

The Prospects of Sustainable Approach of Logistics Management in the Globalization Era

(i) *R.SWATHI,

SAVEETHA SCHOOL OF MANAGEMENT, SAVEETHA UNIVERSITY.

(ii) * GOMATHI SHANKAR,

ASSISTANT PROFESSOR,

SAVEETHA SCHOOL OF MANAGEMENT, SAVEETHA UNIVERSITY.

ABSTRACT:

Based on the discussion of the development course and the present situation of logistic industry, the concept of the sustainable approach in logistics management will be put forward in this paper. Logistics is a key driver of economic growth, wealth creation and jobs. The paper attempts to say that the Logistics is the integrated management of all the activities required to move goods throughout the supply chain. The logistical activities comprise of cargo transport, storage, inventory management, resources handling and all the related information processing. This article is analytical way of minimizing these externalities and achieving a more sustainable balance between economic, environmental and social objectives globally.

Keywords: Logistics Management; Sustainable Approach; Globalization; Inventory Management.

1. INTRODUCTION

In the current process driven organization, the logistics has become an essential part of the process. In multifaceted societies, sustainability relates to the actions of persons or stakeholder groups in dynamic political, social or ecological systems. As a result, there are tremendous states in these systems, accompanied by strong system deterioration and high risk. Harpreet KaurSurya (2017), state that “In a supply chain, carbon emissions are seen right away from the procurement of raw material till the delivery of finished goods”.

The logistics industry already started to take sustainability into account in recent decades. This shift was further toughened by additional trends impacting the main stakeholders. These include an increasing awareness of environmental issues within society, resulting in the rising importance of economic drivers of sustainability. Worldwide, transportation has already become the second highest carbon dioxide (CO₂) emission sector, trailing the electricity and heat generation (IEA, 2014).

2. ROLE PLAYED BY LOGISTICS IN THE PROCESS OF GLOBALIZATION

The capacity and power of logistics has evolved in the late 1940s. In 1950s and the later period military was the only society which used logistics. Logistics facilitates in getting products and services as and when they are needed to the customer. It also helps in economic transactions, serves as a major enabler of growth of trade and commerce. Logistics are widely recognized as a distinct function with the rise of mass production systems.

Production and distribution were before seen as a chronological chain of extremely specialized activities. The role of logistics is that to make sure the availability of all the required materials before every step in this chain. In fact inventory of raw materials, semi-finished and finished goods is a must across this chain to ensure its even performance. The concept of logistics has its base upon the systems approach. There is a solo chain, with the flow of resources starting from the supplier, then to the plant and finally to the end customer and also these performances are done in a chain in order to achieve customer satisfaction at a low cost.

In the market economy of the twenty-first century, the marketing era has shifted into the logistics era (Weng, 2017). In the earlier times, the suppliers in their respective activities were spread across the whole structure, this results in an overlapping of activities and finally in unaccountable authority and responsibility. In today's method driven association, logistics has become one of the most important part of the process. In the highly organized world in which we live, where the next shopping bargain or international business opportunity may be done in just few clicks, the transport and logistics sector plays an increasingly important role.

Logistics makes the global distribution of the latest gadget possible within an exact time window, as well as enabling the specialized transport of life-saving vaccines and medicines to field hospitals in remote locations. The direct inputs to the economy, logistics and express services accounts major of global GDP.

The needs of customers must always be met - e.g., in terms of on-time service, delivery reliability, degree of service, low pricing, short order-processing times, flexibility, availability, capacity utilization and productivity. Furthermore, concerns about the

environment have been growing for years now. In this process, an increasing hatred to environmentally damaging road transports has emerged. As a result, somewhat forgotten means of transport like inland waterway shipments are becoming increasingly striking.

3. THE SIGNIFICANCE OF A SUSTAINABLE METHODOLOGY:

A very little work is done to understand the role and importance of logistics in an organization's chase towards sustainability. For firms to implement a sustainability strategy in their supply chain operations, the logistics function needs to play a prominent role to eliminate inefficiencies and reduce the carbon footprint. As stated in the CEDR 2012 Climate Change call for research: Road authorities need to evaluate the effect of Climate Change on the road network and take remedial action concerning design, construction and maintenance of the road network.

In addition to the pressure from the main stakeholder groups (civic society including consumers, media and regulatory bodies), the theory of Business Case for Sustainability (Schaltegger, LudekeFreund, & Hansen, 2012) also explains why business now see the measurement and management of their supply chain impact as an important aspect of their operations. Such a theory emphasises how the links between voluntary environmental and that of the economic success can be managed, advanced, or innovated. This climate change scenario does not even include the fact that the production of the key natural resource currently required for most transportation - oil - will decline dramatically. The forward process begins by recognizing that the logistics industry is a major source of CO₂ emissions.

Over recent decades and even years have modified the climate scenarios, there is no repudiating that significant warmer climate scenarios are considered ever more expected. Road freight accounts for roughly 60% of total emissions from the logistics and transport sector, with over 1,500 megatons of CO₂-equivalent emissions. Assessed in emissions per ton kilometre, air freight today is still the most carbon-intensive transportation mode, even if new generation aircraft are expected to burn up to 20% less fuel. The most carbon-efficient transportation modes of motorized transport are rail and ocean.

4. NEED FOR LOW-CARBON LOGISTICS:

Low-carbon logistics has become a trend for the logistics industry. So logistics industry must liberate lower carbon emissions. While the need for the logistics sector to respond to the climate change is clear, low-carbon logistics solutions and elastic transport modes are not yet widely available. The option of switching the transport of goods from a more carbon severe transport mode to rail, for instance, depends on the railway infrastructure in place. Getting better the efficiency of transport modes is also a challenge.

Development of low-carbon economy has become an important choice for all countries in the world to promote economic, social and environmental sustainable development. The concept of low-carbon and low-carbon economy has attracted more attention. The concept of low-carbon applied to the logistics produces a low-carbon Logistics. For the expansion of our logistics, the negative impact on the environment caused by logistics activities is increased with the economic development.

There are only a few market technologies and solutions today that can meet the specific needs of the transport and logistics sector. This is especially true for air cargo and long-distance road transfer, where there is currently a lack of technologies and fuels. low-carbon logistics needs to be implemented both in venture macro and micro level, which means the government should provide relevant policy support and micro enterprises should be actively be involved in all sectors of the logistics for energy saving. In practice, low-carbon logistics optimization models are effective tools used by enterprises to implement emission reduction.

Finally, sustainability also seems to be a cultural issue. Today, many still see a disagreement between economic growth and environmental defence, rather than realizing how they may go hand-in-hand. At the same time, although fighting climate change has become a key topic of public talk and media coverage, governments still have a hard time reaching global political agreements on reducing greenhouse gas emissions.

Improvements are induced by the implementation of environmental regulations and policies (Serrenho, Mourao, Norman, Cullen, & Allwood, 2016) as well as sector-based emission reductions/preventions schemes using energy efficiency and conservations technologies (Koh et al., 2016).

5. EMERGING TRENDS AND IMPROVEMENTS IN BUSINESS:

Green collaboration is the combination of green practices and collaboration. It is not well known how to motivate supply chain members to engage in green collaboration and capture green benefits across the breadth of the supply chain. Similarly, there is a question how each member within a supply chain can aim to balance short-term and long-term benefits under the collaborative mode of operation (Gunasekaran et al., 2015). The following are some of the trends and developments that are likely to shape businesses by 2020:

- Employees will be encouraged to shift their sustainable behaviours from their home to their workplace. A company's sustainability-related act will become even more vital in recruiting and retaining employees.
- Investors will expect companies to adopt more sustainable company models, such as producing goods and services with smaller amount natural resources. They aim to handle the risk of future environmental and social regulations. Expectations of how a company reports

on its performance related to sustainability, as well as the occurrence of reporting, will also rise.

- Clients will keep sustainability factors prior on their planned agenda, generating demand and the making of sustainable products and services. One key driver will be needed to evaluate and decrease his own carbon footprint.
- Political leaders of the crop will support stricter sustainability legislation (e.g., carbon accounting, bio fuels, cross border/ entry system that help avoid bare trucks, air traffic control reform), and further alternative Technologies (e. g., solar panels, electric vehicles).
- Industry alliances will be designed to set standards (e.g., the Clean Cargo Working Group), and support new ways of idea (e.g., subcontractor management, and the issue of companies being both customers and subcontractors to each other). Although some of these elements may sound good, the transport and logistics sector has already started to change its trends towards a more sustainable approach. The makeover to a greener business is right on our doorstep.

6. OUTCOMES - MAJOR IMPROVEMENTS OF WORLDWIDE LOGISTICS ENVIRONMENT TOWARDS SUSTAINABILITY

6.1. LOGISTICS SERVICES - TACTICAL SIGNIFICANCE IN THE FORWARD PROCESS TOWARDS A LOW-CARBON NATION.

Despite the growing body of sustainable supply management literature (Touboulic and Walker, 2015), scant attention has been paid to the management innovation process which entails the emergence and development of sustainable practices in the supply chain. As financial and environmental issues become progressively more twisted, this will also shift logistics companies away from being providers of a commodity from becoming experts consulting partners that help “decarbonise” supply chains and sharing processes.

The foremost logistics companies will be those that possess the only one kind selling proposition and differentiator of providing these sustainable services. Efficient supply chains have long been considered key for a company’s economic success, but as market and regulatory demand for greener products rise, efficient, eco-friendly supply chains will increasingly be sought. Logistics play a unique role as a system industry, connecting businesses from all sectors and from all regions, makes it predestined to address the problems of CO₂ emissions all along the supply chain. The development towards logistics as a sustainability enhancer will not only come from providers rethinking their contribution.

Companies will adjust their view about their own logistics processes sees them as a planned levers that can obviously influence their market position. Within the Green Trends study, business customers already anticipate that, in future, logistics processes and actions will be aligned with the goal of reducing carbon emissions. These improvements in companies' supply chains will not only reduce their carbon footprint but at the same time, help to reduce cost, increase quality and leverage new market opportunities.

Eftihia Nathanail (2017), states that, ' optimization of urban freight transport (UTF) can make an important contribution to the sustainability and liveability of cities, conducting in the alleviation of traffic congestion and the mitigation of co2 emissions and noise impacts'. If companies consider their supply chain a key element of their business strategy, they will also become much more aware of prospective improvements - in terms of cost savings, increased consistency, and CO2 reductions.

6.2 TECHNOLOGICAL ADVANCEMENT - NEW DETERMINED KEY PLAYERS FROM COMPANIES, GOVERNMENTS AND FINANCIAL INSTITUTIONS.

While all players including both opinionated and business-related, recognize that expertise can provide important sustainable solutions, financial constraints and longer repay periods still hold back savings. This is true not only for new and modern technologies, but also active ones as well. As few companies will be willing to carry these costs alone, business, policymakers and financial institutions will have to work together to promote investments. This change will be ushered in by rethinking on many levels.

Companies need to accept slightly longer repay periods; policymakers need to put incentives like tax breaks and green procurement obligations in place to reward companies who make carbon reduction a priority. And, financial institutions can support sustainable business practices, too, for instance by developing innovative loans to allow for energy efficiency measures. Within companies, this will include a change in savings policies. Progressively more, companies will allow for longer pay-off periods for energy- saving measures.

Y Wu et al. (2015) who examined the relationship between energy consumption, urban population, economic growth and CO2 emissions in the BRICS countries and reported that economic growth has a decreasing effect on the CO2 emissions in Brazil and Russia but has an increasing effect in India, China and South Africa. Nevertheless, the improvements in supply chain efficiencies (that is, reduced emissions intensity) of the BRICS countries can be attributed to a number of factors including implementation of robust environmental regulations and policies, energy efficiency programmes and many other decarbonisation initiatives. Financial institutions will play a twofold role in supporting companies. In exact, innovative funding instruments will be established for large-scale efficiency programs. The

sector will also create sustainability assessments and ratings, and design sustainable financial products. Some of this is already happening.

“Responsible investment” funds in many ways to the sustainable product of the financial sector for their sustainability and for the growth of their reputation. Government policy, either by offering low-interest loans or through direct subsidy, will promote the development or use the technologies and concepts until they reach mass-market stage. An example of this is the support already given to hybrid, electric or other low-emission vehicles in many countries. These incentives must be managed in a care full manner, though. Otherwise, assured long-term financial support can hold back technological progress and breakthroughs.

6.3 PARTNERSHIP WITH SUPPLY CHAIN - INITIATER TO ATTAIN SUSTAINABILITY

The restrictions on the number of vehicles allowed entering the city on any given day or time period, aimed to encourage carriers to work together within these limits, are generally no longer imposed, one observes the proliferation of city zones with access restrictions to vehicles, commercial and private, doted of particular permits. Even though a thorough investigation of their impact is yet to be done, such restrictions are modifying carrier behaviour , as are legislations aimed to reduce CO2 emissions (Browne et al., 2014). The shift towards sustainable logistics will bring about an increase in the level of cooperation among all the players in society, business and government, as they set up principles, agree on price tags and sustain necessary policy. But business models will change as the companies discover that sustainability calls for more combined approach. For example, multi-user warehousing and consolidated shipments are ways not only to reduce surplus capacity and save money, but they also lesser emissions.

One condition to ensure the growth of such combined approaches is to perform with rivalry rules in order to ensure legal confidence of those new business models. Many companies are still alert about collaborating too closely and are cautious of sharing know-how and putting insightful information at risk. Still, the majority of business customers already strongly agree that horizontal teamwork to reduce CO2 emissions will significantly increase in the next ten years.

6.4 RECENT BUSINESS MODELS OF LOGISTICS - SUSTAINABLE INVENTIONS

Electric Transports will have the largest effect on the logistics industry as the low-noise night deliveries becoming common practice. Huge vehicles could also become a part of “smart grids,” by charging their batteries during periods of low demand (or high supply). Passionate to the grid, their batteries might become a basis of energy for others throughout times of high demand - thus building logistics companies not only consumers, but also managers of energy. During the progress dematerialization trends the digital distribution of

papers, books and other media and offers many opportunities to save carbon emissions, as well.

While this has at first put logistics provider under pressure, it will also provide for new business opportunities. Hybrid mail services allow what was once delivered as a letter to be sent digitally to distribution centres near points of delivery, where it is printed and delivered to the final end. Even e-mail is being embraced by postal services, which now increasingly offer a secure version that is as binding as a letter.

6.5 STANDARDIZING CO₂ TAGGING - TRANSPARENT BUSINESS IN SUPPLY CHAIN

Hyper connected crowd-sourced delivery, allowing individuals such as commuters to deliver encapsulated goods of appropriate size from a hub nearby their departure point to a hub nearby their destination, using their car, motorcycle, bicycle, or even walking, making some money and contributing to reducing greenhouse gas emissions (Rouges and Montreuil, 2014). Logistics companies will use their experience and knowledge of processes to collect this data that supports the effort to develop standardized CO₂ labelling in a format that is easily understood, transparent and simple to compare.

Currently, this transparency is provided mostly for green products within companies. But logistics companies will identify that they have a common interest in working together with governments, to develop standards and labels that are accepted by all. Governments will support this overall development by promoting global values that provide clarity concerning CO₂ emissions. Urban mobility accounts for 40% of all CO₂ emissions of road transport and up to 70% of other pollutants from transport (European Commission, 2015).

6.6 CARBON EMISSIONS AS A PART OF BUSINESS

Adekomaya et al. (2016) state that 15% of world's energy from fossil fuels is used in food transport refrigeration and that the environmental influence of emissions from food transport vehicles accounts for 40% of the global greenhouse effect (Adekomaya et al., 2016). Clearness provided by labelling and standards is only the first step. An important thing to make businesses and logistics more sustainable will come with carbon emissions becoming a common factor in a company's accounting and decision-making process as costs for procurement or human resources. Reduction of threat and holding up their plan, companies will insist that costs incurred by carbon emissions be assessable, thus calling forth the need for the emission of the value tags.

PietroEvangelista (2017) states that "Notwithstanding environmental sustainability is generally recognised as a strategic priority, a certain degree of diversity in the deployment of

environmental strategies still exists”. Governments will make this possible by introducing a carbon-pricing structure. Two instruments like cap-and-trade or duty systems have their merit. Cap- and-trade sets an exact fall target while allowing for some power in how that is reached.

For example, in the mid- to long-term, carbon credits could become a tradable money - like the euro or U. S. dollar. One of the world’s largest emissions trading schemes is already in place which is the European Union Emissions Trading System (EU ETS). But cap-and-trade systems will also have a downside. Carbon emissions became a product with patchy value, thus increasing financial doubt. A second instrument of the governments will draw on are taxes levied on the burning of fossil fuels to discourage their use, and encourage another energy sources. Many countries already use taxes on fossil fuels to support their environmental policies.

6.7 MEASURES OF COMPANIES IN CARBON PRICING

A main test for the achievement of these methods is providing for a level playing field. Common standards and rules, in according to Grant (2013), that apply to all actors in the business; will therefore need to be introduced. At first, the industry will apply accurate but realistic standards for CO₂ accounting and reporting across the sector. Besides allowing the customer to compare goods and services, this will ensure that companies, logistics providers and governments will still be speaking the same language and using the same sort of information. Ordinary standards, though important, are but a step in the right direction, however, and will not be enough.

Worldwide rules that cover all actors in one marketplace will also need to be introduced. Particularly when it comes to political process, like cap-and-trade systems or regulations, a global scope is always preferable for a global industry like logistics, but sometimes even a regional scope at European level can sometimes be enough. Because of the complexity of getting a large number of diverse countries and organizations to agree, in the near future, fastening regional regulations will be more common than global ones. A patchwork of policy measures at the national level, however, is not sensible. It could lead to a regulatory race to the bottom and encourage “carbon leakage” that reposition the carbon intensive industries to countries with lax regulation.

7. DISCUSSION

For a typical product this supply chain extends from a raw material source through the production and distribution system to the point of consumption and the allied reverse logistics. The paper conveys that logistics is the integrated management of all activities. The

main objective of logistics is to co-ordinate these activities in such a way that meets customer requirements at a very least cost. In the past this cost has been defined in purely fiscal terms. By considering the environment rises, companies must take more account of the external costs of logistics linked mainly with climate change, air pollution, noise, vibration and accidents. This article focuses on achieving sustainability among the environmental, social and economic factors by trying to reduce the external effects.

8. CONCLUSION

Logistics play a major role in global economy as well as everyday life. Firms have to understand that the sustainability needs to be a part of logistics. Internal operations including transportation, warehousing and production need to be conducted much efficiently as possible. Economic and environmental sustainability issues require urgent attention as logistics have significant impact on the natural environment

Major carbon lessening can be achieved today. This is not only true for sourcing and built-up strategies but also for goods allotment. Optimizing the design of a distribution network by using the right modes of transport and managing load facility and routes can be very effective instruments to cut down the rate if carbon emissions as well as cost. Moreover, implementation of a complete set of city logistics solutions can also lead to carbon savings but, at the same time, getting better the quality of life in cities.

When there is no plan for “low-carbon logistics” that can be implemented everywhere irrespective of local circumstances, the range of available technologies and solutions is well-known. The same is true for the important investors and other factors influencing the future growth of the sector. It is very important to connect both strands in order to outline the fluctuation of a logistics industry to become much more sustainable.

In adding up, an uncontrollable large number of transport/ logistics customers agree with the scheme that there should be clear standards for the balancing of transport-related carbon emissions, as well as an evaluation by autonomous organizations. This certainly is an area where political support could make a difference and contribute to the development of greener transport. Similarly, a clear mainstream of end consumers said that in future it would pay attention to carbon footprint measures such as package labels indicating the CO₂ emissions.

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