



Shaping Tourism Futures®

*AIEST COMPETITION FOR SUSTAINABLE
TOURISM*

*- ECOLOGICALLY DEGRADABLE HARD SHOWER
UTENSILS*

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Abstract

The following text describes an innovative approach to address the enormous plastic waste in the upper hotel sector. As a part of the customer service in the 4- and 5-star hotel segment, each guest is provided with shower utensils. Those are conventionally made of plastic and are replaced after a stay. This causes a huge consumption of single used plastic. To counteract the described problem an almost packaging-free and ecologically degradable solid shampoo bar is developed and presented in the core part. Based on already established products and their quantities, the necessary demand of the solid bar was calculated. Therefore, two different sizes of the product were created, to avoid unnecessary waste. One size is the "business size" for up to two uses and a "weekly size" for up to seven days. A cost calculation was then drawn up and compared the new product with the conventional ones. As a result, the solid bar is not highly more expensive than the present used products and could cause a scale effect by using the weekly size. Beside the possible financial advantage, the hotels could use the product for image benefits and to lower the impact on the environment. Additional aspects, like distribution and socially responsible production are also highlighted. Finally, the project team critically questions their concept and points out possible weaknesses such as price calculation.

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1 Introduction and problem description

Tourism is an omnipresent topic. Even if the number of trips has decreased due to the current situation of the global corona pandemic, travel has always been a wish for many people over centuries. Travel does not only enhance more tolerance and exchange of cultures, personal development and self-evolvement, but also represents an important economic sector for almost every country in the tourism industry. For example, in Spain tourism accounts for almost 14.6% of GDP, while even in an automobile-dominated country like Germany, tourism contributes 8.6% of the national GDP (Statista 2020).

However, tourism could cause many negative effects on the local and global level. These include not only social and economic discrepancies, but also environmental ones, such as high water, energy and land consumption, emissions pollution and huge waste of plastic. To address the ecological defect, a concept for reducing the plastic consumption in the hotel industry is developed, by using the Design Thinking process. After all, plastic not only pollutes the oceans and the land, but is also a threat to the entire ecosystem. According to a study by WWF, people around the world consume an average of 5 grams of microplastics per week per person (Kraas 2019).

2 Problem Solution: Ecologically degradable non liquid shower utensils

This study has considered in which area of the hotel industry causes large amounts of plastic. One of the parts with the highest consumption is the bathroom, which often offers free hygiene & shower products, at least in the upscale hotel industry. If we take only the world's largest hotel chain, Marriott International with its around 7000 hotels, approximately 500 million disposable bottles for shampoo and conditioner are used annually. This corresponds to about 771 tons of plastic (Marriott International Newscenter 2018).

This is only one example of the enormous plastic consumption of shower equipment in hotels, which was an inspiring spark to the idea of developing a prototype to reduce plastic consumption in hotels without the requirement of major structural changes. Based on this approach the idea is to replace disposable shower items in plastic containers with ecologically degradable non-liquid shower utensils.

2.1 Product description

Ecologically degradable non-liquid shower utensils are solid round drops, which in combination with water turn into a foamy state and can therefore be applied to hair and body as usual. It should be considered that after drying, they change back into a non-liquid state. The described product doesn't contain parabens, mineral oils, PEG and silicones and is therefore ecologically degradable and minimize water pollution and mining of non-renewable resources. In addition to the saving of plastic in the product, e.g., by not using silicones, the solid state of the product also makes the packaging plastic significantly needless (Saskia Engels 2018). A complete renunciation of plastic is unfortunately difficult to realize for hygienic and financial reasons. Therefore, the articles should be packed only in a paper with a thin foil, made of recycled plastic. To emphasize the positive effect of plastic reduction, the non-liquid shower utensils should be offered in two different sizes. These sizes can be categorized as: a two-day portion for business travelers (figure 1) and in a weekly portion for vacationers (figure 2).



Figure 1 Business Size (2,5 cm x 1 cm x 1 cm)

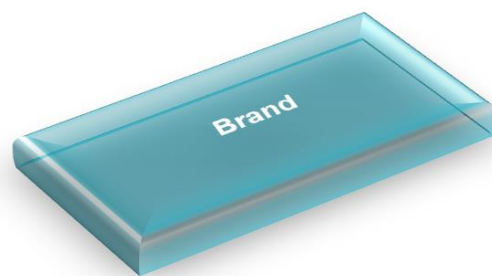


Figure 2 Weekly Size (5 cm x 2,5 cm x 1 cm)

In order to avoid unnecessary expenditure, the shower articles can be provided with natural gender-unspecific smells, as Aloe Vera or mint. The idea so far only refers to shampoo, shower gel and conditioner and excludes other shower utensils.

2.2 Costs comparison in market

Referring to already existing products of established labels in the market, the required size and price of the new product has been calculated. To do so, the brand Foamy was selected as an example of a provider for ecologically degradable solid shampoo. As a representative of a supplier for conventional shampoo for the hotel industry, the company XXL Gastro has been chosen. As it can be seen in the table, conventional, liquid shampoos, are presented in milliliters and the solid shampoo is in gram. For a better interpretation of the table, the unit gram has not been converted into milliliters.

Original Price and Size	Price of suppliers per 100 g/ ml	Portion per shower	Price per shower	Price for business size (two days)	Price for weekly size (seven days)
Foamie: 80 g for 4,95 €	100 g for 6,19 €	3,2 g	0,20 €	0,40 € for 5,4 g	1,40 € for 22,40 g
XXL Gastro: 1000 ml for 19,00 €	100 ml for 1,90 €	20 ml	0,19 €	0,38 € for 20 ml	1,52 € for 80 ml

Table 1 Cost structure solid shampoo bar in comparison to conventional shampoo

The company Foamy offers on the market 80 grams of their shampoo for 4.95 €, which corresponds to approximately 25 hair washes (Foamie 2020). That represents 3.2 grams and nearly 0.20 € per hair wash. XXL Gastro, a big online supplier for hotels, offers 50 bottles, containing 20 ml for 19 € (XXLgastro 2020). One bottle of 20 ml corresponds to two hair washes and accordingly about 0.38 €. The direct, financial comparison of both suppliers shows that a stay of 2 days causes a marginal difference of 0.02 € per unit.

Assuming that in a conventional hotel the bottles are exchanged after consumption, four portions of liquid shampoo per week are needed. The weekly size of a shampoo bar, which corresponds approximately to seven hair washes create a cost advantage of 0.12 €. As a possible result of the compact size of the solid shampoo bar, the delivery as well as the storage costs will be diminished in comparison with the common liquid products.

3. Benefits of the product

In the following sections, the suggested product advantages concerning the economically, as well as environmentally benefits are discussed.

3.1 Benefits for the hotels

Even if the costs for the production and implementation of the innovative product turn out to be higher than assumed in the previous step, the presented product holds a great potential for positioning and image strengthening of hotels in the market.

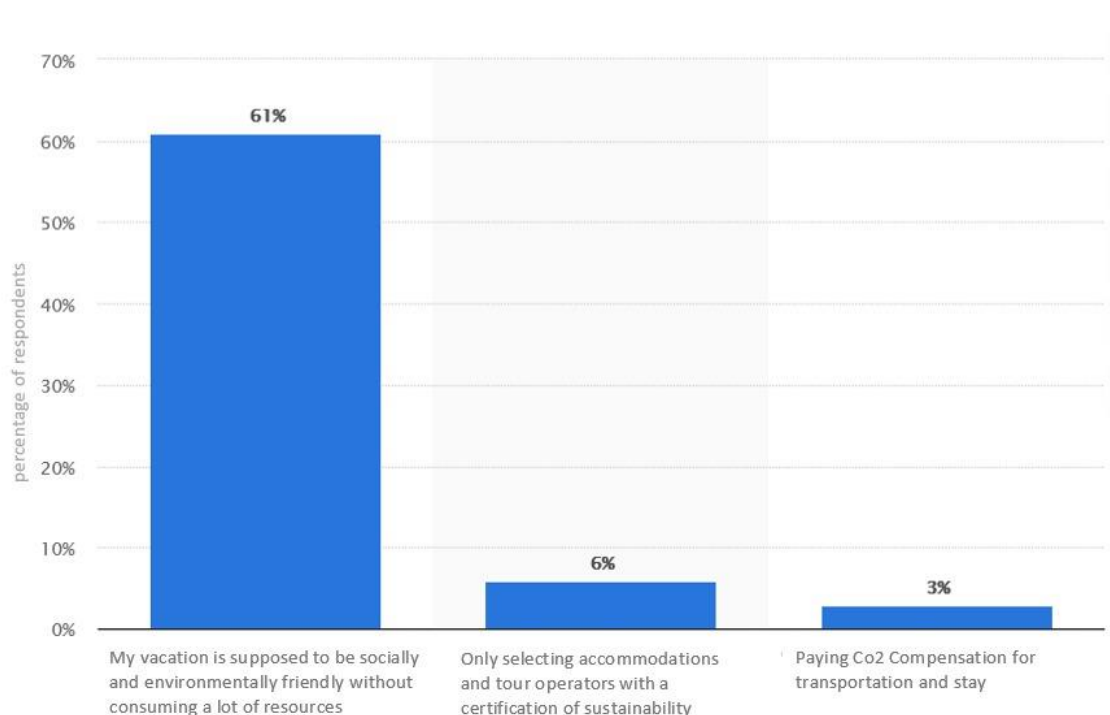


Figure 3 Importance of sustainability for tourists

In a face-to-face survey of 2019, 57 % of the tourists from the German-speaking countries expressed their desire regarding their vacation to travel socially compatible, resource-saving and/or environmentally friendly as much as possible. For 23 % of those surveyed, sustainability was one of the decision-making criteria among other aspects, when it came to plan their vacation trips. A further 4 % opted for the more sustainable products only if the price remains the same compared to the non-sustainable products (Graefe 2019). The statistics further illustrate that sustainability concerning vacation trips is a large topic and became more important for customers over the last few years. In 2017, 53.7% of the travelers focused on sustainability, which

correspond to 7.3% less than in 2019 (Statista 2018). The solid shampoo enables hotels to demonstrate their commitment of being environmentally friendly to their customers without further effort. Thus, achieving higher benefits with low marketing efforts and without substantial change of the operational sequences a possible improvement of the image is obtained. In addition, the accommodation facilities which use the product can differentiate themselves from competitors and possibly stay better in the memory of the customers due to this USP.

3.2 Benefits for the environment

As already mentioned in the product description, the solid shampoo bar saves a huge amount of plastic, used for the packaging. By using recycled plastic for the packaging film, resources are conserved. Furthermore, the product is ecologically degradable and does not additionally contaminate the wastewater and is particularly compatible with the human organism, but also with flora and fauna (Rehberg 09.11.2019). This feature is of special interest in developing countries, which are often without standardized wastewater systems. In those countries often the wastewater flows into already existing rivers, lakes and the ocean without further treatment and contaminates those (Lenz 14.02.2019).

4 Further ideas

In the following chapter the authors would like to deal with further ideas, which however do not influence the core product but represent a possible extension.

4.1 Product as additional income and marketing instrument in the hotel industry

One of the resuming ideas is to offer the product in the internal hotel shop, which is often available in the higher hotel segment. In this way, customers who may not have any previous contact with the solid shampoo bar, have the chance to get in touch with the test size in the hotel and can afterwards purchase the already tested product. The solid shampoo bar, which is specially produced for the respective hotel, could be sold in conventional sizes for multiple uses in a metal box branded with the hotel logo. Hence, on the one hand further incomes can be generated and on the other hand the name recognition of the hotel can be increased.

4.2 Additional sustainable aspects

An improvement of the already explained product refers to the type of packaging. Instead of the recycled plastic film, it would be possible to switch to a completely sustainable packaging. One possibility would be a beeswax foil as an alternative.

Besides the packaging, the project team has also thought about social impact and could imagine having the product produced by disadvantaged groups on a local basis. This could be the case, for example, in an open workshop for disabled people or as a project with long-term unemployed people. Fair working conditions and appropriate remuneration should be guaranteed. In this way, the economic value added would also remain in the local area.

5. Conclusion and critical outlook

To conclude, the team would like to critically examine the product and point out possible weaknesses.

The cost calculation in section 2.2 were set up, on the basis of existing products in the market. These costs could be also higher for the exclusive production of a hotel. If someone would like to take up the aspect of the social lastingness, the prices rise immensely and could be no longer convertible e.g. for individual hotels as well as family businesses. Moreover, the idea of social sustainability is the secondary priority for the time being and can be taken up again if the product is successfully implemented on the market. Nevertheless, the project team assumes that this product is mainly of interest for larger hotel chains.

The project team is aware that this product is an existing one in a new context. It is a small change for the hotels which can have a huge impact on the environment.

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