

## Green Marketing and its Use in a Transport Company

Margareta Nadanyiova<sup>1\*</sup>

<sup>1</sup>*University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitná 1, 010 26 Zilina, Slovak Republic; E-mail: [margareta.nadanyiova@fpedas.uniza.sk](mailto:margareta.nadanyiova@fpedas.uniza.sk)*

**\*Corresponding Author:** Margareta Nadanyiova

**Abstract:** Green marketing as a part of environmental management has become a new marketing philosophy of many companies. It includes more than just a simple building of corporate image but it also becomes a modern idea of the enforcement of actual environmental trends to a broad spectrum of business activities. The field of action of green marketing tools is relatively extensive, starting with the protection of environment, production and sale of products and services with ecological conditions and requirements, through the final consumption of environmentally friendly products, which affects the quality of life and health of the whole society. The aim of the article includes to provide a literature review on the issue from several foreign and domestic authors. By using methods of description, comparison, deduction, induction, it discusses the essence of a green marketing and also analyses its use in a Slovak public transport company. Based on this, in discussion are indicated some proposals to improve the effectivity and visibility of these activities in the public transport company and thus ensure the image of the company as more environmental friendly. This measures help to improve the positive perception of the company by customers and the general public.

**Keywords:** Green marketing, transport company, urban public transport, ecological behavior

### 1. Introduction

Currently, the topic of sustainable development belongs among the most up-to-date but also sensitive issues. The general public is interested in addressing issues of environmental nature where green marketing also plays its important role. This new trend presents many opportunities but also threats if it is ignored by businesses [1]. By failing to meet customer requirements, businesses can threaten their position on the market. Therefore, in meeting customer needs companies should include not only their own prosperity but also the welfare of the entire society in their strategies.

It is by applying the concept of green marketing that businesses contribute to environmental protection. This direction may mean a competitive advantage for companies, improve the image, attract new customers and of course the increase in profit.

## **2. Literature Review**

Green marketing is an important subject of academic research and is deeply rooted in attempts to address the social dimension of marketing in terms of exhaustiveness of environmental resources, social and environmental the impact of current marketing and greening various aspects of traditional marketing [2]. It is identified as one of the new forms of marketing that can play a very important role in providing opportunities for society's well-being [3]. It takes into account the ecological sensitivity of the natural environment, the laws of nature in order to ensure a better holistic quality of life and to strengthen the positive impact on the natural and social environment [3].

Since the establishment of the green marketing concept have originated also misconceptions associated with the function of the market. The definition of the term was made more difficult by the use of a diverse terminology [4]. Van Dam & Apeldoorn distinguished the concept of green marketing, which focuses on market strength and legislative shift towards better and greener performance of businesses [5]. On the other hand, green marketing is related to the ecological crisis and the obligations of marketers to the environment.

According to Peattie & Crane, despite the early developments, the idea of green marketing emerged until the late 1980s due to the growing interest of consumers in green products [6]. Rusko & Balog identified three components of the definition, such as that green marketing is a subset of the overall marketing activity, examines positive and negative aspects while is examined a limited range of environmental issues [7]. It is also clear that the definition was primarily focused on preventing environmental pollution by businesses and conserving natural resources. At a later stage, attention was focused on meeting marketing needs and meeting business goals. Development of terminology enhance the relationship between sustainability, marketing and research in environmental marketing [8]. It has developed as a philosophy that involves the use of limited natural resources and environmental responsibility. It has evolved into a set of environmentally friendly activities that follow a holistic management process compatible with ecosystem to meet consumers' needs, minimize environmental impact and meet business goals. Green marketing is therefore a connection process of environmental management, marketing activities and products to create value for society, the environment and a sustainable future.

Lieskovska compares the strategy of traditional marketing and green marketing. Traditional marketing is based on demand, market segmentation, targeting, positioning, gaining a competitive

advantage and in opposite, the green marketing includes all the activities that are aimed at creating and adapting each exchange that meets consumers' needs with minimal detrimental effect on the environment [9]. Dutta argues that green marketing involves the production of good quality products that can satisfy consumers' needs, pricing and product suitability [10].

Another perspective of green marketing is the demand of green consumers. Green consumers are in the epicenter of environmental marketing strategies and a large part of green marketing literature focuses on the determinants of their environmental behavior, green purchasing behavior and post-purchasing behavior [11]. Several studies of green consumers have shown that consumers who protect the environment, respond to the behavior of environmental responsible companies and this fact influence their purchasing behavior [12].

The most common reason for companies that strategically support environmental protection is the improvement of image, publicity, sales increase, tax relief and ultimately environmental protection itself. The fact that green marketing has been seen as an important marketing sub-domain over recent decades has been shown by several studies. These studies have focused on developing green marketing strategies and green marketing incentives [13]. Specifically, these were the opportunities that green marketing offers to meet corporate goals, the moral duty of the business, the pressure of state authorities and competition, cost savings, profit-making and business image building. Some studies have evaluated environmental marketing strategies, while others have focused on building relationships with stakeholders and consumers.

Based on the above, we can assume that future research should focus on maintaining the degree of company's market adaptation and taking the necessary steps to reconcile green marketing activities of the company, including internal and external activities that connect consumers with the company.

According to Rusko & Balog, the most important principles that is necessary followed to ensure the production of an environmentally suitable product and the perspectives of an environmentally oriented marketing strategy include [7]:

- Economical use of materials and raw materials;
- Non-use of materials harmful to the environment;
- Minimize emissions;
- Minimize energy consumption;
- Reuse of materials, components and energy;
- Minimize waste and create opportunities for easy processing and disposal.

### 3. Data and Methods

The aim of the article is to define the theoretical basics of green marketing from the viewpoint of several foreign and Slovak authors, to analyze the use of green marketing in practice on the case of Slovak transport company and to point out its benefits to the customers and ultimately for the whole society.

The basic source of research was secondary data obtained from annual company reports, statistical rosters, published reports in print and electronic media of professional publications. In their processing were used mainly general scientific methods such as description, comparison, analysis, synthesis, deduction and induction.

When examining and identifying the level of use of the green marketing in the Slovak transport company we started from the definition of approaches and concepts that are mentioned above.

On this basis, we can claim that the concept of green marketing is characterized by the following characteristics:

- The voluntary principle;
- Active cooperation and open dialogue with all stakeholders;
- Businesses engagement;
- Systematic and long-term time horizon;
- Credibility;
- Operation of the company with regard to "triple-bottom-line";
- Social responsibility and commitment by companies to contribute to the quality of life development.

We have examined the use of green marketing in a Slovak transport company - Transport enterprise of the city of Zilina (DPMZ - Slovak abbreviation). This transport company was established in 1949 under the name Communal Transport Company Zilina and it started to provide bus services for the public in city of Zilina in the same year. In the past, as the only one transport company in Slovakia, it also provided shipping. Since 1953 it has been called Transport enterprise of the city of Zilina. At present, DPMZ operates urban public transport on its 8 trolleybus lines and 10 bus lines (including the night line) [14].

DPMZ currently has 270 employees (to 1<sup>th</sup> January 2018), including 133 drivers. Its fleet consists of 42 trolleybuses and 40 buses (to 1<sup>th</sup> January 2018). Passenger services provide 2 retail outlets and 45 vending machines, most of which are able to provide multiple types of tickets to the passenger [14].

Table 1 lists the numbers of company employees, transported persons, kilometers traveled as well as numbers of buses and trolleybuses for the last 5 years.

**Table 1** Annual indicators of Transport enterprise of the city of Zilina. Source: [15]

<b>Indicator</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Number of company employees (pers.)	255	257	260	258	252
Number of transported persons (in thous. pers.)	10 891	10 630	10 809	11 015	11 411
The number of kilometers traveled (in thous. km)	3 525	3 527	3 517	3 541	3 570
Number of buses	42	42	44	42	41
Number of trolleybuses	42	42	42	41	40
Number of discarded buses	0	0	3	2	1
Number of discarded trolleybuses	10	10	5	1	1

Since 1996, the company has been focusing on the gradual electronisation of public transport. As the first city in Slovakia it had the information system in all vehicles, which consists of a trip computer, electronic marker, electronic road signs and acoustic alarms for notification stops in the vehicle interior and in the exterior for blind and visually impaired people needs. The data obtained through this information system allows to evaluate the transport, technical and economic criteria of public transport. They are also the basis for optimizing traffic [14].

Vehicles are regularly inspected, even online. Thanks to the GPS system, it is possible to locate the actual position of the buses and display them on the map. The system is fully managed and monitored by the dispatcher's workplace. It provides detailed information about the vehicle, driver, line and link, number of passengers and delays in connections. At the same time, it is possible to identify whether the vehicle was stopped in the bus stop.

Company DPMZ has undergone changes in the organization with the necessity of the modernization of the fleet, electronisation of work and the provision of new services.

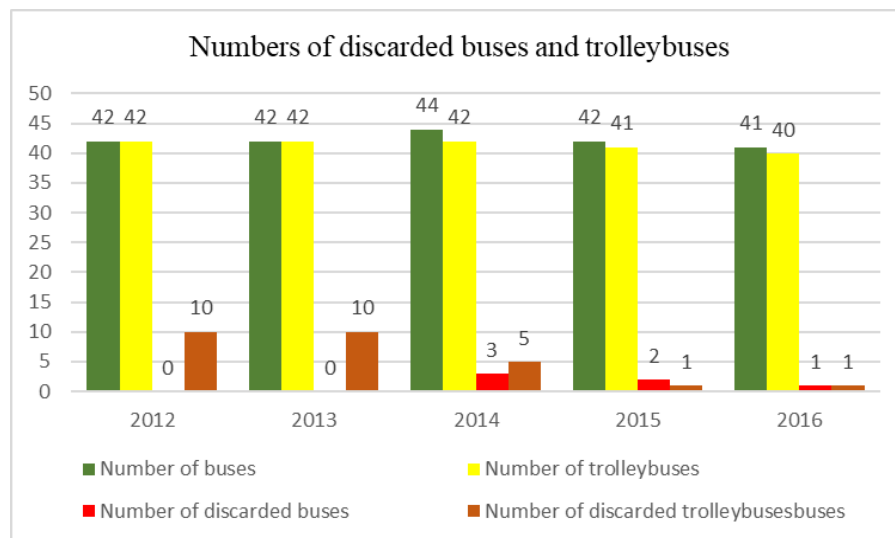
This transport company seeks to engage in various activities for citizens' satisfaction and the development of Zilina city. The mission and vision of DPMZ is to provide the highest quality, most efficient and safest transport services. The objectives of the company are restoration of the rest of the fleet, upgrading of information systems, upgrading the overhead contact line and modernization of the dispatching control system, building of smart stops, construction of a trolleybus maintenance base, introduction of online sales of time cards and modernization of public lighting. The projects are planned to be financed by the city of Zilina and the EU. The company strives to achieve economic and financial stability, protect the environment by minimizing exhaust gases and minimize waste, improve the quality of service provided and thereby satisfy customers.

#### 4. Results

Based on the analysis of the use of green marketing in the Slovak transport company - Transport enterprise of the city of Zilina, we can summarize the following results.

DPMZ as a company transporting daily a large number of passengers has to behave responsibly to the environment.

One of the conditions is the use of the ecological fleet.



**Fig. 1** Numbers of discarded buses and trolleybuses in the Transport enterprise of the city of Zilina.

Source: [15]

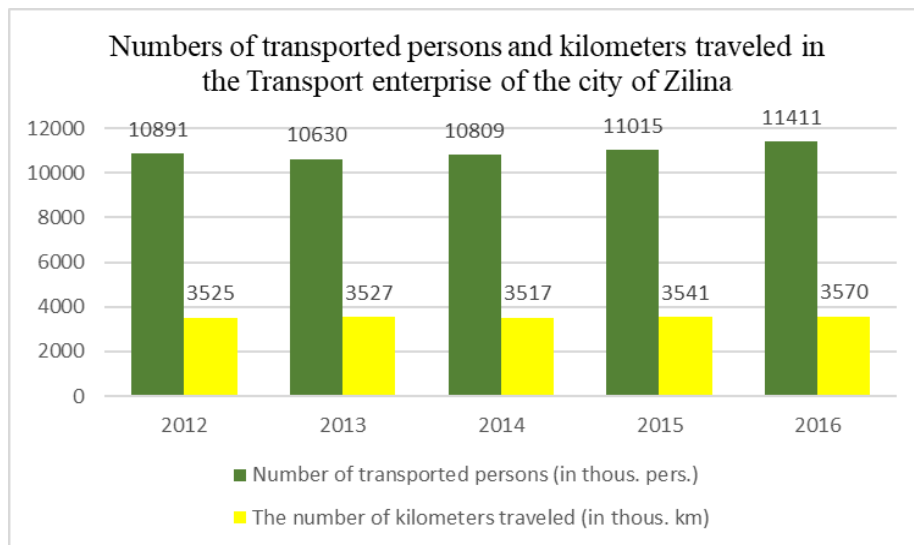
Fig. 1 shows, that since 2011, the company's fleet has been enriched by two buses and trolleybuses have stayed on the same number from the technical possibilities of the tracks as no new lines have been created, but have nevertheless exchanged 15 trolleybuses and 3 buses.

City of Zilina and the Transport enterprise of the city of Zilina continued the renewal of the fleet in 2012 and 2013, when ten low-floor trolleybuses were gradually launched. In 2014, five low-floor trolleybuses were put into operation. So far, the last renewal of the fleet was completed by the end of 2014 with the purchase of five low-floor buses.

Nowadays, the fourth phase of the fleet renewal phase is taking place in the form of the purchase of fifteen low-floor articulated trolleybuses. Since the trolleybus types in the world have been premiered in Zilina, they had to undergo the homologation process before putting them into operation.

All trolleybuses have been replaced with modern, with reduced boarding platform, bigger and more efficient, they transport more people so they are more environmentally friendly. Buses have been replaced for low emission vehicles. The transport of more passengers from lower consumption and reduced flue gas reduces the negative effects of the company's activities on the environment.

The second condition is to be with complying with the basic norms stipulated by the law of the Slovak Republic. The company has been involved in several major projects aimed at developing Zilina city and meeting the needs of passengers.



**Fig. 2** Numbers of transported persons and kilometers traveled in the Transport enterprise of the city of Zilina. Source: [15]

Fig. 2 shows that the number of kilometers traveled during the last five years almost unchanged. Only in 2015, after the introduction of the new line will gradually slightly increased. The number of persons transported in 2013 slightly decreased compared to 2012, but has been growing since 2014.

If we take a model situation that one bus takes 80 people traveled by their own cars after two persons, we have 40 vehicles in the city against 1 bus. In the case of 10 million passengers traveling by car, it would be 5 million cars per year, compared to 125 thousand buses or trolleybuses. This difference is alarming. The idea of driving in busy morning and afternoon traffic and the search for a paid parking space, urban public transport is the best alternative. Not to mentioned reducing emissions in the city of Zilina.

From this idea, some of the following projects were also created:

1. Project "Car Fast" - One of the most important projects was set up in order to reach the drivers of passenger cars with a challenge to leave the car at home and use the services of urban public transport for traveling. For motorists who engaged in "Car Fast" by purchasing a subscription ticket for the duration of the campaign, was scheduled the winning competition about travel pass EXTRA 30 days after the end of the drawn. As the further benefit of this project, we can consider the effort to reduce emissions in the city of Zilina and avoid peak traffic.

2. On the occasion of the anniversary of trolleybus traffic launch DPMZ organized a campaign aimed at trolleybus traffic called "The Visual Impression of Trolleybus Occupancy". Its aim was to acquire an objectively better idea of public transport vehicles occupancy, as well as the number of transported persons. About 170 students collaborated with the Transport Academy in Zilina to support the project. The benefit of the action was to improve the skills of young drivers, reduce traffic accidents between public transport vehicles and passenger cars as well as improving customers' loyalty to the public transport enterprise and affection to travel by urban public transport
3. Yearly, DPMZ organizes the "Open Doors Day in DPMZ", where visitors are also provided with trolleybus and central dispatching facilities. The company is also actively involved in the "World Day without Cars" event in the framework of the European Mobility Week campaign, in the form of a free urban public transport. Due this event, company also supports "European Mobility Week" and "European Trolley Project". Among the most popular attractions of the program belongs rollover simulator, crash simulator and goggles simulating the state of drunkenness. Safety activities were complemented by police volunteers from Zilina with their professional interpretation and demonstration of the fleet, as well as with the firefighters through a demonstration of first aid on the manikin.
4. Every year in September, DPMZ in the context of "European Mobility Week" joins the campaign "World Day without cars", namely by the active form of free urban public transport links. In this way, the company seeks to promote the importance of urban public transport as an environmentally-friendly form of transport.
5. As mentioned, DPMZ has joined the Europe-wide campaign so called "European Mobility Week" to promote electric-powered transport where one of the campaign's part used to be also "European Trolleybus Day". It represents the promotion of public transport electric vehicles and the maintenance of a certain standard acceptable to the environment. So, it is one of the key areas of the urban sustainable mobility of European cities. DPMZ has already joined "European Trolley Project" for the fourth time and has become part of 27 cities from 16 countries. This company shares the view that trolleybus is a basic environmentally friendly, safe, convenient passenger transportation system and it is nearly noiseless.
6. Since 2008, Zilina city has become a partner of the international project "BENEFIT" - Progressive measures for an organization to intensify the use of urban public transport by its employees, together with the DPMZ and the University of Zilina. The main goal of the project was to implement activities to increase the number of people traveling by urban public transport due to the long-term unsustainable increase in passenger cars in the city, the

lack of parking places and even the improvement of air quality in the urban area. A number of activities are planned to make the use of urban public transport services more attractive to meet these and other sub-targets. The main target group of this project was formed by the staff and students of the University of Zilina. The project, however, was also targeted at other inhabitants of the city of Zilina, the region of Zilina, random visitors to the city or tourists. The project was funded by the European Community Intelligent Energy - Europe (IEE) program to promote energy efficiency and renewable energy sources.

7. In recent years, DPMZ has undergone modernization of public lighting. Lamps were equipped with new generation light sources with a lifetime of up to 28,000 hours and a high luminous flux. The original light sources (mainly mercury) had low efficiency, they were environmentally hazardous and their production was ended in 2016. New lamps with lifetime at least 15 years are installed on special galvanized booms to ensure their long service life, it means under normal operating conditions for up to 20 years, without maintenance or surface coatings. Estimated energy savings on the lamps which were the subject of upgrading the lighting system is about 51.86%.
8. The waste management of DPMZ is managed in accordance with the waste management requirements of the Slovak legislation. Process management is provided by the environmental reviewer of the company, overseeing the availability and compliance of legislation in the company, evaluating and proposing environmental objectives, and integrating them with the management into the waste management system of the company. In addition to conventional municipal waste, the company also produces hazardous waste. These hazardous wastes occur in the repair and automotive industry: waste oil, lead-acid batteries, oil filters, absorbents, oiled handles, vapex contaminated with dangerous substances, sludges contaminated by dangerous substances, garbage waste. All emerging hazardous waste is sorted and collected by the company in closed containers. Containers are labeled with the name of the waste, the catalog number of the waste and the hazardous waste identification sheet. DPMZ has a contracted waste disposal firm and has been producing less waste since 2011, reducing its waste disposal costs.

## **5. Discussion**

Based on the results of the analysis, we can state that the selected Slovak transport company uses the principles of green marketing in its business and that its behavior can therefore be considered as ecological. Nevertheless, there are still opportunities to make these activities more effective.

Accordingly, we can indicate some proposals to improve the effectivity and visibility of these activities in this transport company:

As a primary goal, we propose a trial operation for free public transport in Zilina city so called "Free ride cross green city".

Subsequently we recommend the secondary goals for the company:

- Increase the number of customers;
- Increase of transport capacity and elimination of traffic peak by detecting occupancy in buses and trolleybuses on specific lines throughout the day;
- Reduce emissions and improve ecology in the city;
- Motivation benefits for employees (employees who form an important part of the company should be sufficiently remunerated and motivated to achieve the best possible performance) [16];
- Streamline the waste management of the company;
- The renewal of the fleet by the purchase of green buses with reduced exhaust gas, ie. with a different propulsion as a diesel combustion engine;
- Infrastructure modernization that includes the creation of separate bus lanes in the preferred areas of Zilina and the construction of new trolleybus lines along with the city of Zilina.

These measures should help to improve the positive perception of the transport company by customers and the general public. By giving passengers the opportunity to take advantage of free urban public transportation, DPMZ will improve its reputation, become interesting and attractive to city citizens and travelers, ensure the image of the company as more environmental friendly. People will use more use of urban public transport, whether as a means of traveling for work, sports, cultural, commercial or health activities. The assumption is that individual transport in the city will be reduced and roads and parking will ease, reducing emissions and improving the city's ecology. If the Free ride cross green city project proves to be successful, DPMZ could start thinking about its year-round operation.

## **6. Conclusion**

Urban public transport has a significant influence on the quality of life in the city and vice versa, each citizen significantly influences the activity of a public transport company in its city. Based on the analysis of the green marketing usage in the selected Slovak transport company, we have found that its behavior is environmentally friendly and its ecological approach is visible for its customers thanks to many events focused on promotion of ecological way of transport - urban public transport. Nevertheless, we have proposed measures to improve the effectivity and visibility of these activities

in this transport company and thus ensure the perception of the company as more environmentally friendly.

The proposed measures have not only the advantages but also the threats. The biggest weakness in realizing this vision is getting a lot of funds in a certain period of time. At the same time, the proposals will bring a number of benefits to the company, including upgrading, optimizing the entire transport system, creating new bus and trolleybuses, purchasing green buses, and streamlining waste management. The number of employees gaining benefits from the company will increase and thus motivation to work. With this the company will build a good reputation, improve the image and win customer loyalty for which it will act as an even more socially responsible.

Transport enterprise of the city of Zilina can be made more visible in the Slovak Republic, but also abroad, thanks to the proposed options, making it more attractive for tourists and thus increasing tourism. Both citizens and the city benefit from a reduction in emissions, exhaust gases, the construction of children's playgrounds, recreational zones and a responsible approach to collection and recycling of waste, and the city can gain the attribute of "Green City".

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