smoking cessation," *Cochrane Database Syst. Rev*, Vol. 4, 2009.
- [9] Howarth, R., and J. Fredericks, J, "Sustainable SME practice: A reflection on supply-chain environmental management intervention," *Management of Environmental Quality: An International Journal*, Vol. 23, No. 6, pp. 673–685, 2012.
- [10] Tilley, F, "The gap between the environmental attitudes and the environmental behaviour of small firms," *Business Strategy and the Environment*, Vol. 8, No. 4, pp. 238–248, 1999.
- [11] Ghobadian, A., H. Viney, J. Liu, and P. James, "Extending linear approaches to mapping corporate environmental behavior," *Business Strategy and the Environment*, Vol. 7, No. 1, pp. 13–23, 1998.
- [12] Anderson, T. L., L. E. Huggins, and M. Friedman, M, "The property rights path to sustainable development" Free to Choose, 2003.
- [13] Hardman, J, "Regenerative leadership: A model for transforming people and organizations for sustainability in business, education, and community," *Integral Leadership Review*, Vol. 10, No. 5, pp. 1–17, 2010.
- [14] Zubir, A. F. M., and N. F. Habidin, "The development of sustainable manufacturing practices and sustainable performance in Malaysian automotive industry," *Journal of Economics and Sustainable Development*, Vol. 3, No. 7, pp. 130–138, 2012.
- [15] Dutra, A., P. Everaert, S. Fust, and J. Millen, "Leadership styles that drive sustainability" Paper presented at the World Business Council for Sustainable Development, US Midwest Regional Meeting, Columbus, OH, April 2011.
- [16] Richard E. Boyatzis, "The competent manager: A model for effective performance" John Wiley & Sons,1982.
- [17] Epstein, M. J., and M. J. Roy, "Sustainability in action: Identifying and measuring the key performance drivers," *Long range planning*, Vol. 34, No. 5, pp. 585–604, 2001.
- [18] Rebitzer, G., T. Ekvall, R. Frischknecht, D. Hunkeler, G. Norris, T. Rydberg, and D. W. Pennington, "Life cycle assessment: Part 1: Framework, goal and scope definition, inventory analysis, and applications," *Environment International*, Vol. 30, No. 5, pp. 701–720, 2004.

- [19] Fiksel, J., J. McDaniel, J., and C. Mendenhall, "Measuring progress towards sustainability principles, process, and best practices" In Greening of Industry Network Conference Best Practice Proceedings, Vol. 19, pp. 2012, November 1999. <http://economics.com/images/Sustainability%20Measurement%20GIN.pdf>
- [20] Lorenzoni, I., A. Jordan, M. Hulme, R. Kerry Turner, and T. O'Riordan, "A co-evolutionary approach to climate change impact assessment: Part I. Integrating socio-economic and climate change scenarios," *Global Environmental Change*, Vol. 10, No. 1, pp. 57–68, 2000.
- [21] Morsing, M., and D. Oswald, "Sustainable leadership: Management control systems and organizational culture in Novo Nordisk A/S," *Corporate Governance*, Vol. 9, No. 1, pp. 83–99, 2009.
- [22] Figge, F., T. Hahn, S. Schaltegger, and M. Wagner, "The sustainability balanced scorecard—linking sustainability management to business strategy," *Business strategy and the Environment*, Vol. 11, No. 5, pp. 269–284, 2002.
- [23] Rohm, H., and D. Montgomery, "Link sustainability to corporate strategy using the balanced scorecard," 2011.
- [24] Caraiani, C., C. I. Lungu, C. Dascălu, M. V. Cimpoeru, and M. Dinu, "Social and environmental performance indicators: Dimensions of integrated reporting and benefits for responsible management and sustainability," *African Journal of Business Management*, Vol. 6, No. 14, pp. 4990–4997, 2012.
- [25] Crawford, D., and T. Scaletta, "The balanced scorecard and corporate social responsibility: Aligning values for profit," *Inside FMIJ*, Vol. 17, No. 3, pp. 39, 2006.
- [26] Zingales, F., and K. Hockerts, "Balanced scorecard and sustainability: examples from literature and practice." Insead, 2003.
- [27] Vavra, J., M. Bednarikova, and Z. Ehlova, "Assessment of sustainability aspects in a company," The 7th International Scientific Conference Business and Management 2012. Vilnius Gedimina Technical University, Lithuania, 2012.
- [28] Whittaker, R., R. Borland, C. Bullen, R. B. Lin, H. McRobbie, and A. Rodgers, "Mobile phone-based interventions for smoking cessation," *Cochrane Database Syst. Rev*, Vol. 4, 2009, 4.4
- [29] Bakel, J. C., D. A. Loorbach, and G. M. Whiteman, "Business strategies for transitions towards sustainable systems," (No. ERS-2007-094-ORG). ERIM Report Series Research in Management, 2007.
- [30] Hogan, R. T., G. J. Curphy, and J. Hogan, "What we know about leadership: Effectiveness and personality," *American Psychologist*, Vol. 49, No. 6, pp. 493–504, 1994.
- [31] Linnenluecke, M., and A. Griffiths, "Beyond adaptation: Resilience for business in light of climate change and weather extremes," *Business & Society*, Vol. 49, No. 3, pp. 477–511, 2011.