

Sustainable Development - Implications for Logistics Management

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Development of democracy and civil society connected with contemporary information technology and communications, increase in activities of social movements for protecting the rights of different groups - these are the reasons that enterprises are forced to verify the view on the profit maximization as the only aim of business activity. The belief that companies should participate in eliminating the civilization threats to which they contribute, becomes widely spread. This involves taking responsibility for the quality of life for present and future generations. The legitimacy of such requests is mainly due to the scale and scope of business activities within the supply chains and the impact they have on local communities' life, the environment and the progress of civilization. The concept of triple bottom line (TBL) – one of the fundament of social business responsibility, is based on finding a balance between three dimensions - economy, ecology and ethics. TBL concept results from the paradigm of the sustainable development discussed in this article from the axiological and quality point of view. The subject of considerations will be sustainable development and its impact on logistics management.

Keywords: sustainability, supply chains, sustainable supply chains.

1. INTRODUCTION

Globalization is a source of many benefits on one hand, on the other hand it brings some negative phenomena. Nowadays, the most significant problems are: inequality, poverty, unemployment, disintegrating interpersonal relationships, consumerism and environmental degradation. These negative trends and weakness of the welfare state, as well as growth of multinational corporations are the reasons why the role of business sector in the society is changing.

Development of democracy and civil society connected with contemporary information technology and communications, increase in activities of social movements for protecting the rights of different groups - these are the reasons that force enterprises to verify the view on the profit maximization as the only aim of business activity. The belief that companies should participate in eliminating the civilization threats to which they contribute, becomes widely spread. This involves taking responsibility for the quality

of life for present and future generations (sustainable development, the apotheosis of subjectivity stakeholders). The legitimacy of such requests is mainly due to the scale and scope of business activities within the supply chains and the impact they have on local communities' life, the environment and the progress of civilization.

Understanding the relationship between the supply chain activity and the natural environment is critical both to human health, environment and success of business.

2. PRINCIPLES OF SUSTAINABLE DEVELOPMENT - AXIOLOGICAL AND QUALITY ASPECT

Development is a process of changes of the object, evaluated positively from a point of view of a determined system of values. Due to the nature of the concept of sustainable development, it is important that all values are divided into two groups:

1. **material values**, related directly or indirectly (such as power or prestige) with money, creating the foundations of egocentrism, and
2. **intangible, immaterial values** (such as responsibility, trust, honesty) which form the basis for a moderate (soft) anthropocentrism (Bańka J., 1986, p.33).

According to T. Borys (in: Gasparski W., 2012, p.479) concretization of sustainable development as a new development paradigm, requires an analysis of *inter alia* features such as sustainability, durability and balance.

Sustainability is the principle of maintaining fairness in access to the resources for future generations. Sustainable development is a process of change, which can meet the needs of present and future generations. First of all, this applies to natural resources, but modern holistic approach includes also access to other resources, such human resources or cultural resources. The holistic sustainable quality of life is understood as a primary objective of development. From the value system point of view, this means positively evaluated change due to the at least moderate anthropocentrism.

Durability is related to the issue of substitution of capital, primarily natural and anthropogenic (economic and cultural capital). The individual variant of this feature is assigned to a specific area of ethics (from egocentrism to biocentrism) and to a particular variant of the concept of sustainable development:

1. development of weak durability - it assumes perfect substitution (I principle of durability) of listed above capital (within the limits of the level of business activity and the existing at any given time resources)¹. This is a technocratic approach, a consequence of the traditional welfare economics supplemented with elements related to the safe use of environmental resources. It is the

conventional development based on the egocentrism;

2. development of moderate durability- when a principle of the limited substitution of capital is realized (II principle of durability): human-made capital and natural capital can be a substitute for specific conditions (search for compromise included ecological limits of human activity; development of legal, economic and market-based instruments for environmental protection). The development is based on a system of moderate anthropocentrism;
3. development of a strong durability - when the principle of complementarity of capital is a rule (III principle of durability): first of all it is about recognizing that natural and anthropogenic capitals are not substitutable, but complementary². As before, the development is based on a system of moderate anthropocentrism;
4. development of a very strong durability - submit the development of natural capital on the development of human-made capital (IV principle of durability)³. It is based on a biocentric system of values.

Sustainable development is a process of change that implements a feature balance evaluated positively from the perspective of at least anthropocentric value system. It follows that only the development of a moderate or strong durability can be identified with the concept of sustainable development.

The previously mentioned quality of life is the primary goal of most modern concepts of socio-economic development. The quality of life depends on the adopted system of values. A question determines nature of this issue is: for whom, for what objects, we are assigning the category to the quality of life and what does it depend on? Referring to T. Borys (2007), there are two basic

¹ This means, for example, that the degradation of the natural water tank can be compensated by building the swimming pool

² This principle is adopted by the European Union

³ According to this principle non-renewable resources cannot be exploited at all; in the case of renewable resources, it is acceptable to use the parts that do not affect the ability to renew of the resource in subsequent periods.

options which differ primarily in the scope of ethical subjectivity:

1. in the first option - the ethical subjectivity and thus the quality of life category belongs only to humans;
2. in the second- the subjectivity and quality of life category extends to other - non-human-objects. Under this option, we can distinguish e.g. biocentric and holistic quality of life.

The first option allows to distinguish egocentric and anthropocentric quality of life. They differ in the temporary and spatial prospect and the set of the value which they refer to . In case of the egocentric quality of life, time and space are clearly defined, it is a case "here and now", in contrast with the anthropocentric quality which is independent of the time and place perspective (current and future generations, irrespective of sex, race, faith, age and the like).

3. SUSTAINABLE DEVELOPMENT OF THE SUPPLY CHAINS

The development of the supply chain is conditioned by the supply chain structure and decisions made in relation to coordination of logistics activities, which are shaped by the pressures of the external environment.

Supply chains must respond to environmental pressures from four sources. Resource availability and regulatory pressures place physical, legal and economic constraints on supply chain management, while consumer demands and the ethical responsibilities of

corporations define desirable behaviour in the market and within those constraints (Paquette J., 2006).

According to Paquette (2006), in the context of sustainable development a company must choose: (1) to operate beyond environmental pressures, (2) to operate at environmental pressures, or (3) to resist environmental pressures.

A company that is reactive, flexible, and efficient in execution may operate extremely well at environmental pressure, while a company that is proactive, innovative, and differentiated from competition may best place themselves beyond pressure. The operating model decision may be further determined by market conditions and product attributes.

Excellence of supply chains can be achieved for each operational models. The condition is that:

1. environmental pressure is effectively signaled to the company,
2. there is sufficient time to respond to the pressure, and
3. the company has adequate management and technological capability to implement a response at the supply chain level.

The negative effects of supply chain activities are shown in Figure 1. “The answer to reducing these impacts is not to constrain supply chain activities, but to manage them proactively through sustainable supply chain practices” (Sustainable Supply Chain Logistics Guide, 2011,p. 5). It should lead to the formation benefits in financial (economic), environmental and the societal dimension (cf. fig. 2).



Fig. 1. Environmental and Social Impacts of Sustainable Supply Chain Activities
 Source: Sustainable Supply Chain Logistics Guide, 2011, p.5

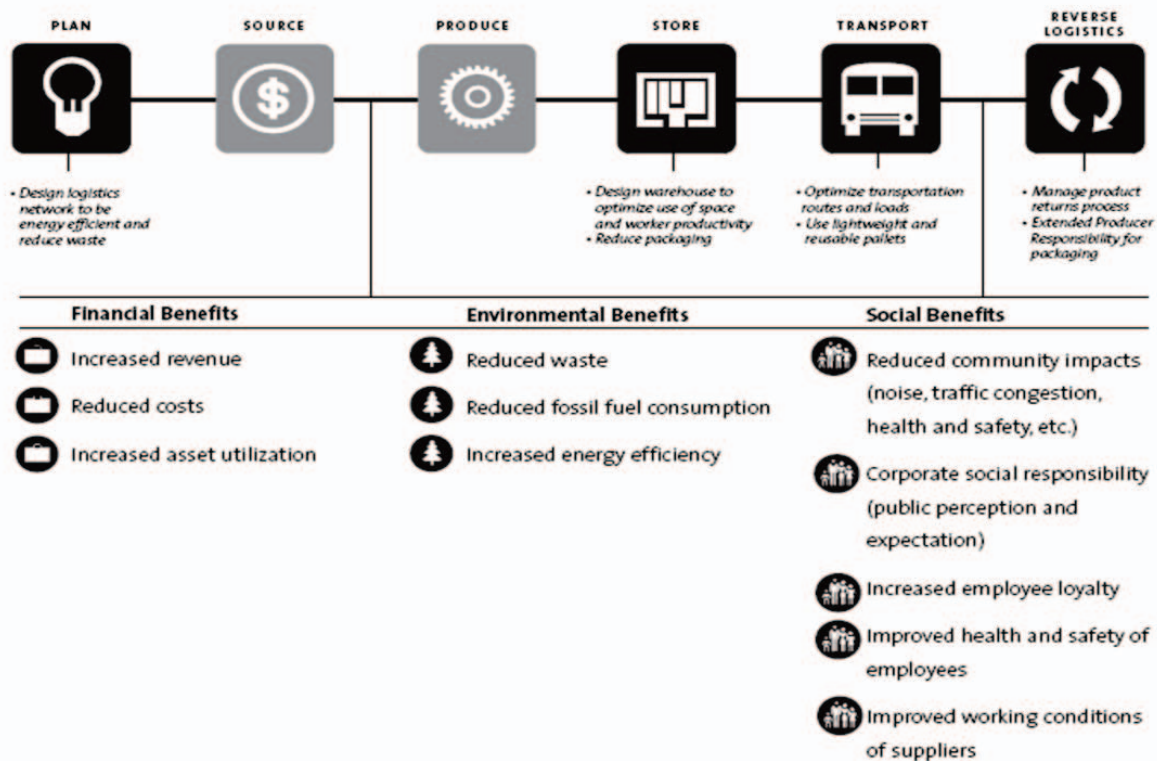


Fig. 2 Sustainable Supply Chain Practices Result in Financial, Environmental and Social Benefits

Source: Sustainable Supply Chain Logistics Guide, 2011, p. 8

The processes implemented within the sustainable development oriented supply chain can not generate or tolerate the risk of a breach in the balance of these three dimensions (in the context of sustainability and durability feature). According to Beckmann (2010), sustainability is a multiplicative concept. Thus no dimension can be "harmed", which is necessary to define the threshold values for each dimension and the analysis of the changes, including the definition of mutual relations in the very long term.

This concept *per se* sounds promising and evokes Kantian ethics of doing the right thing ("Act only on that maxim through which you can at the same time will that it should become a universal law."). Why does acting unsustainably so often appear "convenient"? The reason may be: (1) lack of imagination and forward-thinking, "after me the deluge " and the related (2) erroneous perception of reality and probability as well (3) an asymmetric distribution of benefit and damage in terms of target audience and size and (4) the fact, that the three dimensions of sustainable activities cannot be measured in the same unit.

In practice, however, implementation of this concept is difficult.

The goal of a sustainable supply chain is to create, protect and increase long-term value (environmental, social and economic) for all stakeholders involved in the presence of products and services on the market.

This term refers to the concept of **shared value**, which focuses on the connections between societal and economic progress. Michael E. Porter (2011) defines these concept as "corporate policies and practices that enhance competitiveness of the company while simultaneously advancing social and economic conditions in the communities in which it sells and operates".

In other words, companies can create economic value by creating societal value. Given the ways to create shared value in the supply chain, the most important task should be regarded:

- how targeting unmet needs drives incremental revenue and profits⁴,
- how better management of internal operations increases productivity and reduces risks (redefining productivity (cf. fig.3.) and
- how changing societal conditions outside the company unleashes new growth and productivity gains (cluster development⁵).



Fig. 3 Societal Needs and Economic Value Creation
Source: Porter, Michael E., and Mark R. Kramer.
"Creating Shared Value." Harvard Business Review
Jan., 2011

There is a growing **congruence** between

⁴Design products and services to **address societal needs** (e.g., environmental impact, safety, health, education, nutrition, living with disability, housing, financial security). Open **new markets** by serving unmet needs in underserved communities often requires **redesigned products** or different **distribution methods**

⁵ For example: Logistics clusters are broadly defined as geographically concentrated sets of logistics-related business activities -the warehouses, carriers, terminals, 3PLs, forwarders, brokers, and so on needed to get goods to market.

"They exhibit characteristics which make them unique in terms of cluster formation and their contribution to economic growth. Logistics operations may locate in a logistics cluster due to the cluster's role in supporting economies of scope (mainly for direct operations transport modes) and economies of density (mainly for consolidated transportation modes); their provision of spill-over capacity for warehousing and transportation; and the ability to cooperate between providers when dealing with demand fluctuations" (Sheffi Y., 2012)

economic value creation and societal objectives

- **Social** deficits create **economic** cost
- **External** conditions shape **internal** company productivity
- Social needs represent the **largest market opportunities**

For each shared value opportunity, companies identify and track both social and business results; their parallel goals are to address a social (& environmental) problem and improve business performance.

Creating shared value represents a new approach to managing, also in context of supply chains sustainable development:

"Sustainability and related certification standards have met important needs. They have heightened corporations' awareness of their impact on society and triggered meaningful improvements in social and environmental performance. Their emphasis, however, has been on comprehensiveness (covering all possible impacts) and on demonstrating progress against these issues to stakeholders.

A subset of sustainability measures, such as tracking the reduction of water or energy use, for example, can form the basis for shared value measurement in businesses where these areas are material to the company's financials. Which areas to measure for shared value, however, depend on the industry and the company's strategy and business model" (Porter M.F, Hills G. and others, 2011)

There is nothing "soft" about the concept of shared value. These proposed changes are not qualitative and do not depart from economic value creation.

Whether we are dealing with the evolution from deontological concepts associated with ethics of Kant towards the concepts associated with utility ethics, like Corporate Social Responsibility (CSR) is moving to Creating Shared Value (CSV)?; cf.fig.4⁶

Whether it is an effect of the crisis or ... it is crisis of value?

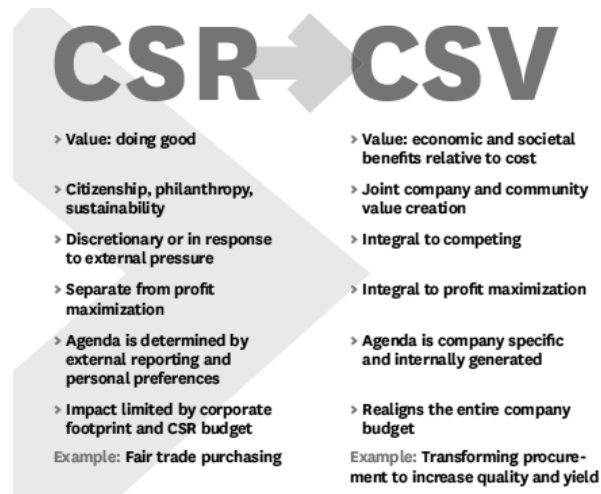


Fig. 4 Social Responsibility vs. Shared Value
Source: Porter, Michael E., and Mark R. Kramer.
"Creating Shared Value." *Harvard Business Review*
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⁶ In both cases, compliance with laws and ethical standards and reducing harm for corporate activities are assumed. But, according to Porter and Kramer, creating shared value (CSV) should supersede corporate social responsibility (CSR)... CSR programs focus mostly on reputation and have only a limited connection to the business, making them hard to justify and maintain over the long run. In contrast, CSV is integral to company's profitability and competitive position. It leverages the unique resources and expertise of the company to create economic value by creating social value" (Porter M.F., Kramer M.R., 2011, p.16)