

*The Academy of Management and Administration in Opole*

**MODERN TECHNOLOGIES**

**IN ECONOMY AND MANAGEMENT**

*Collective Scientific Monograph*

*Edited by Oleksandr Nestorenko*

*Tadeusz Pokusa*

**Opole 2019**



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## **1. Formation of an effective environmental strategy as a mandatory factor of sustainable development and competitiveness of enterprises in modern conditions**

Issues of environmental management, environmental protection and environmental safety have now become the most important political issues that are being addressed at the international level. Traditionally, various methods of pollutant disposal were used to solve environmental problems, which were formed in the process of production, the focus was on technical and technological aspects. At the present stage of scientific and technological progress, along with increasing environmental requirements for production technologies, which provide transition from elimination of consequences to management of pollution at all stages of the made production life cycle, management comes to the fore and becomes a decisive factor in the economy, determining the further effective development. Thus, in solving environmental problems of the enterprise in modern conditions, more attention is paid to management, politics, culture, which finds their expression in the style and methods of management.

All this puts forward new requirements for the management of economic activities and, accordingly, to the knowledge level and manager's competence at all levels in environmental matters. It is necessary to take into account environmental features in the management of production, development of new products, marketing operations, personnel, finance. Currently, environmental management allows enterprises to obtain certain advantages, such as cost reduction, the use of environmentally friendly products market potential, improving the image of the enterprise.

Traditionally, environmental management is considered as a subsystem of the enterprise management system, as well as financial, personnel and production management. At the same time, the economic practice does not pay enough attention to the environmental strategy, its connection with the economic strategy, as well as the role of the environmental management system in the formation and implementation of the environmental strategy.

The term "strategic management" began to be used by theorists and practitioners at the turn of 60-70-ies in order to divide the management carried out at the highest level from the current, operational management at the production level. The need for such a division was caused primarily by rapid changes in the business environment. The main idea that reflects the essence of the transition to strategic management from operational is the idea of the need to shift the focus of management attention to the environment in order to respond in a timely and appropriate way to the changes taking place in it, in a timely manner to respond to the challenge has been posed with the external environment [4].

In recent decades, such a challenge has been the aggravation of environmental problems around the world, and in response to this challenge, enterprises began to rebuild their activities, including management, which led to the emergence of the "environmental strategy" concept. The environmental strategy should link many aspects of environmental management, it is a comprehensive plan to achieve the goals and objectives of the enterprise in the environmental sphere. It is the link between environmental policy and operational environmental programs. Environmental strategy depends on a large number of factors and is related to the strategy of the enterprise as a whole. Thus, environmental management becomes not just an integral part of the enterprise development concept, but organically associated with it. Briefly, the strategic role of environmental management can be defined as follows: for effective economic development environmental management should be presented at the highest level of management of the enterprise, its functions should be taken into account when developing a business strategy and organizational structure.

Analysis of the environmental strategy role in the enterprise operation allows us to identify the following environmental strategy aspects:

- implementation the requirements of the state and the public in the environmental sphere, positioning the current state in relation to them;
- prevention of environmental situations that may result in financial losses in the form of fines, compensations, liquidation of consequences costs, environmental risk management;

- market research to determine the production prospects of environmentally friendly products, technology replacements, and the choice of an alternative that provides the flexibility of the enterprise, that is, the possibility of reorientation in the event of changes in external conditions;

- using the achievements of scientific and research work for the production of environmental products and ecological purity at all stages of the life cycle processes;

- formation of marketing policy taking into account the environmental characteristics of products, the benefits of environmental labeling, providing a long-term sustainable position in the market.

Methods of implementation of the company environmental strategy are classified in the following way [1]:

- the strategy of the "end of the pipe» (disposal of pollutants occurs at the end of the process, using a variety of treatment plants);

- the strategy of "cleaner production».

Among the strategies of "cleaner production" are:

- waste minimization and recycling strategies;

- reducing the formation of pollutants;

- life cycle assessment in the development of green products.

In the analysis of the environmental strategy [11], among the environmental factors influencing management decisions in the field of environmental management and protection, state regulation and the market (including infrastructure, suppliers, consumers and competitors) are singled out.

In practice, the environmental strategy assessment uses 2 dimensions:

- direction of impact: the environmental program is based on changes within the enterprise, or on changes in the market through its own production;

- the purpose of the enterprise, which can only be to meet the requirements of the state (compliance strategy), to achieve a competitive advantage, or to achieve environmentally sustainable development.

The strategies of most enterprises are focused on changing their own behavior, as this is a factor that the management apparatus can control.

An example is a strategy aimed at managing the reduction of dangerous waste.

The use of market potential for changing market behavior is aimed at changing the behavior of consumers or suppliers, which in most cases is carried out by changing their own behavior. However, unlike the strategy described above, this change affects other market participants. The strategy aimed at changing the market can be implemented as follows: through the competition, that is, the change in the behavior of the market directly through investment or operational transformation, or through government regulation – market behavior changes as a result of regulatory changes initiated by advanced enterprises.

In the analysis of the environmental strategy from these positions, enterprises are classified as one of the six groups on the basis of expert assessments (Table 1).

*Table 1. Classification of environmental strategies types*

Purpose The direction of the impact	Compliance with state requirements	Achieving a competitive advantage	Sustainable development
Changing your own behavior	Changing one's own behavior to meet the requirements of the state	Change your own behavior to achieve a competitive advantage	Changing one's own behavior to achieve sustainable development
Changing market behavior	Change market behavior through the stricter requirements of the state	Achieving competitive advantage changes the behavior of the market	Sustainable development changes the behavior of the market

The most common among foreign companies is a compliance strategy based on changing their own behavior. At the same time, companies that do not have market potential do not have sufficient flexibility to implement a more active strategy, since in any economy most of the production and distribution is carried out by companies that do not have significant market potential.

The use of the state compliance requirements for changes in market behavior is difficult [11]. There is no example of a compliance strategy focused on changing market behavior in competition. In developed countries, the implementation of legislation is not a key factor. It is a condition for entering the market, but not its changes. The implementation of such a strategy may provide some advantage in case of changes in the regulatory framework, for example, with the growth of environmental requirements for cars.

Another strategic focus, as mentioned above, is based on achieving a competitive advantage. It's not easy using a strategy that changes its own behavior. This requires specific assets or organizational capabilities. In order to achieve a competitive advantage and change the behavior of the market, it is necessary, firstly, to have a significant position in the market; secondly, most often the companies implementing such a strategy represent a division of transnational corporations; thirdly, such companies create externalities; fourthly, each of them is under the control and influence of environmental organizations. That is, in the past, such companies had a significant environmental impact, which created ethical, technical and financial problems. To address these challenges, management was able to find a solution acceptable to both the environment and the economy. The third type of strategic orientation is environmentally sustainable development. It is represented with the smallest group of enterprises. It is difficult to determine to what extent economic behaviour can be truly environmentally sustainable. This group includes enterprises that use the most advanced scientific achievements in solving environmental problems, for example, the rejection of bleaching with chlorine in the production of cellulose, as well as general recycling, the implementation of stricter standards etc.

All companies belonging to this group are serious representatives of their industry, but do not have market potential based on reputation, market share, new technologies.

An enterprise can implement one of six strategies at a particular time. At the same time, the strategy can change and move to a different group from a compliance strategy to a competitive advantage and sustainability. In addition, environmental law requirements are becoming more stringent and a competitive advantage strategy can evolve into a compliance strategy, and an advantage in technology can change the ability to influence the market through its own behavior.

This approach to the assessment of the environmental strategy, in our opinion, is not universal. There are no clear criteria on the basis of which the company's strategy is attributed to a particular type. Evaluation largely depends on the subjective opinion



of the authors. The economic characteristics of the company's activities in the field of nature management and environmental protection are not used in the assessment. In addition, the use of this approach is impossible without changes and adaptation to the peculiarities of the Ukrainian economy. All this led to the need to identify additional criteria for assessing the environmental strategy of Ukrainian enterprises.

Along with competitive advantage strategies through environmental aspects and sustainable development, within the framework of the compliance strategy with the requirements of the state, we will highlight the forced and passive strategy of compliance. We will also add another type of environmental strategy to this classification – ignoring environmental aspects. The types of environmental strategy and a brief description of the determinants are presented in Table 2.

The most aggressive towards the environment is the ignoring the environmental aspects of the enterprise strategy. It is carried out in conditions of low economic development, when the economy is a priority in relation to the environment. Nature users consider the natural environment as a factor invariant in relation to economic development. Low level of ecological culture and insufficient efficiency of state regulation at unreasoned use of economic methods of management, can lead to irreversible changes in the natural environment.

In the case of a forced strategy, the company meets the requirements agreed with the state environmental control authorities for a certain period. At the same time, the maximum permissible standards for emissions and discharges are not met, but we have agreed to temporarily exceeding the maximum allowable. Such enterprises are working to find reserves to reduce the impact on the environment.

In the case of a passive strategy, the company meets all the requirements of environmental legislation, environmental costs are at an acceptable level and are not a decisive factor in pricing. If the state requirements are constant and the market environment is stable, the company will try to maintain this situation as long as possible.

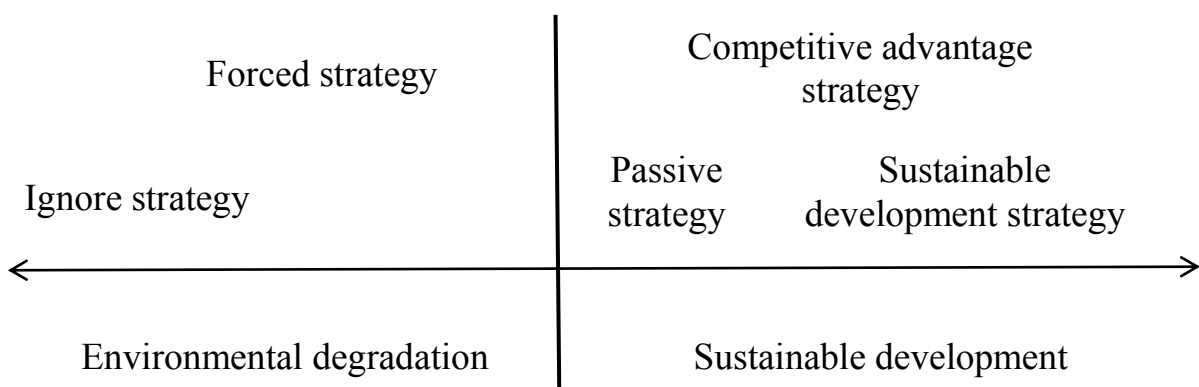
*Table 2. Types of environmental strategy and characteristics of determining factors*

Types of environmental strategy	The purpose of the enterprise	The environmental factors that define this strategy			
		State	Counteragents	Public	Level of economic development
1. Ignoring environmental aspects	Survival at any cost, without regard to environmental characteristics	The lack of efficiency of state regulation. Economic sanctions do not correspond to real environmental damage	Only economic factors are taken into account	Passivity due to low ecological culture	Low level of economic development of the state, unstable economic development of the enterprise
2. A necessary strategy	Implementation of temporarily agreed requirements of the state	High penalties, forcing to comply with the requirements of the state	Only economic factors are taken into account	Passivity due to low ecological culture	The economic situation of the enterprise may deteriorate if environmental requirements are not met
3. Passive strategy	Maintaining the status quo as long as possible	Insufficient efficiency of state regulation, lack of motivation for further improvement	Passive	Passive	Low, medium
4. Competitive advantage strategy	Achieving a competitive advantage through environmentally friendly products	Effective regulation and coordination	Consideration of environmental factors in economic interaction	Active position with a high level of environmental culture	High
5. Sustainable development strategy	Satisfying the present generation without compromising the future	Coordination at the level of strategy selection	Assessment of reputation, environmental characteristics, quality of final and intermediate products. The use of eco-labeling	Active position to exert influence and pressure	Powerful economic potential

The strategy of achieving a competitive advantage is based on consumer demand for environmentally friendly goods, that is, it can be implemented only in the case of a high environmental culture of consumers, taking into account environmental in economic interaction. In addition, the successful implementation of this strategy requires specific assets, such as technology or organizational capabilities.

Following the strategy of sustainable development, the company complies with all environmental requirements and it is the initiator of innovations that reduce the environmental impact, expands the scope of its environmental activities, including various areas and aspects of activities that are not directly related to the requirements of environmental legislation, involve all personnel in active environmental activities. All this forms a voluntary environmental leadership, both in certain areas and aspects of environmental activities, and in the field of environmental management in general. In this case, the goal is to implement a sustainable development model. It is aimed at reasonable satisfaction of human needs, while improving the quality of life of living and future generations, the careful use of the planet's resources and the preservation of the natural environment.

In the course of the study, the author developed a graphical representation of the company's position in the environmental and legal field in accordance with the chosen strategy. It is shown in Fig. 1.



*Fig. 1. Positioning of the company's environmental strategy in the ecological and legal field*

When implementing the environmental strategy, the company uses a variety of technical and technological means. If we compare the goals and methods of implementation of the chosen strategy, we will get a matrix of environmental management. It is presented in Table 2.

*Table 2. Environmental management matrix « purposes-methods»*

Purposes	Ignoring environmental aspects	Forced compliance strategy	passive compliance strategy	Competitive advantage	Sustainable development
Methods					
Emissions, discharges, waste storage					
«End of pipe» technology					
Waste minimization and recycling					
New technologies that allow to reduce the harmful effect					
Development of «green products» based on life cycle assessment					

This matrix allows us to assess the possibility of achieving the goal using various means. In the analysis it is necessary to compare the types of impacts and ways to reduce them. It is obvious that emissions, discharges and waste storage, as well as end of pipe technologies, will not allow achieving a competitive advantage and sustainable development. A combination of different methods is possible to implement the matching strategy. For deeper analysis, it is necessary to compare costs, differentiation opportunities and market.

Thus, the use of generalized foreign experience of strategic management in the environmental sphere in the analysis of Ukrainian practice allowed developing the following classification of environmental strategy types for Ukrainian enterprises:

ignoring environmental aspects, forced compliance strategy, passive compliance strategy, competitive advantage strategy through environmental aspects, sustainable development strategy.

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