

Correlation of the Concepts of Proactiveness and Due Diligence to Achieve Sustainability in the Maritime Sector

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Abstract: The present status of our planet, with global warming and unprecedented changes in the climate, has led the shipping industry to incorporate the concept of sustainability. Sustainability in the shipping industry is a holistic management concept for sustainable development, applied to the shipping sector, integrating environmental and social responsibility. The final aim of sustainability in shipping is to establish an emission-free industry while executing more than 95% of global trade. To achieve this, specific methods and procedures are being developed. In this paper, the correlation between the concepts of proactiveness and due diligence will be assessed to explore and evaluate if or should there be a strong link between those concepts to achieve sustainability. During the paper's analysis, it is evident that there is a continuous and impactful correlation between those three concepts. Therefore, the methods and systems provided can effectively lead the shipping sector into a sustainable and emission-free future.

Key words: Sustainability, proactiveness, compliance, due diligence, duty of care, 5 Ps, B2B

1. Introduction

Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs. In addition to natural resources, we also need social and economic resources. Sustainability is not just environmentalism. Embedded in most definitions of sustainability, we also find concerns for social equity and economic development [1].

While sustainability is a relatively new idea, the movement has roots in social justice, conservationism, internationalism and other past movements with rich histories. By the end of the twentieth century, many of these ideas had come together to call for “sustainable development”. For example, in 1983, the United Nations tapped former Norwegian prime minister Gro Harlem Brundtland to run the new World Commission on Environment and Development [2].

After decades of effort to raise living standards

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through industrialisation, many countries were still dealing with extreme poverty. Economic development at the cost of ecological health and social equity did not lead to long-lasting prosperity. It was clear that the world needed to find a way to harmonise ecology with prosperity. After four years, the “Brundtland Commission” released its final report—*Our Common Future*. It famously defines sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The Commission successfully unified environmentalism with social and economic concerns on the world's development agenda. Sustainability is a holistic approach that considers ecological, social and economic dimensions, recognising that all must be considered together to find lasting prosperity [3].

The concept of sustainability is structured around three pillars:

(A) Environmental Sustainability: Ecological integrity is maintained, and all of the earth's environmental systems are kept in balance. At the

same time, natural resources within them are consumed by humans at a rate where they can replenish themselves.

(B) Economic Sustainability: Human communities across the globe can maintain their independence and have access to the resources they require, financial and other, to meet their needs. Economic systems are intact, and activities are available to everyone, such as secure sources of livelihood.

(C) Social Sustainability: Universal human rights and necessities are attainable by all people who have access to enough resources to keep their families and communities healthy and secure. Healthy communities have just leaders who ensure respect for personal, labour, and cultural rights, and all people are protected from discrimination [4].

2. The Concept of Sustainability in the Shipping Industry

The balance between reaching a solid global position and protecting the environment is part of shipowners' business operations. By far the largest share of goods is transported oversea. The interaction between "smart" infrastructure and a forward-looking shipping sector contributes to more sustainable use of ports, waterways, and oceans [5].

From a regulatory perspective, within the framework of the European Union, a dedicated forum for sustainable shipping was created with the "Commission Decision of 24 September 2013 Setting Up an Expert Group on the Sustainability of Maritime Transport" [6].

Sustainable shipping is a holistic management concept for sustainable development, applied to the shipping sector, integrating environmental and social responsibility. Sustainability includes three main pillars: the environment, society and the economy, and sustainable shipping development results from strengthening these three pillars [7].

The IMO's (International Maritime Organization)

climate agreement of 13 April 2018 illustrates the need for the shipping sector to significantly mitigate its impact on the climate and lead by example. The shipping sector agreed to an absolute reduction of CO₂ emissions of at least 50% in 2050 compared to 2008. It also decided to push greenhouse gas emissions to zero as fast as possible [8].

Seagoing vessels are operational for decades and decommissioned at the end of their lives. Approximately 95% of materials are recycled in this process. The shipping sector must comply with international regulations, including the ship recycling industry and the safe and sustainable method of decommissioning vessels. Speeding up the ratification of the Hong Kong treaty will contribute significantly to a global level playing field and will enhance the establishment of higher standards [9].

To ensure that the progress towards sustainability is continued each year, three pillars of success have been identified. The starting points are that (a) every new vessel is much cleaner and more energy-efficient than its predecessor, (b) existing vessels have regular refits and (c) regulation facilitates greater sustainability to reach the goal of emissions-free sailing. In addition, a regulatory level playing field is critical for internationally operating shipowners. Finally, training of crews and awareness of shipowners is crucial to reach these three pillars [10].

3. Factors of Sustainability

Different factors influence the development of sustainability in shipping, from regulatory to socio-economic factors, market-related aspects and human factors, all of which contribute to developing the abovementioned three pillars. The most prominent factors are (i) the utilization of energy-efficient vessels, (ii) the implementation of technologies for building emission-free vessels and (iii) evaluation of alternatives regarding fuels, propulsion, and materials [11].

3.1 Adjusted Sailing by Energy-Efficient Usage of Seagoing Vessels

Shipping is the most sustainable way of transporting goods. However, how we use vessels can be more energy efficient. Training and guidance of crew members can positively change on-board behaviour and contribute to economic and environmental gains. One of the examples is slow steaming. Optimisation of the entire value chain from port to port is needed so ships can sail “just in time”. Where water and quay meet optimal processes creates a more effective flow and fewer emissions. The maritime sector flourishes only when there are enough strong links present. Those links include shipowners, shipbuilders, suppliers, knowledge institutes, ports, shippers and financiers. New ship designs are essential as well for all kinds of vessels [12].

3.2 Adapted Vessels Enhance Reduced Emissions and Therefore Have a Smaller Impact on the Environment

Seagoing vessels age well. That can be seen as sustainable, but it also means that existing vessels are less flexible to sustainable innovations. For example, significant refits can only be carried out in a dry dock. In addition to major refits, minor adjustments also contribute to reduced emissions. To this end, data collection is essential to understand what changes are effective. The majority of shipping companies pro-actively seek cooperation with ports, shippers and governments to reward the more sustainable vessels and stimulate the use of those ships. This also includes alternative business models to reshape the maritime industry [13].

Dialogue between shipowners, governments, and financiers about ownership, beneficial rights, and alternative materials is constructive. Shipowners are open to exploring the options of recycling materials by integrating the circular economy philosophy when building new vessels and using alternative materials when building new ships [14].

3.3 Alternatives: Fuels, Propulsion, and Materials

Knowledge institutes like TNO and MARIN show the path to development of alternative options for shipowners. They execute their research in close cooperation with fuel industry parties and maritime suppliers. Research into the possibilities of different propulsion technologies and alternative fuels is performed to see how emissions of greenhouse gases can be reduced. Furthermore, pilot projects are set up together with shipowners. As a result, new propulsion systems and alternative fuels create a clean and sustainable shipping sector that can reach its 2050 targets [15].

An infrastructure that facilitates new energy carriers at key places is essential. To make sure that new vessels adapt quickly to new technology, new (and, as much as possible, recycled) materials and new designs are introduced in cooperation with shipowners. As many different stakeholders are involved in the process, another critical factor in supporting sustainable shipping is understanding the concerns, needs, and expectations of all parties. Constructive dialogues, collaborations, synergies, and joint R&D are some of the key instruments for the development of sustainable shipping [16].

4. Proactiveness

4.1 Assessing the Term

Proactivity or proactive behaviour refers to self-initiated behaviour that endeavours to solve a problem before it has occurred. Proactive behaviour involves acting in advance of a future situation rather than reacting. It refers to taking control of a situation and making early changes rather than adjusting to it or waiting for something to happen [17].

On the other hand, as a behaviour pattern, reactivity is a habitual mode of taking one’s lead from the situation or a participant rather than taking the initiative to solve the problem on your terms. In moderation, this can be an adequate expression of

social risk aversion. However, taken to excess, reactivity is a form of disempowerment [18].

4.2 The 5 P's of Proactiveness

The concept of proactiveness is presently considered a key indicator for assessing the efficiency of a management process. Predicting issues or flaws in a system is considered “*ipso facto*” the first step into minimising the severity or even avoiding such an incident. Therefore, five steps have been developed to effectively introduce proactive methods into a shipping company’s system to establish proactiveness. The five steps are (i) prediction, (ii) prevention, (iii) planning, (iv) participation and (v) performance which are depicted in the Fig. 1 below [19].

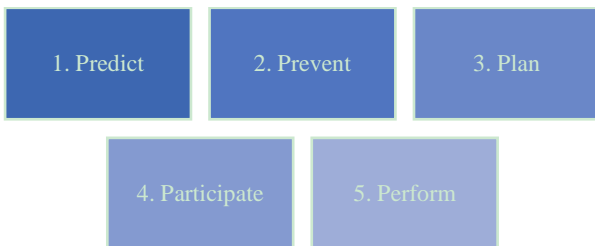


Fig. 1 The 5 P's of proactiveness.

(A) Predict: To be proactive, you must first develop foresight. Proactive people are rarely caught by surprise. They learn to anticipate problems and events. To predict, you first have to understand how to correlate and look for patterns; recognise the regular routines, daily practices and natural cycles. In the same manner, we should not, first of all, be complacent. The first step of prediction is the utilisation of imagination when anticipating future outcomes. Another rule is that you should never expect the past to be an accurate predictor for the future; Prediction in a business usually leads to creating multiple scenarios of what or how an internal process or an external factor may malfunction or affect the operational processes. In addition, prediction is usually envisaged by utilising business methods and systems such as SWOT (strengths, weaknesses, opportunities, and threats) and PESTLE

analysis (analysis assessing Political, Economic, Social, Technological, Environmental and Legal factors) to explore, depict, prioritise and present all possibilities in an organised manner [20].

(B) Prevent: Proactive people foresee potential obstacles and exert their power to find ways to overcome them before those obstacles turn into concrete roadblocks. They prevent problems that others would look back on in hindsight and claim are unavoidable. In a business environment, the utilisation of preventive measures leads to the confrontation, avoidance, or control of system malfunctions and increases system performance and efficiency [21].

(C) Plan: Proactive people plan for the future. In the concept of business, a business plan aims to effectively predict, counter or even take advantage of future incidents and anticipate long-term consequences. A vital principle for efficient planning is never to make decisions in a vacuum; every decision is linked to a chain of events leading to one conclusion. For effective planning, a business must be aware of the source of an incident, the reasoning, the aims, the possible outcomes and the possible impact [22].

(D) Participate: Proactive people are not idle observers; they are active participants. To be proactive, you must get involved. From a company perspective, a business should take the initiative and be a part of the solution. In the last decades, where the concepts of sustainability and corporate social responsibility have emerged, all companies have recognised that they are only a piece of the whole and influence—and are influenced by—the actions of other companies. Effective participation can only be implemented by engagement, exerting influence and contribution (of all sorts) to counter an issue or develop a solution [23].

(E) Perform: Being proactive means taking timely, effective action. Performance is closely linked with decisiveness and activation and is the opposite of reactivity. Company performance can be effectively enhanced by taking ownership of action and being

accountable for an issue. At the same time, being proactive means you have taken careful and thoughtful steps to choose the appropriate path; by performing, you should first predict, plan and participate in activities while implementing preventive measures. Performance should always be coupled with utilising all the previous stages; else, an action will lead to aggressiveness or impulsiveness, thus not achieving the desired outcomes of proactiveness [20].

4.3 The Concept of Proactiveness in a Business Environment

According to Lumpkin & Dess [24], proactive entrepreneurial activity refers to the firms' timely response to market needs or demands and generating market opportunities. Should a formidable proactive strategy be utilised by the shipping companies, it may allow them to anticipate changes in the business environment or even exert influence on the business environment to their advantage [25]. Similarly, Blesa & Ripollés [26] opined that strong proactive thinking is most likely to provide shipping companies with diverse capabilities to predict the needs of charterers and the reactions of competitors in the shipping market. Finally, Uddin et al. [27] revealed that outstanding business performance in the marketplace largely depends on the firms' capabilities to address the issues of uncertainties by utilising proactive plans to counter any possible threats or issues.

Even though there is no numerical evidence upon the impact of proactiveness on the shipping industry, Anderson et al. [28] posit that firms with high responsive ability consider proactiveness a core input. Such firms remain committed to taking first mover advantage by engaging in forward-looking and opportunity-seeking activities. Thus, they are likely to generate robust knowledge about market trends and predict market cycles. In addition, it improves firms' capabilities to align or integrate the right kind of resources to deliver value that best suits such market preferences. Proactive firms also focus on developing

capabilities that influence policymakers and shape the market to their advantage in market share or position. Further, proactive activities enable firms to keep abreast with changes in technology and regularly strive to create and integrate resources to match technology advancement [29]. This further confirms the views of Lumpkin & Dess [30] that if an enterprise maintains high proactive thoughts, such an enterprise can predict the desires of emerging markets and pull resources together to satisfy the demands better than its competitors.

From the foregoing, it can be argued that proactiveness plays a pivotal role in capability building. It involves displaying opportunities seeking behaviour to satisfy immediate market wants and the inculcation of forward-looking thoughts that can forecast future market needs accurately [24].

For instance, in typical settings like Nigeria, the demand for cool drinks is mostly high between February and June (i.e., hot season/weather). Therefore, given the trend of previous orders as well as the prevailing market situation as the season approaches, a proactive manufacturing SME (small and medium-sized enterprises) may be able to predict with some level of accuracy the demand for drinks and then make efforts to integrate and reconfigure resources to flood the market not just with drinks but chilled drinks better than its competitors. In doing so, this may be aligned to the guiding principles of the dynamic capability theory of the firm, which postulates that firm's superior performance in a dynamic business environment is the outcome of integrating, reconfiguring, and building resources, strategies, and capabilities [31].

5. Due Diligence/Compliance

Vessel compliance and due diligence are vital for any shipping operation. Ultimately, a solid risk-based due diligence plan can help ensure that a shipping company "knows its vessels" and feels confident about having a relationship with them without risking

regulatory scrutiny. Furthermore, a shipping organisation must respond swiftly and efficiently should an issue arise. While the number of vessels and fleets subject to international sanctions is relatively small and easy to identify, many more may fall outside an organisation's risk appetite, possibly preventing organisations from doing business with specific fleets or vessels. These risks can be heightened when a vessel operates in remote or unfamiliar geography or is registered in one of the many jurisdictions where registers are non-transparent and poorly maintained. Given the multifaceted and insular nature of the maritime industry, standard due diligence on vessels and their related parties may not reveal ties to governments, entities, and individuals that are sanctioned [32].

Due diligence in shipping is also usually related to environmental regulations. It is essential because local authorities can exercise their right to penalise the company if it violates any major rule, including shutting it down operationally. Hence, this makes environmental audits for each property owned or leased by the company one of the critical types of due diligence. Therefore, the following should be reviewed carefully: (i) List of environmental permits and licenses, (ii) copies of all correspondence and notices from the state and local regulatory agencies, (iii) verification that the company's disposal methods are in sync with current regulations and guidelines; (iv) checking to see whether there are any contingent environmental liabilities or continuing indemnification obligations [33].

A typical B2B (Business to Business) due

diligence process in shipping includes (i) analysis of a project's purpose, (ii) financial pre-analysis of a business case, (iii) check of documentation, (iv) analysis of a business case and plans, (v) risk analysis, (vi) creating a final offer and continued monitoring. The shipping industry, being a business, follows the same path, subject to the intricacies of the shipping market cycles and fluctuations. An overview of the B2B due diligence process can be seen in Fig. 2 below [34].

Legally, the concept of due diligence is often called as duty of care. Duty of care is "the legal obligation of an agent to act in a manner befitting of the goals of the principal including the duty to act on behalf of the principal, rather than in the self interest of the salesperson or broker" [35].

The duty of care is the legal principle that requires parties of a business or agency to make decisions on behalf of clients in the best manner possible. The standard to determine whether a party has made the best decision on behalf of their client is to determine whether their advice or act would be reasonable for most parties in their position. While every business or agency may offer different advice, it is expected that they use due diligence and effort to attain the goals of the party using their services [36].

In addition to viewing the decisions of the party through the lens of what a reasonable party would do, courts determine whether the advisor put in a good faith effort to advise their client in the manner they did. The slightest breach in fiduciary duty could lead to a valid lawsuit imposed against the business or agency who hired them [37].

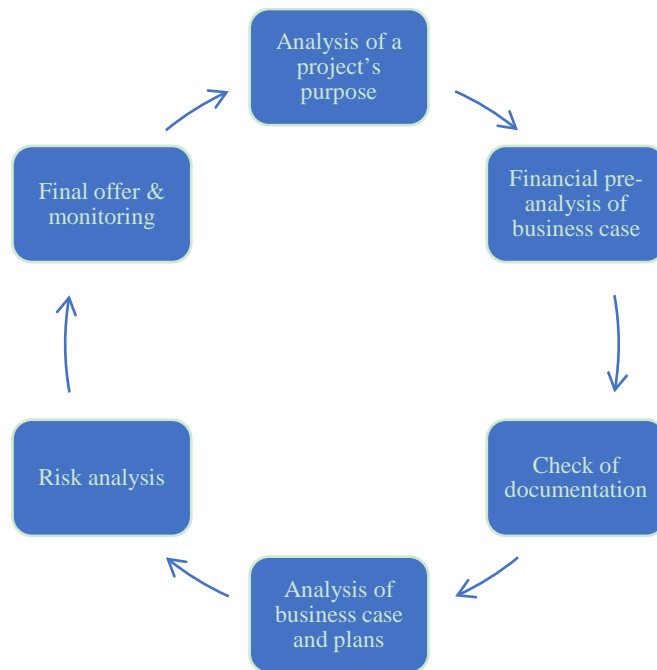


Fig. 2 B2B due diligence process.

6. Relations of the Terms

Regarding the issue of sustainability, reliable long-term government policies supported by robust and risk-based monitoring in ports and at sea offer shipowners the confidence they need to embrace “green innovations”. New business models form the base for investments and cooperation in the maritime sector, leading to a green fleet. Dedicated financial instruments such as international subsidies speed up the introduction of new technologies. To set the pace towards a zero-emissions vessel, investment in innovation, pilot projects and cooperation with all the stakeholders is crucial [8].

While sustainability is the goal, due diligence and proactiveness can be characterised as the means to achieve it. The first step towards the establishment of a sustainable shipping sector is the enactment and enforcement of regulatory frameworks relevant to sustainability. Due diligence, usually characterised as a duty of care, is the second step. It is examined whether and to what extent the laws on sustainable development are being complied with. Various methods, systems and processes have been utilised, such as creating

codes and documentation upon the processes, initiation of systems such as the ISM (International Safety Management) Code and the creation of company positions, such as the compliance managers. Consecutively, it is evidenced that the most successful method is proactiveness to comply with and implement due diligence processes effectively. Proactiveness is also the final step. Besides enhancing compliance processes, anticipating manfunctions and creating response plans also helps establish the rules and regulations regarding sustainability [38].

Specifically, the steps to the creation of regulation are (i) to participate in discussion with all the stakeholders to set the aims, goals, and the scope of the regulation, (ii) to plan the relevant processes of control and enforcement, (iii) to prevent any possible conflict of laws or adverse outcomes, (iv) predict the possible impacts and malfunctions and (v) perform-enact and test in practice its efficiency and effectiveness. It is evident that presently all legislation is created following the steps of proactiveness [19].

While the abovementioned correlation is evident, it should also be stated that the process is continuous. The regulations are created, their efficiency is tested

Correlation of the Concepts of Proactiveness and Due Diligence to Achieve Sustainability in the Maritime Sector

through due diligence processes and methods, any malfunctions are being processed, and response actions are being planned and incorporated into the systems through additions to relevant legislation, codes and procedures [32]. In figure 3 below the correlation of those concepts is depicted.

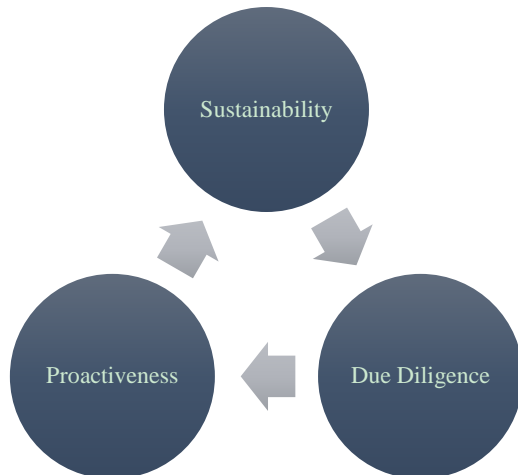


Fig. 3 The correlation of the concepts of sustainability and due diligence to achieve sustainability.

An example is the ISM Code correlation and TMSA (Tanker Management and Self Assessment). While ISM refers to all ships, TMSA is specified only to tanker management. During the utilisation of TMSA, malfunctions are evidenced during due diligence, response plans are being executed, and corrective actions are being incorporated into the next version of TMSA. The continuity of the process increases the system's effectiveness while incorporating occasional and spontaneous factors and increases the chances of effectively locating and countering emerging threats [33].

Thus, to achieve absolute sustainability, (i) location of all possible malfunctions during the implementation, and enforcement of legislation is vital (ii) combined with proactive creation of plans and methods to avoid those occurrences in the future and (iii) incorporation of those countermeasures into the relevant legislation or systems [39].

An example of the correlation of the abovementioned concepts is evidenced in Haapasaari's et al. [20] research executing a holistic

approach regarding the maritime safety of the Gulf of Finland, which is evidenced in Fig. 4.

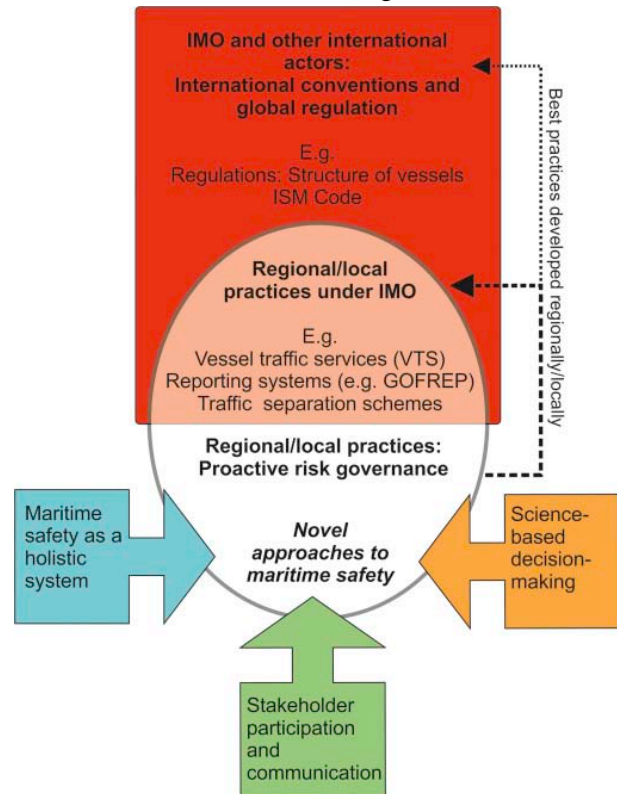


Fig. 4 Best practices under IMO.

7. Conclusion

Sustainability has become the main objective of the shipping industry and a dominant factor in aspects of shipping. Renewable energy sources like wind and solar energy are destined to match the energy needs of the shipping sector soon. Renewable shore power will replace diesel generators in port, and emissions-free shipping is the ultimate goal. Further optimisation of existing resources in the maritime logistics chain is necessary. This concerns, among other things, the energy-efficient use of those seagoing vessels lacking technological adjustments. This requires a change in thinking of all parties in the logistics chain, such as ports, shippers and terminals.

Refitting existing vessels and pushing for sustainable technological developments when building new vessels is also a step towards sustainable shipping. Innovative ship designs contribute to this goal. In

addition, shipowners are getting ready for alternative fuels and climate-neutral propulsion to reach the ultimate target of “zero emissions shipping”. This calls for the exploration and testing of new fuels that are barely used.

All these steps towards sustainable emission-free shipping are combined with the concepts of due diligence and proactiveness. For sustainable shipping, proactive measures and planning and effective regulations have to be implemented and enforced. Malfunctions will be located through compliance processes, and corrective actions will be initiated to improve the established systems and processes.

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