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THE TRIAD OF GOVERNMENT, FIRMS, AND CONSUMERS ON THE MARKET OF ENVIRONMENTAL PRODUCTS

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Abstract

The aim of this study is to describe some main features of the market of environment-friendly products and technologies. Besides a general view on the field, the study highlights special market characteristics that firms need to handle in order to achieve success. The market situation, and effects caused by the actors of the market – the government, the firms, and the customers – are discussed in details. This way, the tools available for the government, the possible strategies and performances of firms, and the levels of environmental consciousness of customers (and the derived 'green' demand) are presented. The possible forms of environmental behaviour of customers and firms are also described.

At the end, the author tries to construct a symbolic balance of the market of environment-friendly products with the existing relationships and interactions.

Keywords: environmental market, green market, environmental marketing, green marketing, green product, environment-friendly product.

1. Introduction

Nowadays, environmental protection is a particularly exposed problem. The document of the Club of Rome '*The limits to growth*' revealed the destructive environmental impacts of unlimited economic growth[1]. The international cooperation in this field started with the first United Nations Conference on the Human Environment and since that time people's environmental awareness has been strengthened by the World Environment Day.

Many companies handle environmental requirements by means of implementing and operating environmental management systems, such as the ISO 14001 standards. To produce environment-friendly – so called green – products the firms' control of the processes is necessary but not sufficient. Besides, the processes during the production, during the use and after the use of the product must be taken into consideration. In order to produce real green products the processes related to the products must be environmentally harmless similarly to the other processes of the firms. In this way, companies producing green products and handling the

[1] For further information about the Club of Rome see: http://www.clubofrome.org

environment at a strategic level should adopt the concept of environmental marketing. Another goal of these firms is to facilitate the demand for green products by increasing the weight of environmental factors in consumers' decision making.

The aim of this study is to present the main features of green products and their market, the actors of this market, as well as to demonstrate the pressures on companies and the opportunities rooted in the supply of green products/services[2]

2. Green Products and Environmental Marketing

2.1. The Marketing Concept of Green Products

The marketing literature uses several denominations for the marketing activity which considers environmental aspects: ecological marketing, environmental marketing, green marketing, and sustainable marketing. The term environmental marketing describes the marketing activity that considers the requirements of the natural environment. These requirements can be related to the product's features or to systems, directives, or processes of the firm that produces and/or transfers products to the customers. Thus, environmental marketing is a marketing concept, in which the reduction and avoidance of stress on the environment have an exposed role during the satisfaction of consumer needs and in achieving the aims of the firm (PARKASH, [7]).

Prestige consumption, reduction of product lifetime in order to increase sales returns, and 'overpackaging' presents the contradiction between maximizing consumption and environmentalism. To demonstrate this discrepancy OTTMAN [8] asserts that the expression 'green consumer' which describes the 'target' of environmental marketing is an oxymoron[3], since consumption involves the use of substantial natural resources and also the production of waste. The 'environmentally conscious consumer' expression describes the main goal much better: to build up consumption or a consumption-culture in which products with lower direct and indirect stress on the environment have higher preference. In this context the loads caused by the product itself are considered to be direct stress, and all loads caused by the production process of the product are considered to be indirect stress. As VÁGÁSI et al., [13] asserts, late conceptions of marketing have integrated social responsibility as well.

2.2. How does 'Environment-Friendliness' Change?

The average technological level is usually not sufficient for producing green products. Moreover, this level of the technology cannot be identified by exact parameters: due to the continuous technological development it keeps changing (improving) as time elapses. After a lapse of some years today's environment-friendly technology can become 'average technology', coming into general use. The critical

[2] In the study concept of product refers to products and services, as well.

[3] Oxymoron means contradiction in itself

parameters affecting environmental performance of the product also keep improving, thanks to research and development activity. The introduction of a new method, a new technology, a new material etc. can abolish existing environmental faults. The different levels of 'environment-friendliness' (or 'greenness') of products and technologies {T} are represented on *Fig. 1a*, considering the obsolescence by elapse time (or 'inflation') and also the improvement on account of R&D activities.

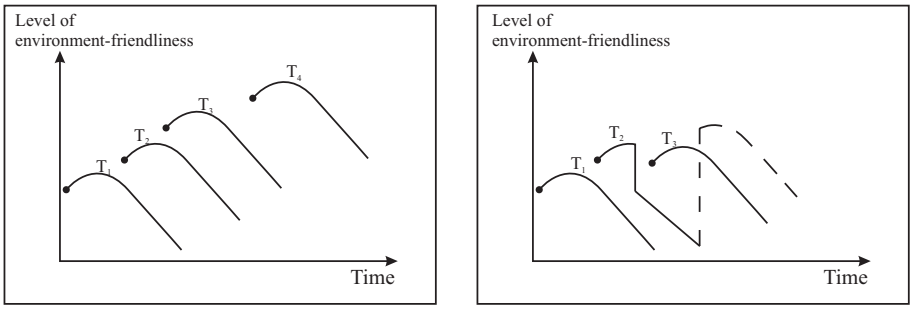

Fig. 1. The level of environment-friendliness by elapse of time (*Source:* self constructed)

The development of knowledge can also induce the continuous change. The environmental harm caused by a product or technology previously considered to be harmless may prove true. In extreme cases, this can lead this product or technology to grade be dangerous. This phenomenon may be included in the figure (see *Fig. 1b*).

It is necessary to mention the rare cases when a material – or perhaps technology – primarily pronounced dangerous or overgone later becomes verified to be environment-friendly. This is represented in *Fig. 1b* by broken line.

For the declaration of environment-friendliness of a product it is needed to asses how it affects the environment during its production, use and after the use phase. The Life Cycle Analysis (LCA) is a method to identify in all phases the stresses caused on the environment, and thus the 'entire' effect of the product on the environment.

3. Particularities of the Market of Green Products

The market of green products is very similar to the market of 'traditional' goods, but some particular phenomena need to be taken into consideration. These come from the substantial information-asymmetry, risk of opportunism, significant endogenous and exogenous risks, and tendency to free ride (KARAJZ, [2]).

3.1. Information-Asymmetry

Information-asymmetry means that consumers or sellers have an advantage over the others, caused by the disproportionate information distribution. In the case of the

green market, the lack of information characterizes both the demand and supply side. This is increased by the limited information-perceptive and information-processor ability of the actors of the market.

Usually, the manufacturer has enough information about the product and the processes of manufacturing, but has insufficient information about the consumers: the segments and their demands. The use of incorrect communication channel and the overly expensive information delivery may cause further inconveniences. On the other side, consumers have less information on the processes of production and on the product itself, but possess more information about the moral judgement of firms.

The adequate identification of the extent to which a product is green represents a risk for the consumer, as sources of information are unknown, the information-content of messages is low, and the reliability of information received may also be low. Even if adequate information gets to the consumer, further barriers are present. 'Lack of inner knowledge' means that consumer does not have knowledge on environmental consciousness. When the consumer has knowledge on it but he/she does not take it into account in the decision-making process is called short-term planning horizon. In case of low information processing capacity the consumer wants to take environmental information into account in the decision-making, but cannot suitably process the available information. Additional barriers are finding supply channels, and also high purchase costs.

The product can help in this information process; for example, the users' manual can give reliable information about the environmental effects of a product. Notwithstanding, there is another considerable factor: the more complex and complicated a product, the more inadequate it is to transfer information effectively, as consumers have difficulty in understanding it.

3.2. Opportunism

The conscious use of information-asymmetry in order to gain competitive advantage over competitive firms by causing them disadvantage is called opportunism. Exaggerated, misleading promotion, and imitated ecological performance are good examples for it.

A firm which is less committed to environmentalism and having short term strategy, can use some 'marketing tricks' in order to mislead consumers by presenting the firm's or its products' non-existing green features (e.g. by a self-constructed 'eco label'). In the short run, this action does not have any, or has only positive effects on sale quantity: consumer's decision making without considering the environmental performance of products does not ignore green products. However, other consumers might decide to purchase this product because of its alleged green features. This action represents minimal effort to the company and prospectively causes an increase in the income – however, only in the short run. Nevertheless, when the real environmental effects of the product or its production technology become known, the consumers' confidence is abated, and a significant decrease of

the income can be experienced. This way, the above strategy is not recommended for those companies that have a long term (i.e. marketing oriented) strategy.

Several examples might be cited which demonstrate this effect. However, the consumers' disappointment can be remedied by the already created good reputation and an adequate communication. An example for this comes from the last decade, when a 'greenlabelled' windscreen cleaner was sold in the shops of a petrol station chain in Hungary. The product, however, had to be withdrawn because its ingredients were harmful for the environment. The company voiced its indignation by pointing to the long term success of the product in developed (West-) European countries. Only few consumers knew that the similarity of the products sold in Hungary and in West-Europe came only from the packaging: the content of them was totally different. This case and similar ones might lead to the general loss of confidence in green information for consumers.

According to another theory (ROMÁN, [9]) a group of consumers think that green products are of poor quality; the communication of good environmental performance of the product among these people results a decrease in the income. This way, there may be companies in Hungary which, in order to avoid the negative reaction of the market, do not even mark the acquired environmental qualifications. Nevertheless, the number of these 'doubters' may be decreasing as their opinion is correlated with low standard of living and high price sensitivity. Further explanations can be mentioned to explain why consumers can associate good environmental performance with poor functional performance. In the early 90s, several green products existed with lower functional performance, for example, fit-for-nothing "bio"-detergents, incapable even to wipe off specks.

3.3. Endogenous and Exogenous Risks

Risks can be classified as being either endogenous or exogenous by their origins. The emergence of endogenous risks depends on the interaction of the participants present on the market. The main reason for the emergence of this kind of risks is the asymmetric distribution of information and the incomplete communication. Examples for this are the retained information, the information containing only the part of reality, and opportunistic behaviour. Exogenous risks mean equal load on the actors of the market and are independent on them. The use of a newly developed material and development of the values of society are examples for this kind of risks.

3.4. Tendency to Free Ride

Every production-consumption activity has some load on the environment (uses natural resources and produces waste). Still, free riders are present (FULLER, [1]): these are on the one hand companies and consumers which consider the environmental stresses caused by themselves minimal, and so consider environmental questions unnecessary. On the other hand there are companies aware of the caused environ-

mental stresses (that can be both legal and illegal) but are not willing to deal with environmentalism.

These approaches need to be altered: companies have to offer solutions to satisfy consumer demand while maintaining the quality of the environment. All actors of the market have to manage environmental challenges, not only companies and consumers, but also countries and societies as well: developed countries cannot exhaust the resources of undeveloped ones. The maintenance of the quality of the environment is everyone's social-moral responsibility.

4. Actors of Environmental Market and Their Role

Until this point, special features of the market of green products compared to the market of 'traditional' products were highlighted. Now the role of the actors of the market is to be discussed. The following sections deal with the analysis of the role of the government, the consumers and the companies, from the companies' point of view.

4.1. The Role of the Government

Based on the definition of environmental economics, the optimal level of the protection of the environment can be achieved by internalizing external economic effects (externalities[4]). This way they become part of the market, and their prices are built into the price of the product. Without this, the marginal social cost is higher than the marginal private cost and the difference devolves on the government (in fact on the tax-payers) – with the presumption of the equality of pollution export and import.

The government can realize its environmental policy objectives by its tools, classified into three main groups (SZLÁVIK, [10]).

Direct regulation

When the government expects a preferred behaviour from the actors of the market, it creates laws and decrees (command-and-control). Polluters have no choice, they have to execute these 'commands' in order to avoid sanctions; in this case it is necessary to run a control-system. Commands can be applied to the pollutant activity, or materials and products used, or also can be restriction or prohibition of emission of pollutant(s), or the restriction of specified activity for a specified period of time on a specified region.

[4]By definition (Mishan, [5], p. 137), externality is the accidental side-effect of a firm's or person's legal activity on the profit or welfare of another person or company.

Economic instruments

The main function of economic instruments is to create economic interest and stimulate better environmental performance in a cost-efficient way. This can be achieved by creating the preference of environmentalism by financial means (introduction of fees, levies, charges and taxes, tax-differentiation, or guaranteeing financial support). The effect of economic instruments can be felt in longer term than those of the direct ones, but the actors of the market prefer economic instruments, as application of these leaves the possibility of choice for them.

Several tools are available in this group. *Environmental charges* and taxes can be seen as payable price of the pollution caused, by what pollution becomes part of private costs. This way, the charges and taxes have incentive and redistributive effects. Examples are the charges on emissions or effluent charges – payable as compensation for the pollution caused –, the product charges or taxes payable for specified products having environmental risk, the Deposit-Refund Systems, which deposit paid for potential polluter products is returned when the product is taken back to a determined place, and also the user charges payable for handling polluting materials in public utility (administrative services included).

Tradable permits are related to the concept of Bubble-Policy, when the maximum amount of emission is distributed among the polluters (for example in a region). The amount of pollution not caused (but allotted to a particular polluter) can be sold. Related concepts are Emission Banking, the possibility for 'storing' the part of pollution under the allotted amount, Emission Offset, when in a polluted region new investment can only be realized if the total amount of the pollution is decreased, and Emission Netting, which allows simplified environmental licensing process if the pollution 'mini-bubble' related to the firm is not increasing by a new investment.

The tools of *Enforcement incentives* have rather juristic than economic characteristics and can be classified into two groups: non-performance fee, payable when non-performance of a norm occurred, and performance bail, when the amount of money paid is given back in case of adequate performance.

Subsidies are various forms of financial support by which redistribution can be achieved. The main goal is to decrease the pollution of the future. Two practical solutions are known: one-time payment is non-refundable financial support in order to decrease pollution in the future, and preferential loan is a loan with reduced rate of interest.

Suasive instruments (Information instrument)

Different ways of involving environmental consciousness and responsibility in personal decision-making are classified in this category. If firms (or trade corporations) undertake environmental developments fixed in a contract with the government (or any authority), and the government stands for no more obligation than

the agrrements described in the contract is called ‘voluntary’ agreements. Environmental (third-party) insurance is used to alleviate the firm’s risks when instituting consumption-decreasing environmental measures. Running data banks and training, awareness raising, etc. are classified in this group as well.

A more detailed classification (mainly by further separation of economic instruments) is also available (KÓSI–VALKÓ, [4]), which has an additional category, ‘*Environmental management techniques and methods*’. The importance of the role of the government is ‘decreasing’ from direct regulation to suasive instruments and it is the minimal in the case of this group. While environmental impact assessments (EIA) and environmental-audits are obligatory for certain activities, running an environmental management system (EMS) and eco-labelling are voluntary, for which government provides indispensable organizational, legal, and other backgrounds. This category contains corporate social responsibility (CSR), environmental marketing, eco-sponsoring, eco-design, environmental life-cycle assessment (LCA), and many other concepts, which are voluntary but can be supported (and encouraged) by the government.

With the tools discussed above, the goal of the Government is to drive actors of the market in such a way which minimizes stresses on the environment, and to redirect costs of the pollution to the participants of the transaction. The importance of this latter is highlighted by the fact that the private costs of the individual and the firm are easy to appraise, as opposed to the social cost. Without any intervention, pollution is an externality – the marginal social cost is higher than marginal private cost (VÁGÁSI, [12]).

To sum it up, we can say that the government, in order to achieve its goals, exerts an influence on the actors of the market – mainly on firms.

4.2. The Role of Consumers

Besides the impact of the government on the firms, companies are also affected by consumer requirements. Demand for environment-friendly products appears among environmental conscious consumers. For them, the quality of the environment is important, which is taken into consideration in their purchase decision, contrarily to those, who ignore any environmental factor. Firms should take segments formed by the level of consumers’ environmental consciousness into account in their decision making process.

Different Segments of Consumers

Based on a study performed in the United States levels of consumer’s environmental consciousness were identified (OTTMAN, [8] pp. 30–33). *True-blue greens* are firmly environmentally conscious persons, exhibiting this in their actions. They crisply refuse products of firms having doubtful environmental performance and give preference to environment-friendly products. *Greenback greens* are the best educated and youngest people who support environmentalism with money rather

than with their time or with any action. These are wealthy people, ready to pay extra cost for environment-friendly products. *Sprouts* want pro-environmental legislation and do not consider significant the impact of an individual's (thus, their own) actions on the environment. They work for the environment but hesitate when deciding between 'environmental' and 'economical'. They are well educated and relatively affluent. In the view of *grousers* the solution of environmental problems is the task of the companies rather than of consumers. They consider environment-friendly products more expensive and even, that these do not work as well as their 'ordinary' counterparts. In relation to environmentalism, they consider themselves confused and uninformed. The members of this segment are slightly below average educated and of income. *Basic browns* are absolutely not interested in environmentalism. They are even not willing to recycle bottles or cans. Members are blue-collar workers with low income.

A study performed in Hungary in 2002 (MOLNÁR), points to several relevant statements. According to it, 60 percent of the Hungarian population would support any environmental organization, but only half of them *would* be willing to give financial support for them. The more educated an individual the more willing he is to support such an organization. Almost two thirds of the population consider environmental actions important and approve its goals. However, only about one out of nine people takes part in them. Almost every fifth person presumes that these environmental actions eventuate nothing and approximately one in forty people considers their goals irrelevant. Hardly one percent of the population explicitly opposes environmental actions and they are at odds even with their goals. Therewith, a woman's participation is almost twice as likely as a man's. Men are also more sceptics in this issue. The willingness to support these actions actively (taking part) or passively ('consorting with it', but not taking part) is in direct link with the level of education.

The patterns of environmental behaviour were studied in two main fields: (1) related to income (saving energy, water, etc.), and (2) related to setting (handling waste, use of packaging, etc.). According to the results, the 'environmentalism with economical benefit' is more likely than 'environmentalism depending only on setting'. 21 percent of the population purchase bio products and 51 percent claim to prefer environment-friendly ones, but 51 percent will purchase a non-green product if it is cheaper. The level of education has more impact on environmental behaviour than age or sex: the higher the level of education the more likely the environmental behaviour is. We can observe a difference between the well-communicated and not clearly communicated environmental behaviour patterns. In the early 1990s, slogans about repairing the dripping tap had their effects on the entire population; there is no difference in reacting to this problem among the age groups. Turning off the lights, however, is more often done in the 60+ age group. People in their 30s are the most likely to handle dangerous waste adequately and to prefer environment-friendly products. The youngest age group (under 30) is the most likely to refuse free shopping bags and to buy drinks in recyclable bottles.

As a consequence, we can state, that price-sensitivity among elderly people is the highest (which perhaps can be explained by their low income). We can also

assert, that people in their 30s seem to be the most environmentally conscious, but personal comfort is ahead of the environment (the use of public transportation is the least likely, while choosing recyclable bottles is the most likely in this segment). It is important to mention that this study does not highlight the causes of avoiding public transport, which can be comfort (journey with children or big packages), time-saving, and prestige, as well. This could be the base for further research. These people might even have a compensatory behaviour (like paying the high extra cost for more expensive environment-friendly products, or giving more time or money for any environmental action) to compensate – only for themselves – the harmful effects on the environment caused by using cars instead of public transport.

Features of Environmental Behaviour

While in the previous section, levels of environmental consciousness were discussed, this section is dedicated to introduce the various forms of environmental behaviour. VÁGÁSI [12] p. 41 describes five 'protector groups'. *Protectors of animal rights* refuse every kind of harm to animals. They do not purchase products which have been tested on animals, and either do not consume meat at all or do not consume meat "produced" by artificial methods – like crammed birds. *Protectors of the natural environment* refuse all products containing environmentally harmful or risky materials. They refuse refrigerators with CFC and reject PVC-based wrapping materials. *Protectors of the natural resources* prefer products made of durable or recyclable materials (e.g. in the case of furniture) and refuse products whose production or use requires large amounts of energy (e.g. plants grown in greenhouses, or cars with high fuel-consumption). *Health protectors* refuse all food, which contain artificial ingredients (meat of animals fed with hormonal nutritive, gene-manipulated or insecticide-handled plants), and also, they refuse all other products, which are harmful to health in any way – like printers emitting ozone. *Protectors of natural materials, traditional tastes and foods*, is more and more popular among 'less careful' consumers.

Consumers – Getting Green

Consumer behaviour can change or can be changed: traditional consumer behaviour can be altered by an environmental conscious one. Considering the model of the process of purchase decision, the motive of the change can be internal or external (VÁGÁSI, [12]). It is external, if any of the factors of external environment or marketing tools stimulates the change of attitude of the consumer. This can be performed without any change in the consumer's characteristics. Change in consumer's personal characteristics is internal motive.

Four stages in the transition of the consumer behaviour change can be distinguished, that is important for firms in planning programs to stimulate change. The stages are (1) trying out and experiencing of product advantages, (2) developing positive attitude, (3) preferring environment-friendly products, and (4) environmental conscious behaviour (in every purchase).

Consumer and the Concept of 'Environmental-Friendliness'

Consumers declare a product environment-friendly based on the available information, which should be unequivocal, authentic, and comparable. (Nevertheless, the environment-friendly concept, explained earlier in this study, is relative and doubtful.) Usually, only a few, or few authentic pieces of information are available to the consumer regarding the entire life cycle of products. Actualities and problems appearing in mass communication have relevant effects on their evaluation.

From the customers' point of view, there are three main stages of the product life cycle: before, during and after the act of consumption (FULLER [1] p. 51). The denomination according to the chronology of these stages can be Pre-Use, Use and Post-Use Phase. The *Pre-Use Phase* involves the R&D, planning, production, the formation of marketing-mix with its components, etc. During the *Use Phase* consumers have the most profound interest and contact with the product, thus, they possess the most authentic information about this stage. (This way, the control of information obtained before the purchase can be effective.) In the *Post-Use Phase* the possibility of recycling (and its levels: the material is recyclable or only the energy by burning can be utilized) becomes known for consumers. If recycling is impossible, the quality of waste (or the level of danger of it) affects the level of environment-friendliness.

Furthermore, the environmental effects of a product can be classified (FULLER [1] p. 131) by their sources. *Product–specific effects* contain all environmental harms caused by the product itself. The concept of the product is broader at this point than the physical reality during the consumption, as in this case the half-made, and 'pre-products' are part of it. In other words, a product is anything which is "moving down" on the supply chain. The rest of the pollution is related to the processes/technology that develops the product and moves it from cradle to cradle through several consumption phases, and are called *process(technology)–specific effects.*

Taking the above two classifications into consideration, we can assert, that in the *Pre-Use Phase,* the process-specific effects have dominant role, while the product-specific ones also are at present (e.g. by the used material). In some cases, like custom-design, consumers can have a contact and interest at this phase, but usually they do not have any. In the *Use Phase,* the features of the products are the most relevant ones, as the interest of the consumers is the highest in this phase. Consumers are the most likely to collect information about the environmental effects of the product in this phase, what can be reasoned by several examples, like energy-saving and stresses on the environment and on health. In the *Post-Use Phase,* the consumer usually has more interest than in the *Pre-Use-Phase* but less than in the *Use Phase*. (The effects of external factors (e.g. mass-communication) mentioned above are observable in this case, as the topic of handling waste appears usually, increasing the likelihood of customer's interest in the 'destiny' of the product.) In this phase, both the technology-specific and product-specific features are important. The former because of the possibility and the method of recycling, the latter because of the features of the material made of.

4.3. Role and Opportunities of Firms

The obligations of the government work as 'pushing' forces, opportunities inherent in customer's demand act as "pulling" forces on firms, in order to take environmental arrangements into account. The marketing strategy of marketing oriented firms is based on these former forces.

Environmental Marketing Strategies

The environmental marketing strategy determines solutions in order to harmonize environmental aspects. Firms' philosophy, opportunities and risks have to be taken into account when the strategy is shaping. Environmental marketing strategies can be identified from both of the point of view of environmental benefits and environmental risks related to the firm's decisions. These are also named as ecological portfolio or eco-portfolio. The literature classifies firms into five groups according to their environmental strategies, which are systematized in *Fig. 2*.

In the case of *innovative environmental strategy (proactive company behaviour)* firms handle potential environmental benefits at a strategic level. The high environmental risks are considered as 'social challenges', requiring long term solution, and also potential environmental benefits are taken as strategic aspects. The products, technologies, and all activities of the firm are assessed by environmental considerations and the Environmental Research and Development becomes a key factor in achieving the long term success. The high costs of introductory phase are compensated by the improving image of the firm, by the positive attitude of the government, banks and insurance companies towards the firm, by the improving inner image of the firm and also workers' courage for innovation, and by the increasing market share – caused mainly by intensive R&D activity.

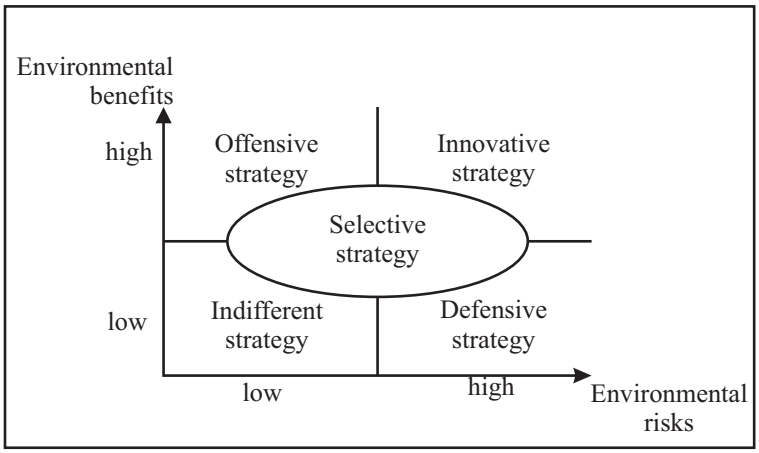

Fig. 2. Environmental strategies (*Source*: KÓSI–VALKÓ [4], p. 138)

When environmental risks are low and the possible benefits are high, firms following o*ffensive environmental strategy (active company behaviour)* are continuously monitoring the environmental market. Since the risks are low, getting adapted to environmental requirements is relatively cheap for them; they often take voluntary agreements for acquiring competitive advantage. In this case, to minimize risks is not necessary any more (for example by co-operation with other companies). Inherent in the pioneer role this strategy has notable risks, which are: derivated economic risks – like the change of external environment (e.g. regulation) in unexpected ways or at unexpected rates –; the risks inherent in confrontation with competitors; and also high social prestige-risk.

The companies in a situation where the possible benefits and risks both are low have minimal interest in ecology: they are 'outer observers' of the environmental market and thus, they have *indifferent environmental strategy (passive company behaviour)*. Owing to low risks, the environmental demands of customers can be satisfied with low cost (e.g. by sponsoring) – which can attribute to the appreciation of the firm – and it is also easy to conform to radical changes in environmental legislations.

Whereas the environmental risks are high and the possible benefits are low, the main environmental goal of firms which follow *defensive environmental strategy (reactive company behaviour)* is to minimize all environmental actions. They fulfil the minimal legal requirements, continuously debating with the authorities. These firms are also characterized by the adherence to their existing product profile. Their decisions on technology developments are rooted in economic considerations, and certainly not in environmental ones. All these raise environmental risks, causing increase in market risks, and lead to the loss of image: both on the customers' and the authority's side. These firms can achieve short-term success by one-shot, and limited product or technology developments, and have no chance for long term, reverberating success.

Firms usually choose strategy depending on the concrete situation, its benefits and risks. This is called s*elective environmental strategy (situation depending company behaviour)*. The decision is made based upon the actual internal and external factors.

Environmental Product Strategies

Based on the product quality and the environmental consciousness of consumers – which are the determining factors for marketing oriented firms –, four environmental product strategies can be identified which are presented in *Fig. 3*.

The group of '*prestige green*' is characterized by high quality products at a high price. No pressure exists on the firm to alter the conventional product with an environmental one either from the legislative environment or from the customer side. Since the target group is willing to pay high price, the extra costs caused by the environmental actions can be covered. Customers possess more social sensibility than environmental consciousness. Only firms with a high prestige can afford to

position into this segment, such as the leader telecommunication companies, for instance AT&T.

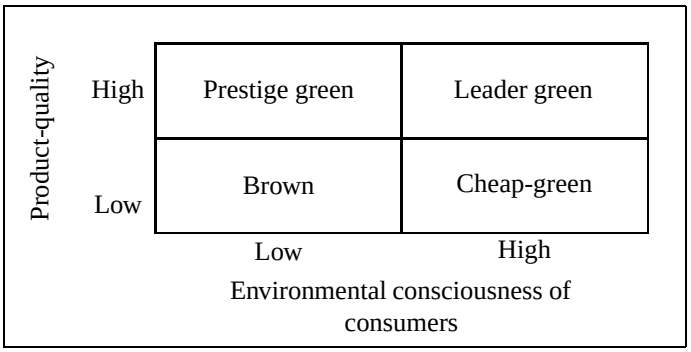

Fig. 3. Environmental Product Strategies (*Source*: CSUTORA (2001), cit. in SZOLNOKINÉ KARKUS [11])

The motivation of '*leader greens*' is rooted in the customers' environmental policy demands. The leading position of these companies and their customers' high willingness to pay allow them to cover environmental expenses. As both opportunities and demands are important for these firms, environmental topics should be integrated at a strategic level. The Toyota car factory should be mentioned as an example, which was the first in producing hybrid-driven cars and which implements a wide range of environmental marketing tools.

Customers of the firms in the group of '*cheap greens'* have some environmental sensitivity: they expect green products and organizational behaviour whereas their price sensitivity is high; they will not or cannot pay extra costs. This cost-price contrast can be dissolved by products having some environmental features, but the most modern solutions are generally not applied. These firms are mostly reactive than proactive in character; their main goal is to communicate their environmental commitment to the customers.

The main goal of '*brown*' companies is to minimize costs that inhibit environmental expenditures. It is made in order to satisfy demands of customers with low buying power.

Firms – Getting Green

The goal of the firms should be making optimal decisions so as to satisfy market demands in a more and more environment friendly way, which goal can be expressed with a play on words 'to achieve EcoLogic solution'. This can occur in three ways as follows (PARKASH, [7] p. 286):

(1) *Implementing value-addition process (firm level)*, when the stress on the environment can be diminished by redesigning processes or eliminating some of them. It is also possible by modifying the actual technology or introducing a new one.
(2) *Implementing management systems (firm level)*, in which, in order to reduce environmental stresses, new management system(s) can be introduced – together with its monitoring and evaluating systems, which facilitate measurement, explanation and verification of results. (Environmental Management Systems are classified in this group.)
(3) *Developing products (product level)*, where the 6 'Re'-solutions are available. *Repair* means reparability, when smaller faults can be corrected; *Recondition* is to renew the product by significantly overhauling it; in case of *Remanufacture* the parts of an old product can be used during the production of a new one. The product build-up should allow *Reuse* – use over several stages –, by *Recycle* the product becomes raw material of a new product, and *Reduce* means decreased quantity of the raw material.

5. Summary: the Balance on Environmental Market

The firms' decision making is affected by two factors: on the one hand, the government affects a 'pushing force', on the other hand, the 'pulling force' of customer demand determines the firms' behaviour. Moreover, the competitor firms also have an influence, which can be classified as either a 'pushing' or a 'pulling' force; the former, when the firm reacts to a situation created by pioneer companies, the latter, when it satisfies new/modified customer demands – demands modified by the activities of competitors.

All these generate a 'field of force', in which 'greening' of the market is affected by different tools (obligations and opportunities) of the participants.

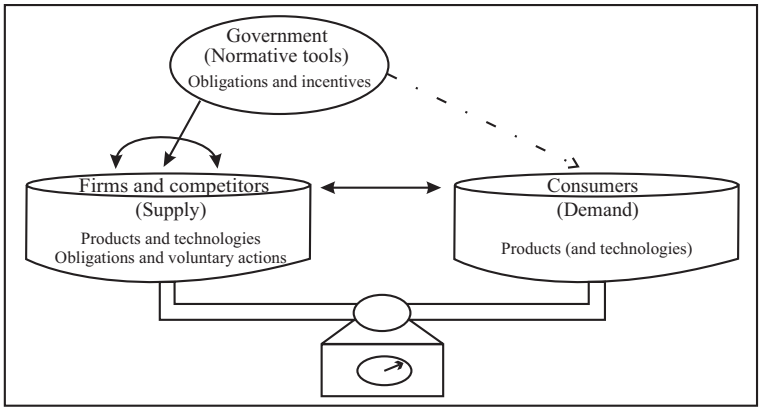

Fig. 4. The balance of environmental market (*Source*: self constructed)

In *Fig. 4*, the field of force is represented by a balance, in which the government is over the market (over the balance) with its normative tools. One balance-pan is the supply side, in which firms with their products and technologies are at present. Their accomplishments are partly obligations and partly voluntary actions, performed beyond the pressure of the government or the effects of competitors. The other balance-pan is the demand side with the customer needs – primarily for products, but technologies cannot be eliminated. The balance's beam symbolizes the interaction between demand and supply, so this represents all features characteristic especially for the market of environment-friendly products.

This system is not a stable but a dynamic one which changes according to the interactions indicated by the arrows: they push forward (or – hopefully not – backward) the participants along their 'green ways'. In this way, both sides of the balance will contain more and more 'greenness' because more and more environmental requirements are put on both sides by the development of environmental consciousness. The 'total mass' of the balance indicates the level of the development of an environmental market, showing the total amount of the environmental measures. Figuratively this can be measured by determining the weight at the base of the balance.

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