

Sustainable Marketing: A Global Benchmark Perspective on the Vending Industry

Dobromir Stoyanov
University of Economics – Varna (Bulgaria)
EM-Strasbourg (University of Strasbourg)

— *Review of* —
**Integrative
Business &
Economics**
— *Research* —

ABSTRACT

This paper aims to review the connection between marketing and sustainable development, presenting the relatively new concept of sustainable marketing in the context of the vending industry. We suggest a model of sustainable marketing, based on conventional notions about marketing - known as the 4Ps (product, price, place, promotion) and on the “triple bottom line” of sustainable development, the 3Ps (people, planet, profit). This paper illustrates multiple examples for sustainable marketing practices, successfully implemented worldwide. Hence, it substantiates the idea that the sustainable marketing approach in the vending industry exists not just in theory but also in practice, though there is still some room for improvements. This is the first sustainable marketing model, specially developed for the vending industry. It takes into account the influence of two very important external factors – Ethics and Legislation. The clarity and simplicity of the model make it suitable for application to any other retail industry and business. Moreover, the paper identifies a variety of sustainable benchmark practices that could help students in economics better understand and utilize the concept of sustainable marketing with ease and clarity

Keywords: sustainable marketing model, vending industry

1. INTRODUCTION

Over the past several years the discussions about the concepts of sustainable economic development (SED) and corporate social responsibility (CSR) have increased significantly, especially in times of recession and economic crisis (Brilius 2010, Ellis and Bastin 2011, Jothi 2010, Krauss, Rütelionè and Piligrimienè 2010). These two concepts are very much interconnected and that is why sometimes there is no visible differentiation between them. However, whereas SED is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED 1987), CSR includes the concrete measures undertaken by the companies. CSR is the way the companies integrate social, environmental and economic concerns into their values, culture, decision-making, strategy and operations in a transparent and accountable manner and thereby establish better practices within the firm, create wealth and improve society (IISD 2007). In spite of the subtle differences that exist between the two concepts, they have been both themes of many world economic summits during the last few years (Copenhagen 2009, Johannesburg 2002, Kyoto 1997, Rio 1992, Stockholm 2012). However, where does marketing fit into this equation? Sustainable marketing is the integration of the SED concept into marketing (Lavorata 2010).

It is the process of planning, implementing and controlling the development, pricing, promotion and distribution of products in a manner that satisfies the following three criteria: 1) customer needs are met 2) organizational goals are attained, and 3) the process is compatible with ecosystems (Fuller 1999, 4).

If your company does not already have a sustainable marketing strategy or at least some initiatives, it probably soon will, because this has become standard operating procedure for today's corporations. From SMEs to corporations, many companies in different industries are nowadays involved and committed to SED (Kechiche and Soparnot 2012). The vending industry is definitely not an exception. Actually, it is one of the industries that most endeavor sustainable because of its damaged image from the past: an industry selling junk food and cigarettes to the society. The purpose of this paper is to review the connection between Marketing and SED by illustrating a range of examples for sustainable benchmark practices from the vending industry.

2. FRAMEWORK AND SUSTAINABLE MARKETING MODELLING

Traditionally, marketing is considered as the 4Ps marketing mix (McCarthy 1964) and SED is identified with the 3Ps pillars (Barbier 1987). These models are much criticized as to their various weaknesses. One of the main limitations of the 4Ps marketing mix model¹ is that it is a production-oriented but not a customer-oriented model (Lauterborn 1990, Constantinides 2006, Popovic 2006). Some authors consider it inefficient for services (Booms and Bitner 1980, Rafiq and Ahmed 1995) or high-tech industrial products (Davis and Brush 1997) and online marketing (Constantinides 2002, Lawrence, Corbitt, Fisher, Lawrence and Tidwell 2000). As a result, numerous modifications to the 4Ps framework have been proposed: 5Ps (Judd 1987), 6Ps (Kotler 1984) 7Ps (Booms and Bitner 1980), 8Ps (Goldsmith 1999), and 15Ps (Baumgartner 1991).

The critics of the 3Ps model of sustainable economic development² consider that some other dimensions should be included to entirely explain the complexity of the sustainable development: an institutional dimension (Meadowcroft 2000, Spangenberg 2004, Trusins 2011); a cultural dimension (Hawkes 2001, Trusins 2011); and temporal and spatial dimensions (Chisholm, Grainger, Bristow and Tight 1999, Niu, Lu and Khan 1993, Trusins 2011). Despite the several imperfections of the 4Ps marketing model and the 3Ps sustainable model, they both have something that the other similar and more sophisticated models do not have – simplicity, memorability and relatively universal applicability.

Based on the aforementioned models, the author elaborates a new tailor-made model of sustainable marketing that takes into account the influence of two additional external factors – Ethics³ and Legislation⁴ (see Figure 1). In the context of that model, the author explains the application of the sustainable marketing approach in the

¹ The name of the traditional 4Ps marketing mix model (McCarthy, 1964) is an abbreviation that comes from the first letters of the four marketing elements: Product, Price, Place and Promotion.

² The name of the traditional 3Ps model of SED (Barbier, 1987) is an abbreviation that comes from the first letters of the following three terms: People, Planet and Profit.

³ In this article, the author considers Legislation as laws, directives and standards officially approved and/or compulsory on national/international level.

⁴ In this article, the author considers Ethics as moral principles, guidelines, charters and codes.

vending industry by presenting some of the most sustainable marketing practices worldwide.

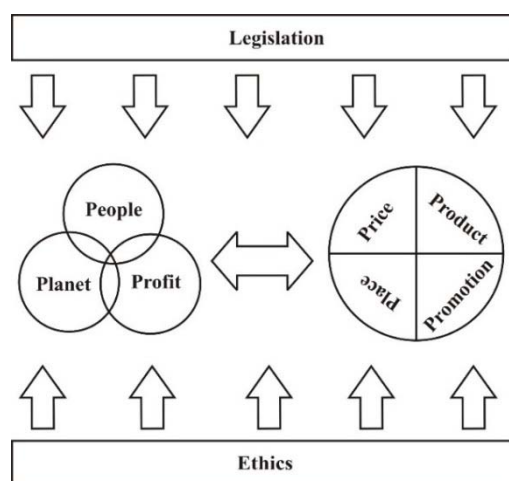


Figure 1: Sustainable marketing mix modelling

Source: Developed by the author.

3. SUSTAINABLE PRACTICES IN THE VENDING INDUSTRY

As mentioned earlier, the author intentionally chose the vending industry in order to contrast the current application of sustainable marketing with the traditional perception of an industry that has been perceived as a one of the drivers of smoking and obesity for years (Johnston, O'Malley and Terry-McElrath 2004, Park, Sappenfield, Huang, Sherry and Bensyl 2010, Robinson, Dalton III, Nicholson 2006, Wiecha, Finkelstein, Troped, Fragala, and Peterson 2006). The different aspects in which the sustainable marketing is applied in vending sector are presented in Table 1.

Table 1.1: Application of the sustainable marketing approach in the vending industry

<i>Marketing mix</i>	<i>Sustainable development aspects</i>
	<i>I. Environmental aspects (Planet)</i>
<i>1. Product</i>	Renewable energy sources (sun, H2); energy saving software and lighting; projects for HFC-free cooling systems and eco-friendly refrigerants; eco/bio/organic products; mug sensors; biodegradable cups and consumables with high rate of recycling; reverse vending; refurbished machines
<i>2. Price</i>	Charity/donation programs in partnership with NGOs/NPOs for green causes
<i>3. Place</i>	Vending with recycling in the retail stores, malls, schools and universities

4. <i>Promotion</i>	Integrated promotional campaigns between reverse vending operators and retail stores/NGO/NPO that aims to increase consumer's awareness of recycling and to encourage them with some rewards to contribute to the environment
<i>II. Economic aspect (Profit)</i>	
1. <i>Product</i>	Significant initial investment of resources for R&D implementation
2. <i>Price</i>	Proved long-term effect on the intangible and tangible company assets: corporate image, brand equity, loyalty and attitudes, sales, costs, profitability
3. <i>Place</i>	No (or fewer) barriers to installing sustainable machines in schools and hospitals
4. <i>Promotion</i>	Less expensive to promote healthy products than any other products
<i>III. Social aspects (People)</i>	
1. <i>Product</i>	Healthier and more balanced nutrition standards, programs, initiatives and labelling: Fitpick and feelGood labels; automats for fruits, vegetables, purified water and other healthy products (low-fat, less sweet and salty options)
2. <i>Price</i>	Charity and donation programs in partnership with NGOs/NPOs for social causes; lower prices of snacks and beverages on university campuses
3. <i>Place</i>	Automats for condoms in bars and university campuses preventing HIV and other sexually transmitted diseases; vending for healthy snacks and beverages in schools and workplaces delivering hydration and energy to the consumers
4. <i>Promotion</i>	Balanced for Life; Coca Cola happiness vending machines: Smile/Hug/Dance/Sing/Kiss for a Coke; Send a free Coke around the world Coca Cola's attempt to unit Indians and Pakistanis
<i>Ethics</i>	
1. <i>Product</i>	Balanced product assortments including between 25-50% sustainable products: 1) products sourced from Third world producers (coffee, cocoa, milk and sugar 2) healthier products - snacks (baked chips and other products with reduced amount of calories and saturated fats) drinks (fruit-based drinks containing at least 50% juice and no added caloric sweeteners 3) bio and organic products 4) eco-friendly consumables - cups, mugs and stirrers
2. <i>Price</i>	Support of sustainable initiatives: Fairtrade, Better tomorrow at

	origin and Rain forest alliance; setting lower or the same prices for the sustainable products
3. Place	<i>Healthy vending in the workplace. An Employer Toolkit 2012</i>
4. Promotion	Better communication and display of sustainable products (at eye level)
	<i>Legislation</i>
1. Product	EVA-EMP/TEMP protocols; nutrition and allergy labels; age-verification software
2. Price	“fat tax”, “soda tax” affecting directly the fixed costs and the final price; additional costs for R&D and standards certification
3. Place	Some locations (schools, hospitals) and promotional incentives are restricted for some vending products (sweets, fizzy drinks, cigarettes, alcohol) to prevent social problems and health diseases (obesity, cancer). Restrictions on misleading and comparative advertising
4. Promotion	

Source: Developed by the author.

3.1. ENVIRONMENTAL ASPECT

In environmental aspect, marketers in the vending industry use three main leverages within the concept of SED: energy consumption reduction, recycling of the automats at the end of their lifecycle and waste treatment. The energy consumption reduction is associated with the implementation of alternative reusable and renewable energy efficient resources. They enable the automats not only to work with absolute autonomy but without any connection to the electric source, the installation of such machines in every possible location is quite facilitated. On the market could be found hydrogen and solar powered vending machines, the Japanese dynamo based hand cranked vending machines, that could be recharged for a while so that the consumer could order a drink from them even when the electricity in the building is switched off. Some modern machines save energy as becoming dormant when consumers are absent during the night or other less intensive periods (Saltmarsh & Hall, 2007). LED lights in vending machines consume less energy. Some vending machines, placed outdoors are now made with special glass and with an isolating structure, to limit the energy and heat generated by the sun. During the last few years, European vending association (EVA) has developed several certificates concerning the environmental impact of the sector (EMP, 2010, 2011a; EVA TEMP, 2004). These certificates are known as “protocols”. Outside their SED functions, they also help the potential buyer to make a quick comparison between the different machines, so he/she can make easier a decision. Nevertheless, one of the major environmental problems still faced

by the industry is connected with the refrigerants and the cooling units of automats. All vending machines for snacks and bottled drinks in Europe continue to use R-134a gas⁵ as refrigerant, a gas that is flammable and explosive (EVA 2009). This is quite a lot, compared to Japan, the country with the highest number of automats per capita (McEacher 2012) where about 10% of the machines operate with natural refrigerants (EVA 2009). The supportive vending industries (manufacturing, packaging and consumables for automats) are also developing and marketing eco-friendly products: eco, bio and organic⁶. Paper cups and other greener alternatives to the traditional plastic cups are offered on the market (i.e. BioWare™ and SwissPrimePack™). On the other hand, some companies enhance the value of plastic cups in use at the end of their lifecycle because when incinerated, the cups release a lot of heat, which is used for heating water or generating electricity (Save a cup). Many vending machines for hot drinks, installed in workplaces, are well equipped with mug sensors, allowing the consumers to use their own mugs while ordering their coffee/tea from the vending machine. This makes the usage of plastic cups pointless. Nevertheless, there is a constant debate whether or not it is more eco-friendly and hygienic to use disposable/single use cups versus reusable cups/mugs because of the environmental impact of the whole product life cycle, since chemical detergents and water are used to clean them (Harris and Prober 2009, Harst and Potting 2013, Hocking 1994). Finally yet importantly, concerning the overall positive environmental impact of the industry, reverse vending machines should be mentioned. These devices accept and/or prepare for recycling used beverage containers (glass, plastic, aluminium) and return money or accumulate bonus points to a special user card (the reverse of the typical vending cycle). They frequently allow the consumers to see their own contribution to the environment in terms of reduction of CO₂ emissions and energy efficiency. One of the latest achievements is the reverse vending machine for light bulbs and batteries. It is a result of the collaboration between the international retailer IKEA and Reverse

⁵ R-134a is a gas kept in the vending machine's cooling unit. It is also known as hydro fluorocarbon (HFC). This gas has a high global warming potential. It represents only 2 % of the greenhouse gases but 80% of these 2% are generated in the vending industry. The other 20% are used in air conditioning and heating.

⁶ As a result we can see on the automats various labels (e.g. AB and BIO) indicating that the products sold by the vending machines have been manufactured with the respect of the environment - the health of soils, ecosystems and people - by strictly limiting the use of synthetic fertilizers, pesticides, hormones, livestock antibiotics, food additives, genetically modified organisms. Source: www.organic-bio.com

vending corporation. Their project gained the UK recycling award for 2012 in the category “Electrical and Electronic Equipment Recycler”. The automat offers the customers a large selection of different rewards - from a voucher for free coffee to 10-pence donation to one of the four corporate charities: UNICEF, WWF, Save the children, Woodland Trust.

3.2. ECONOMIC ASPECT

Many researchers explore the economic advantages that stem from the implementation of sustainable marketing: as an effective approach to enhance brand equity (Porter and Kramer, 2006), leading to cost-efficiency and profitability (Gordon, Carrigan and Hastings 2011) while increasing profits and customer loyalty (McDonald and Rundle-Thiele, 2008). Therefore, it is not a coincidence that the “Cola Wars”, one of the longest running rivalries in business, is waged on the “sustainable battlefield”. Coke and Pepsi are constantly looking to grab as much market share as they can from each other by adopting slightly different, sustainable approaches. They are both pursuing strategies of zero net water usage and offering water bottles made from sustainable packaging. They constantly invest and innovate in vending machines based on alternative energy resources, greener refrigerants (CO₂, isobutene, propane) recyclable/reusable raw materials and components. Another indicative example is the case with Darell Meyers – an employee in a North Carolina Wal-Mart store. He submitted a suggestion to remove light bulbs from the store vending machines because they stay lit 24/7 and need to be replaced regularly by maintenance workers. The company now estimates that the potential savings of this initiative are more than \$ 1 million a year and as a result, today it is hard to find a vending in any Wal-Mart store that has a functioning light bulb in it (McElhaney 2008).

Regarding the conversion of vending machines items to healthier options and the consequential effects on revenues, different surveys and studies explore the profitability of vending machines selling healthy foods and beverages (French, Jeffery, Story, Hannan and Snyder 1997, French, Jeffery, Breitlow, Baxter, Hannan and Snyder 2001). For example, University of Minnesota carried out an experiment by adding low-fat snacks to vending machines in 12 worksites. Price reductions of 10%, 25% and 50% were tested. The results revealed that the percentages of low-fat snack sales increased by 9%, 39% and 93%, respectively. Moreover, the profits per machine were not affected by the changes (French et al. 2001). An earlier study by the same authors examined that low-fat snacks even increase by 80% during a three-week period when prices are reduced by 50% (French et al. 1997).

3.3. SOCIAL ASPECT

Responding to the newest trends in consumer behaviour the vending industry starts gradually to widen the range of its products by offering some healthier alternatives with less sugar, salt and fats. The North American vending association (NAMA) elaborates the FitPick program, which provides consumers with some guidelines on how to identify and select lower-fat, lower sugar alternatives to vending's traditional snacks and beverages. It includes two different nutrition standards: 1) FitPick Standard 35-10-35⁷ and 2) Alliance for a Healthier Generation Standard⁸. This program is a part of the Balanced for Life campaign, which provides information, brochures, posters, games and other promotions to encourage a healthy, balanced lifestyle. NAMA assumes that in order to attract new consumers, vending operators should support between 25% and 50% of total space on their shelves for healthier products (NAMA FitPick guide 2008).

The French vending association (NAVSA) developed a similar program. Its feelGood label could be put on every vending machine that offers one of the following products: 1) fruit and vegetables 2) non-alcoholic refreshing drinks 3) cereals 4) dairy products (NAVSA Communiqué presse, 2012). Another clue to the industry's citizenship are the charity and donation programs in which vending companies collaborate with NGOs and NPOs, raising funds for different social causes (as a percentage of the profits or as a separate box attached on the automats). In this way, the companies could easily place their machines at almost every location, sometimes even without the necessity of paying a rent. By placing the logos and labels of the supporting NGOs and NPOs, vending firms establish trust and credibility with the customers. The European leader in the vending distribution - Selecta Group - supports UNICEF's Wash project, which provides safe drinking water in Gambia's upper river region, considered one of the country's poorest areas. Local schools, basic health centres and public spaces are provided with access to clean water so that more than 25,000 people can benefit from safe drinking water and basic sanitation (Selecta Group 2012).

⁷ FitPick Standard 35-10-35 is a nutrition standard, which identifies products with no more than 35% of calories from fat, no more than 10% from saturated fat, and not more than 35% of the total product weight from sugar, excluding nuts and seeds (NAMA FitPick guide 2008).

⁸ Alliance for a Healthier Generation Standard is also a nutrition standard but intended especially for schools. It is based on the 35-10-35 guidelines. Moreover, it requires no more than 230 mg of sodium, 180 calories - for products sold in middle schools and 200 calories - for products sold in high schools (NAMA Fit Pick guide 2008).

In Germany and France in specific locations (university campuses and dormitories), vending machines could be found offering snacks and soft drinks at prices even lower than these of the same products offered by many convenience stores. During the last few years, Coca Cola has launched several very creative and successful socio-promotional initiatives under the motto “Open happiness”. In order to obtain a free Coke from an automat the customers are challenged by the company to express their happiness - by smiling or dancing in front of the vending machine, hugging it, or for the couples - kissing each other. Because of the partnership between Google Inc. and Coca Cola Co., it is now possible to send a Coke around the globe to an unsuspecting recipient with just a few taps on the mobile phone. The slogan of the campaign invoke the consumers to send a free Coca Cola around the world and share a little happiness with someone they have never met before. They can decide where to send a Coke by selecting one of many machines located around the world. They can personalize their delivery by writing a short text message, which Google translates automatically to the desired language. A video with Google Maps, Street View visualizes the Coke's journey from the consumer's current location to the vending machine across the globe. Users can wait for confirmation of their Coke's delivery, or enter an email address to be notified later. Once the Coke is delivered, recipients can also say 'thanks' by sending a message of their own back to the user. That message is delivered to the user's inbox where they can read the note and view a video clip of the recipient's surprised reaction upon getting a free Coke. Coca Cola Co. also attempts to contribute to the world peace through uniting Indians and Pakistanis with its vending machines. The idea is to let citizens of both countries (involved in hard and long lasting politico-religious conflicts) to interact with each other, even to complete shared tasks. Once those tasks are accomplished, the machines dispense a Coke (Coca Cola 2013).

Certain vending locations are also of great importance for the society, especially for urgent purchases (sanitary products) and when final consumers are in a captive environment (at the airport, at work) and “there is no way out”. Good examples are the automats for fruits and vegetables, snacks, hot and cold drinks, delivering hydration and energy in the workplace, automats for condoms installed in bars, restaurants, university dorms, preventing in that way HIV and other sexually transmitted diseases. Local and national legislation in some cities/countries does not allow the stores to be opened on Sundays and during some local/national holidays as well. Therefore, in some days of the week and even at some parts of the day (particularly during the night) those machines are “the last resort of the consumer” and “the only one saving grace“. For an office worker who cannot go back home during a busy season, one might be able to sleep in the office without any concerns

about food and drinks, clean clothes, and ties because all these necessity items can be purchased via vending machines around the office (Takei, Hewitt, Bantog and Becker 2011).

3.4. ETHICS

One of the major ethical facets of the vending distribution is connected with some of the relatively new initiatives and concepts, such as Fairtrade⁹, Brighter tomorrow at origin¹⁰ and Rain forest alliance¹¹. By offering to their consumers products sourced from Third world producers companies, such as Fairtrade Vending Co., Revive vending Ltd. and Lyovel France engage in the ideas to fight against unfair competition in business and to advocate the conservation biodiversity. One of the few vending associations that has developed an overall ethical standard for customer service is the National vending association of Australia (NVA). Some of the cardinal ethical principles of the Ethical Code that all the members of the NVA should respect are: 1) to assure that the sale of goods and services is proper and ethical, mutually beneficial for the two parties 2) to offer only high quality merchandise and service to the public at all times 3) to operate only those merchandising or service machines that clearly show when they are empty or those that will provide for the return of the patron's money if no merchandise is delivered or service rendered 4) to see that all merchandise or service machines are plainly marked with clear and simple instructions for their operation (NVA Ethics and Charter 2013).

Another major ethical document is the Customer Charter of the NVA. Some of its statements are that: 1) the trained staff, operating/servicing the automats have to ensure that machines are maintained to the highest standards of safety and hygiene; 2) no company has to engage in any form of selling, promotion, operation, advertising or

⁹ Fairtrade is an international movement and foundation that aims to help producers in developing countries to obtain a fair deal for their products and their labor, a fair price that covers the cost of production and enough to guarantee a living income. It focuses on exports from developing countries to developed countries, primarily handicrafts, coffee, cocoa, sugar, tea, bananas or honey. Fairtrade Mark is a registered certification label for products sourced from producers in developing countries. It can be used both for product packaging, and wider promotional campaign use. Source: <http://www.fairtrade.net>

¹⁰ Brighter Tomorrow at origin is a program similar to Fairtrade but instead of just paying a basic standard price (as with Fairtrade), it works with farmers from Malawi and Kenya helping them to improve the quality of their product and to command a higher price for their yield. It provides funding for a range of community and environmental projects.

¹¹ Rain forest alliance is a NGO that aims to conserve biodiversity and encourage the environmentally and socially responsible management of forest resources.

publicity which is likely to bring the vending industry into disrepute; and 3) vending companies have to actively advocate all environmental initiatives pertaining to the vending industry (NVA Ethics and Charter 2013). EVA has also adopted several guidelines for its members: “buying a product from a vending machine is a free choice made by responsible consumers. However, some consumers, children in particular, are more vulnerable and need to be guided in their choice by their parents. Therefore, the EVA members should not try to seek to place machines in primary schools unless being specially appealed to do so by the school authorities. In addition, the EVA engage to make non-branded machines available and not to sell big sized products in schools” (EVA 2011c). Another practical guideline, intended to promote the healthy eating at work, is *Healthy vending in the workplace. An employer toolkit 2012*. It is developed by Mid-America coalition on health care (MACHC 2012) and it aims to encourage the employers to implement a healthy vending strategy in their organizations – it explains how they should choose their vending machine suppliers and the variety of products. This guideline suggests that the price for the healthy items, set by the vending operators, should be lower or the same as that of the unhealthy items. Therefore, this could encourage consumers to purchase products better for their health. Some of the recommended sustainable marketing strategies in the guidelines include: 1) use of signs and labels to attract the attention of the consumers to the healthy items 2) restriction of advertising to healthy items only 3) spotlighting the items that meet special health considerations, such as low-sodium or high-fibre 4) more prominent placement of the healthy products - displaying them at eye level and in locations with the highest selling potential (MACHC 2012).

3.5. LEGISLATION

Nowadays taxes, subsidies and prohibitions are increasingly being considered as potential policy instruments to incentivize consumers to improve their food and beverage consumption patterns and related health outcomes (Powell, Chriqui, Khan, Wada and Chaloupka 2013). That is why many countries adopt measures and impose, for health prevention reasons, restrictions about the selling through vending machine products such as chocolate bars, fizzy and energy drinks in places, such as hospitals and schools. For instance, the so called “soda tax” or “fat tax” – all of them are taxes against products with a high content of sugar, fats and salt. Hungary, France and Denmark have already introduced similar taxes. This entirely affects both - the fixed costs of the vending operators and the final consumer prices because the snacks and sweetened soft drink beverages are one of the revenue pillars for the industry, together with hot drinks. Now almost everywhere around the world there are some limitations about the promotion and distribution of alcoholic beverages and tobacco products,

which certainly affects the vending distribution as well. Therefore, the industry uses different locking devices that limit a minor's ability to purchase tobacco products by requiring verification of the bank, identity card or customer mobile phone (Bellou and Bhat 2013, Forster, Hourigan and Kelder 1992, Kolschooten, 2002). Conversely, other researchers prove that many minor customers still have access to the machines using expired bankcards from parents or via older siblings but the industry endeavors to find a solution (Gallus, Fernandez, Pacifici, Colombo, Zuccaro, Bosetti, Apolone and Vecchiaa 2006, Schneider, Meyer, Yamamoto and Solle 2009). Some of the latest achievements are the futuristic vending machines in Japan that are integrated with cameras to control the selling of cigarettes to minors. They use face recognition software that consider the wrinkles, sagging skin and other signs on the face for more accurately determining the age of the customer. Nevertheless, they are not so widespread because it is a matter of time and money to install them everywhere.

As the problem still exists, at the Central European level some measures are being discussed that could even lead to the total ban of all tobacco vending machines in EU member states (Commission Directive 2011/37/EC). This aims to reduce the promotional effects of tobacco industry marketing. In response to that threat, the EVA, trying to lobby for the interests of the industry, suggests to give those machines a second life - to be refurbished, transformed or reused for selling other products (EVA 2011b). Another European legislative issue, one that directly affects the industry, is the nutrition and allergy labelling of vending machines. The nutrition labels should provide information about the energy value of the products - the amount of carbohydrates, fats or proteins. Allergy labelling information should also be highlighted not only on the package of the products, located inside the automat, but on the vending machines as well. This means that if a consumer stands in front of a vending machine he/she should be able to acquire all necessary information about possible allergens contained in any particular product, prior to making a purchase. Actually, this legislation comes into force December 2014 and it affects only non-pre-packed food from vending machines (Regulation EU 1169/2011). The industry has still not found a common solution, though the EVA's Hygiene Committee is designing a label to help operators in Europe cope with the new measures. Another European legislative measure of primary importance to the industry and the sustainable development is the F-gases regulation¹². As mentioned earlier, the main

¹² Fluorinated gases (F-gases) are a family of man-made gases used in a range of industrial applications. Because they do not damage the atmospheric ozone layer, they are often used as substitutes for ozone-depleting substances. However, F-gases are powerful greenhouse gases, with a global warming effect up to 23 000 times greater than carbon dioxide (CO₂), and their

HFC refrigerant, used in the cooling units of the vending machines, has a high greenhouse potential. That is the reason why in 2012 the European commission joined a plan predicting to outlaw its use until 2020, as a part of Europa 2020 *strategy* for smart and inclusive growth. Since for the time being there is officially no vending machine in Europe using other refrigerants, it means that the industry is facing a great challenge to quickly find an alternative solution in the following few years. Another European directive defines misleading and comparative advertising very precisely (Directive 2006/114 /EC). Therefore, manufacturers and operators are aware of the legislative limitations they should take into account whilst branding their vending machines or the products placed in them.

One of the most sophisticated and complete sustainable programs, worldwide, belongs to NAMA. Its *Sustainability self-assessment tool* facilitates vending companies to identify where they currently stand and where they can go in terms of sustainability (NAMA 2012). The overall impact of the vending industry on the sustainability is estimated on the following four areas: 1) Products – its food and supplies; 2) Resources – the effect of its equipment and infrastructure on earth natural resources; 3) Communication – the way it speaks and teaches the consumers; and 4) Community – people and those around us. For each area some recommended measures and strategies for improvement are developed. Each category consists of sub-categories that pertain to various aspects. For example, the sub-categories of Products include food and beverages, supply and packaging. For every sub-category there are several directions called “*actions*” on how to make the products more sustainable. Therefore, by using the four-point scale of the *Sustainability self-assessment tool* vending companies can continually evaluate their performance and take measures for improvement (NAMA 2012).

4. CONCLUSION

All of the aforementioned examples of sustainable marketing practices demonstrate that the concept of sustainable marketing, in the context of the vending industry, is neither a myth nor an oxymoron. However, some SED problems still exist and need to be solved. Though many green technologies, innovations and alternative energy sources have been on the market for some time, many vending machine manufacturers and operators still stay myopic about the ideas of sustainable marketing. They restrain from implementing that kind of policies because it requires some considerable initial investments. The companies in the sector endeavour to meet all the legislative requirements, but when it comes to implementing additional ethical measures the majority of them just cannot afford it because most of them are small and medium sized companies. Nevertheless, by communicating socially and environmentally responsible behaviour, the vending industry is gradually managing to rebuild its

damaged image from the past of an industry selling junk food and cigarettes. Nowadays more and more vending companies offer healthier, more sustainable alternatives to its customers because engaging in the sustainable idea is not only a guarantee for adding value to their marketing offers but also a highly profitable long-term investment.

ACKNOWLEDGEMENTS

The idea of the current article was born during the course of Associate Professor Pia IMBS on the Sustainable development, at EM-Strasbourg business school (University of Strasbourg). The valuable comments of Associate Professor Sihem Dekhili on the initial manuscript of this paper also contributed significantly to its improvement. The author is extremely grateful to Emma Christian-Woodruff and Elizabeth Haywood Maclin for their professionalism in editing the current article and making it more comprehensible for the journal audience.

REFERENCES

- [1] Bellou, Andriana and Rachana Bhatt. 2013. "Reducing underage alcohol and tobacco use: Evidence from the introduction of vertical identification cards." *Journal of Health Economics*, 32(2):353–366.
- [2] Barbier, Edward. B. 1987. "The Concept of Sustainable Economic Development." *Environmental Conservation*, 14(2), 101–110.
- [3] Baumgartner, Jim. 1991. "Nonmarketing professionals need more than 4Ps." *Marketing News*, 22 July, 28
- [4] Booms Bernard H. and Mary J. Bitner. 1980. "Marketing strategies and organisation structures for service firms," in Donnelly, James. and William R. George (Eds.), *Marketing of services*. American Marketing Association, 47–51.
- [5] Brilius, Povilas. 2010. "Dynamic model of dependencies between economic crisis and corporate social responsibility contribution to the sustainable development." *Economics and management*, 15, 422–429.
- [6] Chisholm, Michael, Alan Grainger, Abigail Bristow and Miles Tight. 1999. "Achieving sustainable development: Assessing the human spatial and temporal dimensions." *International Journal of Sustainable Development and World Ecology*, 6(4), 229–230
- [7] Coca Cola. 2013. *Dispensing happiness: 12 Innovative Coca-Cola vending machines in action*, accessed December 04, 2013. <http://www.coca-colacompany.com/stories/dispensing-happiness-12-innovative-coca-cola-vending-machines-in-action>
- [8] Constantinides, Efthymios. 2006. "The marketing mix revisited: Towards the

- 21st century marketing.” *Journal of Marketing Management*, 22(3), 407–438.
- [9] Constantinides, Efthymios. 2002. “The 4S web-marketing mix model.” *Electronic Commerce Research and Applications*, 1(1), 57–76.
- [10] Commission Directive 2011/37/EC of 30 March 2011 amending Annex II to Directive 2000/53/EC of the European Parliament and of the Council on end-of-life vehicles. (2011), *Official Journal of the European Union*, L 85/3
- [11] Copenhagen. 2009. *Copenhagen climate change conference* accessed October 27, 2013. https://unfccc.int/meetings/copenhagen_dec_2009/meeting/6295.php
- [12] Davis, W. and K.E. Brush. 1997. “High-Tech Industry Marketing: The Elements of a Sophisticated Global Strategy.” *Industrial Marketing Management*, 26(1), 1–13.
- [13] Directive 2006/114/EC of the European Parliament and of the Council of 12 December 2006 concerning misleading and comparative advertising (2006). *Official Journal of the European Union*, L 376/21
- [14] Ellis, Louise and Claire Bastin. 2011. “Corporate Social Responsibility in Times of Recession: Changing Discourses and Implications for Policy and Practice.” *Corporate Social Responsibility and Environmental Management*, 18(5), 294–305.
- [15] EVA. 2004. *Temperature measurement protocol. EVA – TM*. Brussels: European vending association aisbl
- [16] EVA. 2009. *Position of the EVA on the HFC gas R-134a.1-10*. Brussels: European vending association aisbl
- [17] EVA. 2010. *Energy measurement protocol. EVA–EMP. Test protocol for the measurement of energy consumption in vending and dispensing machines. Part 1 Chilled, frozen and ambient machines. Version 3.0A*. Brussels: European vending association aisbl
- [18] EVA. 2011a. *Energy measurement protocol. EVA–EMP. Test protocol for the measurement of energy consumption in vending and dispensing machines. Ver.3.0B*. Brussels: European vending association aisbl
- [19] EVA. 2011b. *European vending association assessment of the report on the public consultation on the possible revision of the tobacco products directive (2011/37/EC)*. Brussels: European vending association aisbl
- [20] EVA. 2011c. *Vending in schools: a matter of choice. European best practice guidance on diet and nutrition for the national vending industry associations*. Brussels: European vending association aisbl
- [21] Forster, J. L., M. Hourigan and S. Kelder. 1992. “Locking devices on cigarette vending machines: Evaluation of a city ordinance.” *American journal of*

- public health*, 82(9), 1217–1217.
- [22] French, Simone, Robert W. Jeffery, Breitlow, Kyle K. Breitlow, Judith S. Baxter, Peter Hannan and Patricia Snyder. 2001. “Pricing and promotion effects on low-fat vending snack purchases: the chips study.” *American Journal of Public Health*, 91(1), 112–117.
- [23] French, Simone, Robert W. Jeffery, Breitlow, Story, M., Peter Hannan and Patricia Snyder. 1997. “A pricing strategy to promote low-fat snack choices through vending machines.” *American Journal of Public Health*, 87(5), 849–851.
- [24] Fuller, Donald. 1999. *Sustainable Marketing. Managerial ecological issues*. California: Sage Publications Inc.
- [25] Gallus, S., E. Fernandez, R. Pacifici, P. Colombo, P. Zuccaro, C. Bosetti, G. Apolone and C. Vecchiaa. 2006. “Channels of cigarette distribution, price and tobacco consumption in Italy.” *Preventive Medicine*, 42(2), 132–134
- [26] Goldsmith, Ronald. E. 1999. “The personalised marketplace: beyond the 4Ps.” *Marketing Intelligence and Planning*, 17(4), 178–185.
- [27] Gordon, Ross, Marylyn Carrigan and Gerard Hastings. 2011. “A Framework for sustainable marketing.” *Marketing Theory*, 11(2), 143–163.
- [28] Harris, B.K. and E.J. Probert. 2009. “Waste minimisation at a Welsh university: A viability study using choice modelling.” *Resources, Conservation and Recycling*, 53(5), 269–275.
- [29] Harst, Eugenie and José Potting. 2013. “A critical comparison of ten disposable cup LCAs.” *Environmental Impact Assessment Review* 43, 86–96.
- [30] Hawkes, Jon. 2001. *The fourth pillar of sustainability: culture’s essential role in public planning*. Melbourne: Common Ground publishing
- [31] Hocking, Martin B.1994. “Reusable and disposable cups: An energy-based evaluation.” *Environmental Management*, 18(6), 889–899.
- [32] IISD. 2007. *Corporate social responsibility. An implementation guide for business*, accessed October 27, 2013. http://www.iisd.org/pdf/2007/csr_guide.pdf
- [33] Johannesburg. 2002. *Report of the world summit on sustainable development*. Accessed October 27, 2013 www.un.org/jsummit/html/documents/summit_docs/131302_wssd_report_reissued.pdf
- [34] Johnston, L.D., P.M. O'Malley and Y.M. Terry-McElrath. 2004. “Methods, locations, and ease of cigarette access for American youth, 1997–2002.” *American Journal of Preventive Medicine*, 27(4), 267–276.
- [35] Jothi, M. 2010. “CSR ... in the era of global economic meltdown.” *Global*

Management Review, 4(4), 93–97

- [36] Judd, V. C. 1987. “Differentiate with the 5th P: People.” *Industrial Marketing Management*, 16(4), 241–247.
- [37] Kechiche, Amina and Richard Soparnot. 2012. “CSR within SMEs: Literature Review.” *International Business Research*, 5(7), 97–104.
- [38] Kolfschooten, Frank v. 2002. “Netherlands introduces child-proof cigarette vending machines.” *The Lancet*, 360(9345), 1576.
- [39] Kotler, Philip. 1984. *Marketing Management: Analysis, Planning and Control*. 5th ed., New Jersey: Prentice-Hall.
- [40] Krauss, Alexander, Aušra Rūteliionė and Žaneta Piligrimienė. 2010. “SMEs in search for feasible concepts for systematic social responsibility in times of crisis.” *Economics and management*, 15, 635–641.
- [41] Kyoto. 1997. Report of the conference of the parties on its third session held at Kyoto from 1 to 11 December 1997, accessed October 27, 2013. <http://unfccc.int/resource/docs/cop3/07a01.pdf>
- [42] Lauterborn, Bob. 1990. “New marketing litany: four Ps passé: C-words take over.” *Advertising Age*, 61(41), 26.
- [43] Lavorata, Laure. 2010. *50 fiches sur le marketing durable*. Paris : Bréal.
- [44] Lawrence, E., Corbitt, B, Fisher, J.A, Lawrence, J. and Tidwell, A. 2000. *Internet Commerce*. John Wiley and Sons Australia Ltd.
- [45] MACHC. 2012. *Healthy vending in the workplace. An employer toolkit 2012*, accessed December 04, 2013. <http://www.machc.org/documents/Healthy%20Vending%20Guide%20-%20FINAL%2010%2002%2012.pdf>
- [46] McCarthy, Jerome, E. 1964. *Basic Marketing*. IL: Richard D. Irwin.
- [47] McDonald, Lynette and Sharyn Rundle-Thiele. 2008. “Corporate social responsibility and bank customer satisfaction: a research agenda.” *International journal of bank marketing*, 26(3), 170–182.
- [48] McEacher, William A. 2012. *Economics: A Contemporary Introduction*. Mason: Cengage learning
- [49] McElhaney, Kellie A. 2008. *Just good business. The strategic guide to aligning corporate responsibility and brand*. California: Berrette-Koehler Publishers, Inc.
- [50] Meadowcroft, James. 2000. “Sustainable development: A new(ish) idea for a new century?” *Political Studies*, 48(2), 370–387.
- [51] NAMA FitPick guide. 2008. *FitPick. Energize your vending. A planning and implementation guide for worksites and community organizations*, accessed December 05, 2013. http://www.fitpick.org/files/Fit_Pick_Toolkit.pdf

- [52] NAMA. 2012. *Sustainability assessment tool*, accessed October 27, 2013. www.vending.org/index.php/vending/green-your-business
- [53] NAVSA communique de presse. 2012. *Les entreprises de la Distribution Automatique lancent le label « feelGood. De la variété dans votre distributeur*, accessed December 05, 2013. http://www.navsa.fr/navsa/pdf/15507_CP-NAVSAfeelGood--mai-2012.pdf
- [54] Niu, Yuan, Jonathan Lu and Abdullah Khan.1993. “Spatial systems approach to sustainable development: A conceptual framework.” *Environmental Management*, 17(2), 179–186.
- [55] NVA. 2013. *Ethics and Charter*, accessed December 04 2013. http://www.nationalvendingassociation.com.au/ethics_charter.htm
- [56] Park, Sohyun, William M. Sappenfield, Huang Youjie, Sherry Bettylou and Bensyl Diana. 2010. “The impact of the availability of school vending machines on eating behavior during lunch: The youth physical activity and nutrition survey.” *Journal of the American dietetic association*, 110 (10), 1532–1536.
- [57] Popovic, Dragana. 2006. “Modelling the marketing of high-tech start-ups.” *Journal of Targeting, Measurement and Analysis for Marketing*, 14(3), 260-276.
- [58] Porter, Michael and Mark Kramer 2006. “Strategy and society: the link between competitive advantage and corporate social responsibility.” *Harvard Business Review*, 84(12), 78–92.
- [59] Powell, Lisa. M., Jamie. F. Chriqui, Tamkeen Khan, Roy Wada and F.J. Chaloupka. 2013. “Assessing the potential effectiveness of food and beverage taxes and subsidies for improving public health: a systematic review of prices, demand and body weight outcomes.” *Obesity reviews* 14(2), 110–128.
- [60] Rafiq, Mohammed and Pervaiz K. Ahmed. 1995. “Using the 7Ps as a generic marketing mix: An Exploratory Survey of UK and European Marketing Academics.” *Marketing Intelligence and Planning*, 13(9), 4–15.
- [61] Regulation (EU) 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers. 2011. *Official Journal of the European Union*. L 304/18
- [62] Rio. 1992. *Report of the United Nations conference on environment and development*, accessed October 27, 2013. www.un.org/documents/ga/conf151/aconf15126-4.htm
- [63] Robinson, Leslie A., William T. Dalton, Leslie M. Nicholson. 2006. Changes in Adolescents’ Sources of Cigarettes. *Journal of adolescent health*, 39(6),

861–867.

- [64] Saltmarsh, Mike and Andrew Hall. 2007. “Developments in Vending – AVEX 2007. Conference report.” *Journal of foodservice*, 18, 161–163.
- [65] Schneider, Sven, C. Meyer, S. Yamamoto and D. Solle. 2009. “Implementation of electronic locking devices for adolescents at German tobacco vending machines: intended and unintended changes of supply and demand.” *Tobacco control*, 18(4), 294–301.
- [66] Selecta Group. 2012. *Our sustainable approach*, accessed November 27, 2013. www.selecta.com/uploadedFiles/Global_Resources/Documents/Sustainability_Report/Selecta_CorporateSocialResponsibility_2012Report_lores.pdf
- [67] Spangenberg, Joachim. 2004. “Reconciling sustainability and growth: criteria, indicators, policies.” *Sustainable development*, 12(2), 74–86.
- [68] Stockholm. 2012. *Conference report. Stockholm+40 – partnership forum for sustainable development*, accessed October 27, 2013. <http://www.regeringen.se/content/1/c6/19/48/95/5ad703ca.pdf>
- [69] Takei, Hideki., Torrey Hewitt, Michael Bantog and Sana Becker. 2011. “Evolutional dynamism and theoretical model of environmental and operational transformation in vending machine retailing in USA and Japan.” *Business Management and Strategy*, 2(1), 1–8.
- [70] Trusins, Jekabs. 2011. “Sustainable development strategy of multilevel spatial system.” *Scientific Journal of Riga Technical University* 2, 8–13.
- [71] Wiecha, Jean.L., Daniel Finkelstein, Philip. J. Troped, Maren Fragala and Karen E. Peterson. 2006. “School vending machine use and fast-food restaurant use are associated with sugar-sweetened beverage intake in youth.” *Journal of the American dietetic association* 106(10), 1624–1630.
- [72] WCED. 1987. *Our Common Future*. Oxford University Press.
- [73] <http://ec.europa.eu>
- [74] <http://www.fairtrade.net>