



ENVIRONMENTAL STRATEGIES AS THE SYSTEM OF ACTION – CHRONOLOGICAL ORDER AND MARKET CLASSIFICATION

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Abstract

The aim of this article is to put in order the environmental strategies and characterize them. Using the evolutionary way, the research team presented the environmental strategies considering particular environmental models: from static to dynamic ones – the Cleaner Production Strategy. Taking under consideration the market category, such strategies were presented: passive, defensive, innovational and offensive.

The environmental strategies are changed and in this paper only two classifications were presented. More over development of theory of environmental knowledge and practice of business causes that new strategies appear and new criteria of their classification are formed. Enterprises using the Cycle of Deming continue improvement in all areas of their activities. So, in the future new solutions can be created.

Key words:

environmental strategy, static environmental model, dynamic environmental model, dilution, filtration, neutralization, recirculation, strategy of Cleaner Production, market strategy: passive strategy, active strategy, innovational strategy, offensive strategy.

INTRODUCTION

The environmental protection strategies appeared in the late first half of the 20th century along with the development of the ecology awareness of societies and organizations. The strategies were progressing through the strategy of dilution, filtration, neutralization of the wastes, recirculation until the strategy of waste minimization and the strategy of Cleaner Production (CP). The last one is considered to be the model strategy. Today the environmental protection strategies are called environmental strategies.

This article supposes that the environmental strategy is a long – term plan of action for resolving problems of natural environment considering particular functions and activities of organization in order to improve the quality of nature and of its components. The purpose of accepting to realization the purposes of environmental strategies is a balanced and steady development of the company.

1. ENVIRONMENTAL STRATEGY – CONCEPT, FEATURES

The environmental strategy presents the manner in which a company is able to adapt for new demands of environment protection. The document indicates what

the company ought to reduce the environmental nuisance. Its character is proactive and its realization does not only limit the quantity of wastes and pollution, but also prevents from their production.

The realization of environmental strategy brings the most desired effects when it is being used for a long period of time therefore it is necessary to realize it regularly and constantly. Implementation of the environmental strategy fundamentally influences the living conditions of present and future generations. It is a continuous aspiration to improve the quality of natural environment - think globally, act locally.

Putting the environmental strategy into practice, a company manages to gain competitive advantages over rival companies, and market success. Current consumer demands an ecological picture of economic entity.

The company is able to achieve the inertia of environmental activities if the strategy is a component of internal Environmental Management System (EMS), which puts in order activities and harmonizes them in order to create a balanced and constant progress.

2. CLASSIFICATION OF ENVIRONMENTAL STRATEGIES

Basing on the scientific literature of environmental management, the strategies of environmental protection were made on the basis of two criteria: chronological and marketable (Fig.1).

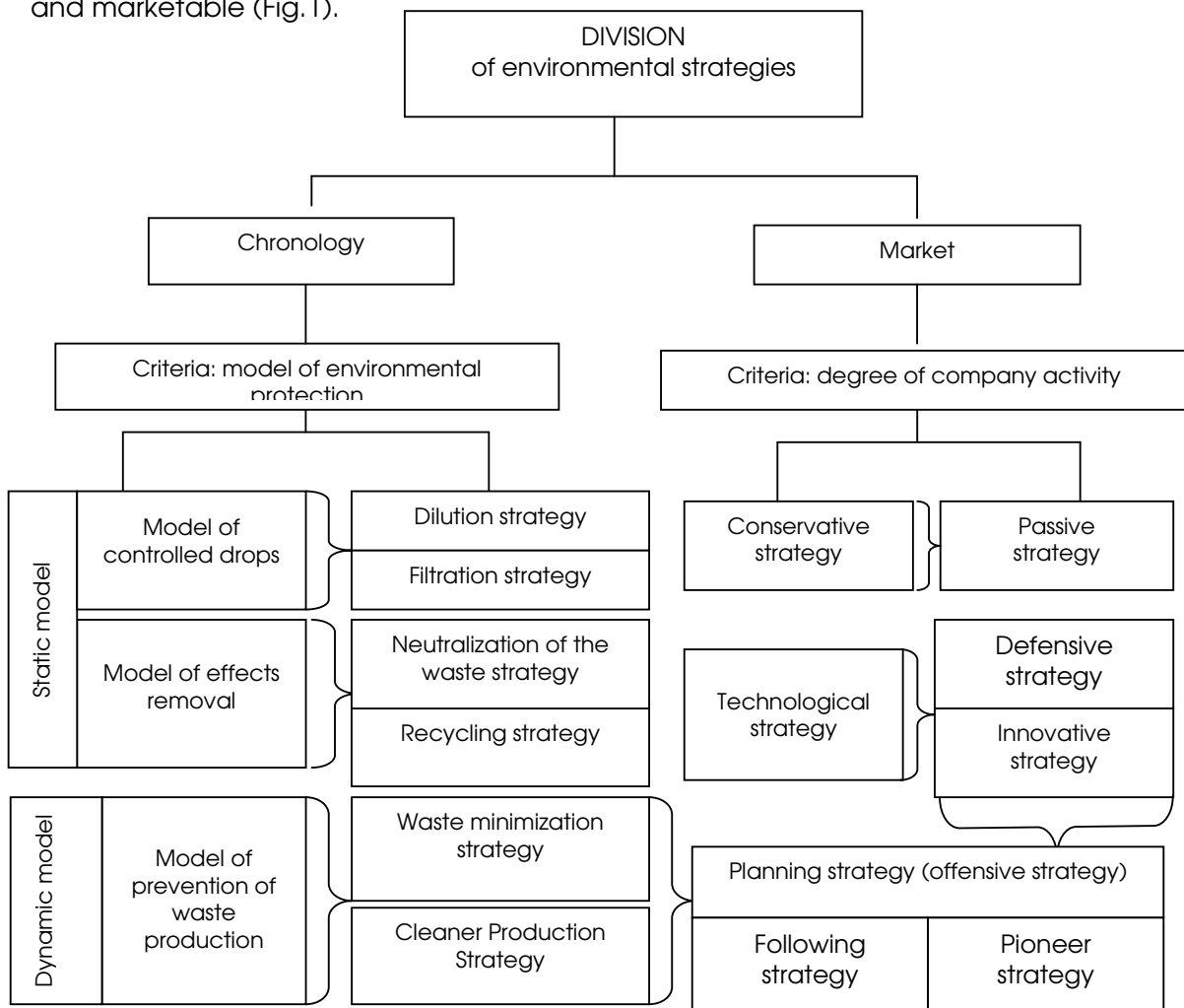


Fig.1. Division of environmental strategies

The first one was prepared in accordance with static and dynamic models of environmental protection, which present following strategies: dilution, filtration, neutralization of the wastes, recirculation, waste minimization and the strategy of Cleaner Production (CP). However, the model of uncontrolled drops was not taken under consideration because of a lack of proecological activities in companies (1-3). The second criterion is based on a measure of company market activity in a given area and following strategies were presented: passive, defensive, innovative and offensive. The passive strategy is one of the conservative strategies of a company's status quo consistent with the legislation. The defensive strategy introduces changes into a technological process of the company in order to replace the existing strategy by a new one, proecological (BAT). The highest form of company's activity is the offensive strategy. It makes the company focus on ecological programs realization so the natural environment becomes the most important issue for organization (4-7).

Table 1. Models of environmental protection and executive strategy

No.	Model of	Duration of the model	Name of the strategy	Strategic activities
1	uncontrolled discharges	Till the end of the fifties/sixties of the 20 th century	A lack of formal strategy of action	A lack of intended activities leading to waste emission reduction
2	controlled discharges (static model)	Till the end of the sixties/seventies of the 20 th century	Dilution, filtration	Activities are passive; they are a result of reaction to the effect, not to the cause (end of pipe solution)
3	effects removal (purification) static model	Since the seventies/eighties of the 20 th century	Waste neutralization, recycling internal and external	Activities are also passive, consist of waste neutralization and / or their recycling (disposal)
4	prevention of waste production (dynamic model)	Since the nineties of the 20 th century	Waste minimization, CP - Cleaner Production	Activities are active, prevention from waste production or waste minimization (source reduction).

Based on : Nowak, Z. 2001, Zarządzanie środowiskiem, Politechnika Śląska, Gliwice, cz. I., 104-111

3. CHARACTERISTIC OF INDIVIDUAL ENVIRONMENTAL STRATEGIES

Over years economic entities were changing their activity strategies with regard to environment. In a chronological conception environmental strategies are a result of the realization of a selected environmental protection model. The environmental protection models of the end of 20th century were static, without a factor of time. The models were fulfilling the regulation requirements. The static models include a model of controlled drops, and a model of purification (a different name at the end of the pipe). The companies entered the 21st Century with a new model of environmental protection which is dynamic ones. This model underlines the fact that the environmental changes depend on time. Modern strategies are based on the skills of foreseeing them and on prevention of negative effects. Individual models had different activity strategies. The model of controlled drops consists of the strategies of dilution and filtration. The first strategy was to reduce pollutant concentration that was introduced into the environment supposing nature would manage to absorb it. The reduction of concentration was held by water dilution of effluent (hence the name of the strategy) or dispersing gas and dust pollutants over a larger area (construction of high chimneys). The filtration strategy rested on use of different sorts of filtration equipment to separate or stop a big amount of pollution. An example of the strategy is building a sewage treatment plant, dust removal or desulphurization

system of the industrial areas. After a beginning state of euphoria it turned out that the situation is more complex, because the waste separate from the sewage must be recycled and neutralized. The strategy did not resolve the problem of waste management, but only postponed it. As a result of the situation, the environmental entities were offered another model of environmental protection which was a model of purification, i.e. disposal of wastes collected over a period of time.

Within this model the companies started the waste disposal strategy based on a temporary action, only directed at the reduction of harmful wastes. The recycling developed from a strategy that consisted of returning the wastes replacing a part of raw materials (secondary materials) to the same productive process or similar one, or even totally different industrial branches. The strategy also allows using the industrial waste as product (semi-product). Recycling can have an internal form when it takes place in a company producing wastes, or an external form when it is implemented outside the company such as buying up glass package or scrap metal by other entities.

Because the strategies based on static models did not improve the quality of environment, a new dynamic model was prepared. Time became an extremely important factor of environmental protection. Scientific prognosis and environmental simulations allow us to conclude that there is a menace to the environment and it is necessary to start preventive actions. Within the model companies intend to reduce the wastes or prevent them from production.

Implementing the waste reduction strategy, the companies use some active tools to reduce the wastes which are the result of production process. This strategy is an antidote to the Cleaner Production Strategy. It is not always possible to avoid producing the wastes because the pollutants are by-products of many production processes, and their total reduction is impossible at given stage of company development and know-how. The waste source reduction is the key feature of this strategy.

The latest and model environmental strategy is the Cleaner Production Strategy which appeared in the nineties of the 20th century. The idea is based on waste source reduction in a concrete production process (manufacture). The prevention of waste production is connected with saving the use of energy; therefore it has a specific economic reflection. According to the UNEP, the CP definition emphasizes that the strategy is active, constant and preventive, and it is also a set of integrated activities into the environmental protection domain. It consists of products, services and processes (table 2). Its realization lessens the risk of environmental pollution and has a positive influence on people's health condition and the quality of environment. Moreover, the CP strategy develops a responsible enterprise (win - win project management). A businessman foresees the environmental effects of actions and minimizes or eliminates negative actions for the environment.

Table 2. Bases of Cleaner Production Strategy (5)

Cleaner Production Strategy is:	CP Strategy is applied to:	CP Strategy is directed at:	CP Strategy brings effects to:
continuous, priority, preventive, integrated, voluntary, active, dynamic	production companies, service companies, profit organization, non-profit organization	Prevention from producing pollutants, rational management of environmental resources, continuous minimization of discharges into environment, additional economic effects.	people, environment, surroundings of economic entity

Introducing the environmental management, each company should analysis the surroundings and internal potential which is a basis for a choice of a specified action strategy. Considering the level of competence with reference to the key-field of action, appropriate state of financial resources, market position, possibility of production potential, independence from the pression of competition, level of technological development and quality (life-cycle of technology), costs supremacy, experience in environmental management, company is able to act more or less passive, defensive or offensive in the market. The degree of company activity in environmental protection area distinguishes following environmental strategies (8):

- ✚ strategy of passive activities (otherwise named conservative strategy) consists of observing indispensable environmental requirements, regulations, ecological norms in order to avoid penal sanctions and a loss of good marketing image,
- ✚ strategy of defensive activities - the purpose is a gradual removal of products from the market which do not follow the ecological standards. It is also a partial resignation of outdated technologies polluting the environment excessively and a partial proecological modification of production processes, and improvement of production organization. Basis of the strategy is to prepare the base for cleaner technology, hence this strategy is also known as a technological strategy,
- ✚ strategy of innovative activities which is a development of a technological strategy, but can also be an innovative strategy directed at eco – efficiency of production processes and eco - products, such as search and implementation of new wasteless or quasiwasteless technologies, production of closed production cycles, creation of products that are environment friendly, utilization of wastes as secondary source materials,
- ✚ strategy of offensive activities (otherwise named planning strategy according to principles of Cleaner Production Strategy) is directed at cleaner production, eco - products development, proecological structure and style of management, proecological marketing, ecological culture of organization. The purpose is to prevent the waste production (source reduction) or its minimization. The innovations introduced within this strategy concern organizational, objective, functional and structural activities. The strategy may be pioneer – the company is originator of new ideas, or adaptable (imitative) such as purchase of licenses, patents.

There is a diversification of environmental strategies into particular sectors of the market (Table 3). The innovative strategies predominate into the motorization industries and durable goods, the offensive strategies into food sector, and the aspects of defensive strategies are present at different industries, such as: chemical, metallurgical or coal.

Table 3. Market environmental strategies – market segment (4, 6)

No.	Name of the strategy		Exemplary field of application
1	Passive (neutral)	Conservative	Institutions and non-profit organizations (budget sphere)
2	Defensive	Technological	Chemical, metallurgical and coal industries.
3	Innovative	Eco-technological	Durable goods, automotive industry, manufactured goods,
4	Offensive	Planning strategy –Cleaner Production Strategy	Food industry, consumer goods, manufactured goods industry.

4. CONCLUSIONS

The passive strategies, which are a special sort of environmental care strategies, base on removing negative impact on the environment, caused by business entities activity. It was proven that these kinds of strategies were ineffective and the quality of environment improved only a little. There were some new solutions which give consideration to the main challenges of the 21st century. In the conference in RIO'92, some new bases of proecological education were created. The managers are to think of and foresee the negative effects of different activities, and to make the ecological effects. The Cleaner Production strategy became the basis of the idea which is to foresee the effects of economic activity and prevent the waste production at source. Modern companies put into practice the waste minimization strategy or the strategy preventing the waste production, they introduce technological and product innovations intensify the operating range within the offensive market strategy. Entering the future, the companies should have elaborated the environmental strategy which is the most important element in the functioning of organization. It is a set of concrete decisions, an idea of resolving particular problems and a choice of actions which are to gain the established objectives in harmony with nature and its environment.

The environmental strategies are changed and in this paper only two classifications were presented. More over development of theory of environmental knowledge and practice of business causes that new strategies appear and new criteria of their classification are formed. Enterprises using the Cycle of Deming continue improvement in all areas of their activities. So, in the future new solutions can be created.

REFERENCES

- (1.) SHARMA H.D., REDDY K.R.: Geo-environmental Engineering: Site Remediation, Waste Containment and Emerging Waste Management Technologies, J. Wiley & Sons, INC.,2004, p. 630-632
- (2.) PETRICK K., RENATE EGGERT (Hrg.): Umwelt- und Qualitätsmanagementsysteme, Eine gemeinsame Herausforderung, Verlag Hanser Fachbuch 2002, p. 27-32
- (3.) NOWAK. Z., Zarządzanie środowiskiem (Environmental management), ed. Politechnika Śląska, Gliwice 2001 cz.1, 104 – 111
- (4.) I. KULAS I., KUSZTAL J., Zarządzanie środowiskiem w przedsiębiorstwie (Environmental management in enterprise), ed. AE, Katowice 2000, p. 57-58
- (5.) GAJDZIK B., *Ekonomika i Organizacja Przedsiębiorstwa* (in press –in Polish)
- (6.) GAJDZIK B., WYCISLIK A.: Wybrane aspekty ochrony środowiska i zarządzania środowiskowego (Selected aspects of environment protection and environmental management), ed. Politechnika Śląska, Gliwice 2006 (in press).
- (7.) International Declaration CP-UNEP, 1998
- (8.) POSKROBKO B.: Programowanie i planowanie przedsięwzięć ochronnych w przedsiębiorstwie oraz gminie (Programming and planning of projects protective in enterprise and in parish), *Ekonomika ochrony środowiska naturalnego. Wybrane problemy* (Economics of natural environment protection. Selected problems) ESEŚIZN. *Ekonomia i Środowisko* No 14/1993 AE, Kraków 1993