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Shaping the Future of Sustainable Shipping

Trends, Challenges & Solutions

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SHAPING THE FUTURE | Global Growth Opportunities Reviews

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SECTION 1

1.1 Transformation of company towards sustainability

Sustainability is becoming increasingly valuable throughout today's corporate world and can lead to potential future success for businesses. An increasing number of organizations are incorporating sustainability into their business strategy – aware of the importance of sustainability. In addition to helping to address global challenges such as the climate change, sustainability can lead to business success. When Bain & Company surveyed 297 global companies, 81% said sustainability is more important to their business today than it was five years ago, and 85% believe that it will be even more important in five years.[1]

For those forward-looking companies that embrace Sustainable Development Goals (SDGs) at the corporate level, they will have an impact on business success and growth over the coming decades – developing new market opportunities.

By integrating SDGs into the business strategy, there are business opportunities that make it a business priority.

In addition, according to a report by the Business & Sustainable Development Commission (January 2017) reports that achieving the UN Sustainable Development Goals [2] will generate $12 trillion in business savings and revenues across four sectors which are energy, cities, food and agriculture and health and well-being by 2030 and estimates the creation of 380 million new jobs. [3]

1. Transforming Business for a Sustainable Economy. (2018)

2. SDGs: an opportunity for business. (2017)

3. PwC . (2015), Make it your business: Engaging with the Sustainable Development Goals.

Furthermore, Global research by PwC since 2015, has shown that 78% of consumers are more likely to purchase goods and services from businesses that have signed up to the SDGs (Sustainable Development Goals) [4]. Responding to a PwC survey, 90% of citizens think that it is important for businesses to sign up to the SDGs (59% think it is "very important"). Consumers pay particular attention to the way in which companies take a position on social and environmental issues.

4. Organisation for Economic Co-operation and Development (OECD). (2017), What People Know and Think About the Sustainable Development Goals Selected Findings from Public Opinion Surveys Compiled by the OECD Development Communication Network (DevCom).

Figure 1.1 | 17 Sustainable Development Goals. United Nations. (2020). Sustainable Development Goals-Knowledge Platform, [5]

5. United Nations. (2020). Sustainable Development Goals-Knowledge Platform.

Sustainability will become as big and disruptive in every sector. Sustainable Development Goals (SDGs) are a revolutionary and transformative business agenda.

As competition in different business sectors increases, businesses need to implement new and efficient management methods and tools that allow them to acquire and maintain competitive advantages for as long as possible and help them to identify, apply and analyse their strategies.

Today, the majority of companies are affected by the SDGs, as shown in figure 1.2.

Figure 1.2 | Business attitudes towards SDGs. PwC. (2018). From promise to reality: Does business really care about the SDGs? And what needs to happen to turn words into action, p. 5. [6]

6. PwC. (2018). From promise to reality: Does business really care about the SDGs? And what needs to happen to turn words into action, p. 5.

Companies are using advanced technologies to bring about a change of pace within the industry, and have always used technology to improve productivity. Executives, however, must seek and take advantage of the opportunities to use advanced technology to step up their efforts towards sustainability while achieving competitive advantages. In general, firms that successfully pursue competitive market opportunities are based on digital technologies (see Section 5).

Sustainability is an ongoing process; The integration of sustainability into the business strategy can be a key factor for growth, but it can also be a challenge requiring a systematic approach.

Decision-makers must have the resources to assess the current state of affairs of the company and companies should first organize their processes in order to be consistent where sustainability initiatives can be implemented. Companies need to navigate these pressures, to include sustainability in their business strategy in order to benefit from the transformative power of technology and make "sustainability" a key factor for success.

Figure 1.3 | Companies need to reinvent their core business. Bain and Company. (2018). Transforming Business for a Sustainable Economy. [7]

7. Bain and Company. (2018). Transforming Business for a Sustainable Economy.

In this sense, there are several types of sustainability strategies. The variety of tools and principles shows the company's many options for incorporating sustainability into its business activities. It is therefore important to plan the field of action by identifying where to start implementing sustainability, what sustainability activities to involve and where these actions have the greatest impact.

1.2 Sustainability and Performance Management Systems

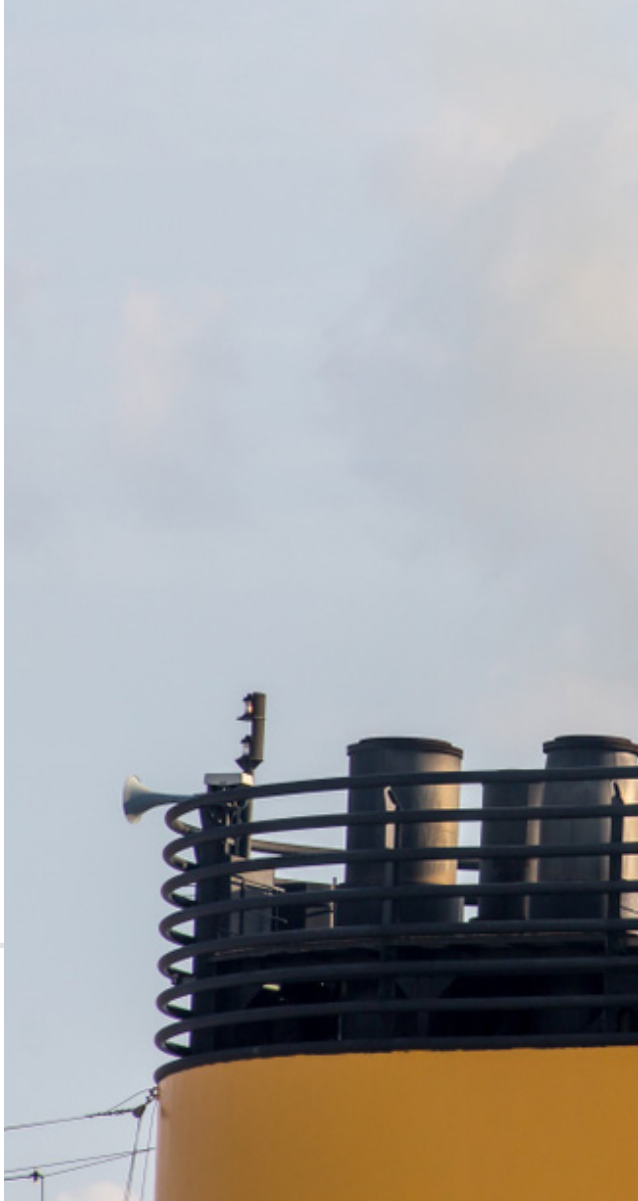
Maximizing the operating efficiency is considerably more complex when a company is committed to sustainability goals. The incorporation of sustainability indicators into day-to-day decision-making is a key element of Sustainability Performance Management Systems (SPMS). SPMS is defined as the process of identifying social, environmental, and economic drivers that influence the success of an organization and measuring progress against those drivers, SPMS has been regarded as the best way to capture the complexity of the triple bottom line framework. In terms of business model and value-added processes and products, a wide range of management tools have been developed to implement and measure corporate sustainability. [8]

Tools for organizing sustainability assessment focus on monitoring and implementing sustainability approaches to the operationalization. Sustainability should be disseminated throughout the enterprise in all business processes. Sustainability Performance is critical to the success of sustainability practices by incorporating sustainability into day-to-day decision-making and transparency processes, including sustainability reporting.

8. Nigri G. and Baldo Del M. (2018). Sustainability Reporting and Performance Measurement Systems: How do Small- and Medium Sized Benefit Corporations Manage Integration? p. 1

The growing strategic importance of social, environmental and economic concerns, as well as related performance indicators, has stimulated interest in measuring and managing corporate sustainability performance systems. The basic idea of sustainability maturity models, i.e. the definition of phases or levels of development, can also be used to objectively assess the sustainability status of a business and thus provide a reasonable tool for companies to monitor their sustainability capabilities.

The aim of this research is to develop an exploratory analysis of the concept of sustainability using an economic approach and to explore the potential for the use of maturity models as an assessment tool for organizational performance management systems. There are various models in corporate sustainability that have been proposed which the Sustainability Balanced Scorecard is the most prominent example of sustainability measurement systems.



1.2.1 SUSTAINABILITY BALANCED SCORECARD (SBSC)

The Sustainability Balanced Scorecard (SBSC) is an appropriate and effective tool to address sustainability issues, which has seen great interest from both academics and practitioners. The Sustainability Balanced Scorecard is based on the Balanced Scorecard (BSC) developed by Kaplan and Norton (1992) and is a strategic management tool for both the operationalization and evaluation of the objectives of the company and its use as an integrated management system.

Since many environmental and social concerns are non-financial and often have a long-term impact on an entity in particular, researchers (e.g. Epstein) and practitioners (e.g. Rohm and Montgomery) have identified the BSC as an appropriate tool for addressing sustainability issues. The SBSC differs from the BSC in its architecture by explicitly defining goals and performance indicators relating to sustainability. The SBSC recognizes sustainability targets and performance measures and translates sustainability into action.

It is a performance assessment and management system designed to integrate financial and non-financial metrics in the short and long term.

This tool posits that It is important for companies to contribute to sustainable development while at the same time enhancing corporate performance in all three dimensions of sustainability – economic, environmental and social. More specifically, the SBSC merges these three dimensions into a single integrated management system rather than, for example, requiring separate three management systems such as environmental, social and financial.

There is a lot of academic discussion about the SBSC architecture and how it can be structured to link the dimensions of efficiency, the strategic objectives and the linkages between these elements. The scientific debate on SBSC architecture focuses on at least two concerns: first, whether additional performance perspectives should be used to address sustainability goals or whether sustainability concerns should be merged into established performance perspectives.

It should be emphasized that knowledge has been a huge difference for companies so they, with competent performance management systems, can make a great deal of progress. Information management and one of their actions, more specifically corporate education, are one of the fastest-growing concerns of today's corporate world for their strategic importance for gaining competitive advantage.

Performance management systems such as the SBSC can be studied with regard to their design, implementation, use and evolution [9]. Its implementation has been very influential in some organizations, turning it from a management tool into an integrated strategic management system. According to Jakobsen et al. (2011), it is possible to examine the design of strategic performance assessment and management systems at the level of both general performance management systems with four performance perspectives as suggested by Kaplan and Norton in 1996. The following figure illustrates Strategy map of the SBSC in a sample company (the BSC of the sample company).

The SBSC is a generic strategic performance management and measurement tool used at different organizational levels (e.g. business unit) within a for-profit organization with an architecture that explicitly incorporates sustainability-related strategic objectives visualized in strategy maps. Using the SBSC helps businesses develop and evaluate sustainability plans. SBSC is one of the most important instruments that can be used to assess sustainability efficiency, since it contains both financial and non-financial indicators.

However, the relationship of cause and effect between environmental and social measures and other interventions can help to understand and assess the impact of environmental and social measures on the four points of view of the Balanced Scorecard, in particular on the financial results of the Company.

SBSC is a common strategic performance management and evaluation tool used at different organizational levels (e.g. business unit) within profit organizations with an architecture that specifically integrates sustainability-related strategic objectives with strategy maps.

9. Hansen, G.E. and Schaltegger, S. (2014), The Sustainability Balanced Scorecard: A Systematic Review of Architectures, p. 196.

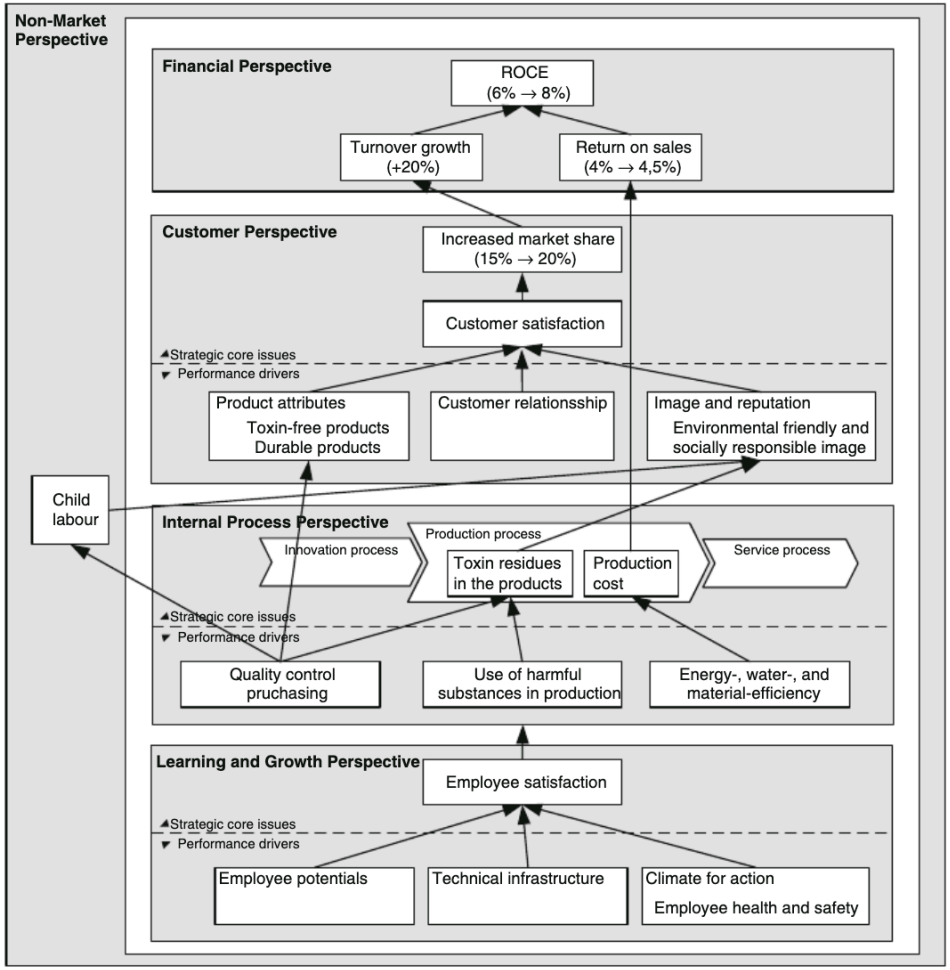
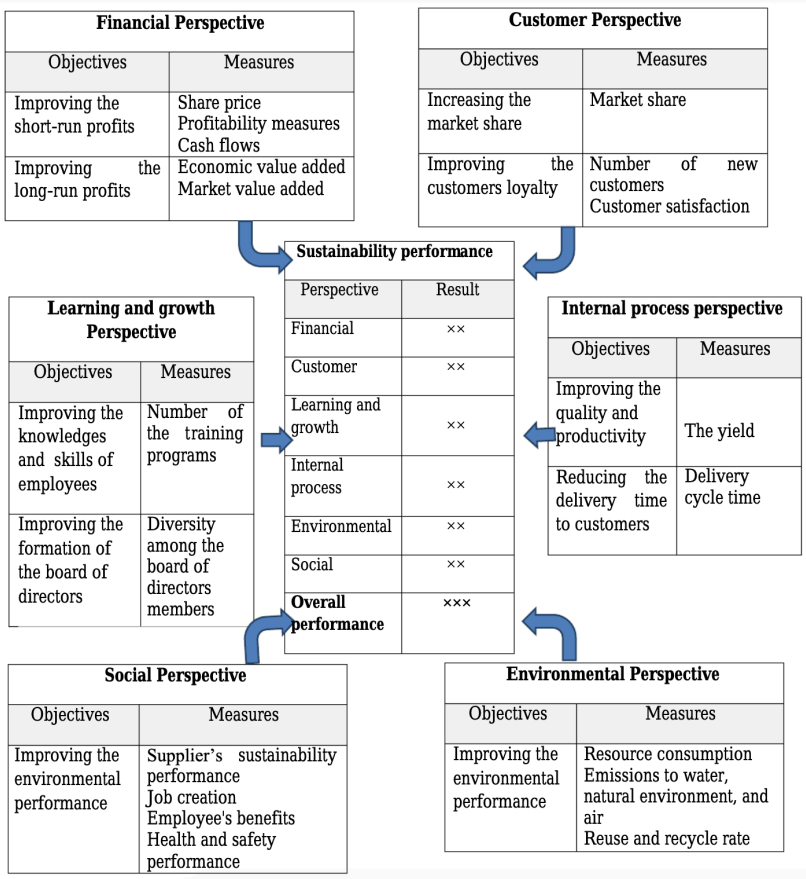


Figure 1.4 | Strategy map of the SBSC. Hansen, G.E. and Schaltegger, S. (2014), The Sustainability Balanced Scorecard: A Systematic Review of Architectures, p. 196. [10]

Figure 1.4 shows the proposed model of SBSC which contains six perspectives: Financial, customer, Learning and growth, internal process, social and environmental perspective. Each SBSC perspective includes several indicators that can be used to assess the performance of the perspective.

10. Hansen, G.E. and Schaltegger, S. (2014), The Sustainability Balanced Scorecard: A Systematic Review of Architectures, p. 196.



Financial Perspective

Objectives	Measures
Improving the short-run profits	Share price Profitability measures Cash flows
Improving the long-run profits	Economic value added Market value added

Customer Perspective

Objectives	Measures
Increasing the market share	Market share
Improving the customers loyalty	Number of new customers Customer satisfaction

Sustainability performance

Perspective	Result
Financial	××
Customer	××
Learning and growth	××
Internal process	××
Environmental	××
Social	××
Overall performance	×××

Learning and growth Perspective

Objectives	Measures
Improving the knowledges and skills of employees	Number of the training programs
Improving the formation of the board of directors	Diversity among the board of directors members

Internal process perspective

Objectives	Measures
Improving the quality and productivity	The yield
Reducing the delivery time to customers	Delivery cycle time

Social Perspective

Objectives	Measures
Improving the environmental performance	Supplier's sustainability performance Job creation Employee's benefits Health and safety performance

Environmental Perspective

Objectives	Measures
Improving the environmental performance	Resource consumption Emissions to water, natural environment, and air Reuse and recycle rate

Figure 1.5 | SBSC comprising six perspectives. Abdelrazek, A.F. (2019). Sustainability Balanced Scorecard: A Comprehensive tool to measure sustainability performance, International Journal of social Science and economic Research, Volume:04, Issue:02 "February 2019", p. 956. [11]

The combination of the results of these indicators determines the overall performance perspective and each organization has its own circumstances so that it must choose the best indicators to achieve its objectives. As a result, the sustainability success of the company exceeds the results of all six perspectives.

11. Hansen G.E. & Schaltegger, 2014, The Sustainability Balanced Scorecard: A Systematic Review of Architectures, p. 197.

using conventional engines as power generators. Photovoltaic cells also generate electricity as a hybrid propulsion system. Methanol is becoming a little more popular as an alternative fuel. It is widely available because it is a feed material for petrochemicals. It is also used in a limited way as a motor fuel ('wood alcohol'). Methanol is considered to be of interest to bunker fuel only if it is available at a very low cost. There are a few ferries on the Scandinavian / Baltic lines that operate on methanol.

While LNG is only top ranked in terms of fuel prices, it is ranked the highest overall by the entire combined group of shipowners, fuel suppliers and engine manufacturers. This is because most shipping-related stakeholders rate fuel prices and the economy as a whole are very high. Another example, is the renewable hydrogen is considered to have a strong impact on future regulation, efficient supply of fuel and all environmental impacts. However, the highest fuel, investment and operating costs are expected.

The relative importance of each parameter for the final outcome varies to some degree for the various alternative marine fuel choices. For most parameters, the disparity in value for the different fuels was small. However, in all stakeholder situations, the price of fuel is found to be more relevant to fossil fuel-based options than to renewable-based. A different set of criteria could lead to a different outcome.

In the selection of marine fuels, stakeholders consider the overall economic criteria, in particular fuel prices, to be more important than technical, environmental and social factors. Furthermore, there are different pathways of fuel production for a given fuel that yield different performance

parameters, and in some cases there may be a lack of data that adds to the complexity of predicting or estimating potential fuel characteristics. However, the Community of Government Authorities or International Maritime Organization (IMO) respects environmental standards, in particular the highest impact on GHG. Other important aspects include a stable supply of fuel, the possibility of complying with current and upcoming regulations, and safety.

The preferences of the different stakeholders and stakeholder groups are determined by the different weights assigned to the different criteria, which influence the fuel rankings and therefore the choice of options. In this context, the performance and importance of the criteria could also change due, for example, to new policies that could potentially improve the conditions for one fuel and specific policy designs could be implemented effectively. For example, policies should influence fuel price relationships.

There are other green technologies – primarily those that reduce air pollution (SOx and NOx) and those that protect against the introduction of alien species into the ballast water of ships that have no commercial advantage and are motivated to prevent non-compliance – comply with the legislation. This result also illustrates current developments in the shipping industry, including the introduction of LNG along with ships using HFOs and scrubbers.

ECA Regulations stipulate that NOx and SOx emissions should be reduced but do not specify how this should be done. There are therefore many options and alternative solutions for meeting stricter pollution limits. The main factors leading to the development of alternative fuels can be divided into two broad categories: a. Regulatory and environmental issues (b). Supplying fossil fuels, prices and security of energy.

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