CONTRIBUTION TO AIEST

Contest of Fresh Ideas:
Tourism systems for a sustainable future!

Julia Martin

Elisa Hallschmid

Table of Contents

1. Introduction

The question dealt with in this contribution to the Contest of Fresh Ideas by AIEST is how to transform tourism into a generally more sustainable phenomenon. More specifically, it focuses on the question of how to make tourism sustainable without a sustainable society.

Today's prosperity worldwide is greater than ever. However, at the same time the use of natural resources and the energy consumption are increasing, to provide the living standard humans in modern societies are used to. Global trends like the exponential growth of the world population, the increasing equity gap and the loss of biodiversity have a great impact. In order to address the global challenges that are arising due to these developments, the United Nations agreed on the 17 Sustainable Development Goals in 2015. The core idea of sustainability is to guarantee the same chances that this generation has now for future generations, and to provide a balanced distribution of wealth between the rich and the poor. Sustainability has three core areas that must be addressed: economical, ecological, and social aspects. Only with a holistic approach the global sustainability problem can be solved, and the society plays a key role in the implementation of change. Everyone makes an impact on the environment by their way of consuming and this also includes tourism.

2. Premises and discussion of sustainable tourism without a sustainable society

Our society is not living in a sustainable way even though the awareness of its importance has risen remarkably during the last 20 years. For example, initiatives like Fridays for Future are enjoying increasing attention and especially reaches among the younger generation. The urgence of the approach, that action must be taken now is supported by the fact that there are more and more effects of climate change that are observable and noticeable as climate catastrophes occur more frequently and strongly than ever. The Corona crisis has somewhat improved the climate on our planet especially during the first 6 months of 2020 and the restricted freedom of travel has shown how significant the role of tourism is, regarding climate change and the pollution of the earth. A survey of the German NIT (= Institut für Tourismus- und Bäderforschung in Nordeuropa GmbH: Institute for Tourism and Spa Research in Northern Europe Ltd) showed the attitude-behaviour-gap of sustainability in tourism that is decreasing but still present. While 56% percent of people have a positive attitude towards sustainability in holiday travel, only 4-8% state that sustainability was a deciding factor in their travel decisions[1]. The approach of this work was based on the fact that there already is awareness, but society still does not live in a sustainable way.

It is assumed that the society, which does not live in a sustainable way would do so, if there were no disadvantages resulting from choosing sustainable products. That means that the society itself is not unsustainable, but that there is a certain extra effort that makes living sustainably more complex. Sustainable alternatives have to be found, which means an effort in time and the change of habits.

[1] Schmücker, et al (2019, p. 12): Nachhaltige Urlaubsreisen: Bewusstseins- und Nachfrageentwicklung, [online] https://www.bmu.de/fileadmin/Daten_BMU/Pools/Forschungsdatenbank/fkz_um18_16_502_nachhaltigkeit_reiseanalyse_2019_bf.pdf [24.01.2021] (Translation to English from the original)

Consequently, the biggest part of society just chooses the more comfortable way of living. We also assume that a big obstacle in this context are the extra costs of sustainable products.

Therefore, an added value must be provided for the consumers so that they rather choose sustainable products over conventional ones, and for producers to offer more sustainable products. Additionally, the awareness for sustainable products has to be raised.

By removing the obstacles of more effort in context of time and cost it is assumed that a bigger amount of people would choose to live in a more sustainable way and integrate sustainability in their daily life and travel decisions.

3. Possible solution: Eco-Points network

A possible solution is introducing a network formed by qualified sustainable partners and a cash-back system for the customers that provides discounts for the sustainable products of the partners. Customers that choose to use the network do not have to pay for it. They can download an app and create an account. With the card in the app they can collect Eco-Points with every purchase of a partners' product, depending on the money they spend. After collecting a certain amount of Eco-Points, they can get a discount for products of a partner they choose. In order to promote the use of sustainable offers both in everyday life and tourism, partners of both areas are members of the network.

In the first prototype the network focuses on the city of Munich in Germany for sustainable offers of daily life, which includes the public transport system of the "Münchner Verkehrsgesellschaft" (MVG) as well as health food stores (HFS). The touristic partners are situated within the state of Bavaria in the south-east of Germany. On the one hand hotels with a certificate that covers ecological, economical and social aspects of sustainability can become members, on the other hand the "Deutsche Bahn", which is the main provider of public transport by train in Germany.

All hotels within the state of Bavaria with one of the following selected certificates will be asked to join the network: Earth Check, Green Globe, Green Key, Green Sign, TourCert. Additionally, other hotels with a certificate for sustainability may also apply and will be accepted as members upon individual assessment, to ensure the quality of the sustainable offers.

3.1 Advantages for the customers

The customers can live in a more sustainable way without the disadvantages normally resulting from it. They do not have the extra effort of checking which store or hotel is really sustainable, or where the closest sustainable store is. They also save costs because by purchasing the partners' offers, they can save money by getting discounts. And in general, they get a better feeling by living in a more sustainable way.

In the context of tourism, the idea is that if our customers live in a sustainable way during their daily life in Munich, they can collect Eco-Points and benefit from resulting discounts, which they can use when going on a holiday. The result is that the sustainable holiday does not cost more than the conventional one and they save time, because partner hotels are already proposed all over Bavaria so they do not have to take the time to search on their own. They also get the security that their money

is well spent and that they stay in the region, which can contribute to reducing the carbon footprint. Furthermore, regarding the actual circumstances of the COVID-19 pandemic, customers know the applying rules of their region and can avoid a quarantine that may be necessary after being abroad.

3.2 Advantages for the partners

Being part of the Eco-Points network is excellent publicity for the participating partners. They are listed in the app and it is easy to find them on the map. They also improve their image because sustainability is the networks' main focus, and this can provide a unique selling proposition. Being part of the network also helps in customer acquisition because there may be customers that become aware of the partners through the network. Additionally, the partners do not come up for the discounts the customers receive. Instead, the price reduction is refunded by the providers of the network, using the membership fees from the partners.

4. Business model for the Eco-Points network

This leads directly to the business model for the Eco-Points network.

The expenditures consist of fixed costs for the software and the App and variable costs for the reimbursements. These costs are covered by the fees we get from the partners. The more partners participate in the network, the more impact can be made. The discounts the customers get are reimbursed from the Eco-Points they collect. One Eco-Point corresponds to 10 cents and only packages of 150 Eco-Points corresponding to 15€ can be used for a discount. When shopping the partners' products, the customers get a certain percentage of their purchased amount saved as Eco-Points. The three types of partners of the first prototype are stated in point 3. HFS customers get 4% of their purchased amount credited as points, as well as hotel customers. At MVG the conversion factor is 2%. When estimating the number of partners, customers, and the frequency in which the customers visit certain partners, the following can be displayed:

Assumption:							
Partners	100		Health food stores (=HFS)				
			Hotel				
			MVG	(Public Transport in Munich)			
Per purchase ..% of the price is credited as points							
HFS	4%						
Hotel	4%						
MVG	2%						
Customers	260				Number of		
					Purchases total		
Go to HFS	2	times per month		resulting in	520	times for all customers	
Go to Hotel	0,1667	per month (2x/year)		resulting in	43,3	times for all customers	
Go with public transport	44	times per month		resulting in	11440	times for all customers	

When estimating the expenses one customer makes at the different types of partners per visit, the following is resulting regarding the amount of costs that have to be covered:

	Expenses per purchase	Points worth one purchase	Points per purchase	Number of Purchases per month	Expenses per month	Points worth per month	Points per month
HFS	20 €	0,80 €	8	520	10.400,00 €	416,00 €	4160
Hotel	200 €	8,00 €	80	43,3	8.660,00 €	346,40 €	3464
MVG	3 €	0,06 €	0,6	11440	34.320,00 €	686,40 €	6864
					53.380,00 €	1.448,80 €	

Total expenses per month	53.380 €		= Points worth one purchase * Number of purchases per month
Total points worth per month	1.449 €		
			= Expenses per purchase * Number of purchases per month
Amount that is at least necessary to cover costs =		1.449 €	
Membership fees have to cover at least the amount of		**1.449 €**	+ Fix Costs

The Membership fees, that are the main source of income, vary with the turnover or the number of employees of the partner to guarantee a fair distribution. For this classification we have taken the German law of Commerce (§267 HGB) as an aid for distinguishing the different sizes of companies, as following:

Membership fees					Estimated number of partners	
	Employees		Turnover	Fee		
"Kleinstkapitalgesellschaft"	< 10	or	< 0,7 Mio	10 €	65	HFS
"Kleine Kapitalgesellschaft"	< 50	or	< 12 Mio	20 €	30	Hotel, HFS
"Mittelgroße Kapitalgesellschaft"	≤ 250	or	≤ 40 Mio	30 €		
"Große Kapitalgesellschaft"	> 250	or	> 40 Mio	50 €	5	MVG
Membership fees per month	1.500 €	(= 65*10€ + 30*20€ + 0*30€ + 5*50€)				

The number of partners of the different sizes is estimated. When taking into account all the numbers and calculations from above, as well as the fix costs, results the following:

Costs			Revenues	
Variable Costs			**Variable Revenues**	
Reimboursements	1.449 €		Membership Fees	1.500 €
Fix Costs			**Fix Revenues**	
Software	50 €			-
Revenues	1.500 €			
Costs	− 1.499 €			
	1 €			

As the main intention is to cover the arising costs this calculation shows how the system of the Eco-Points network could work. Any gained profit would be used to reinvest and expand the network.

5. Functions of the prototype

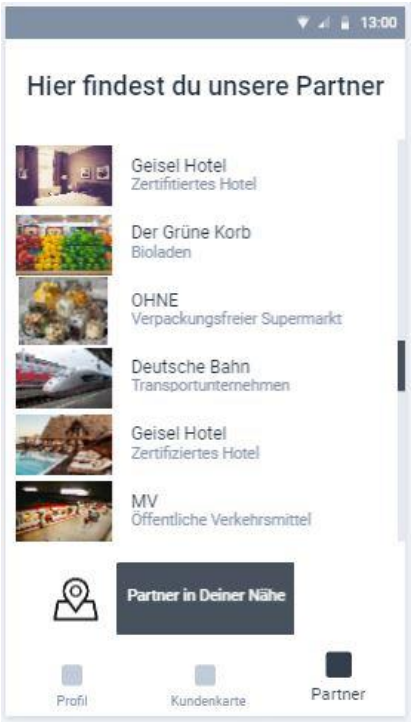
Now the functions of the first prototype are explained.

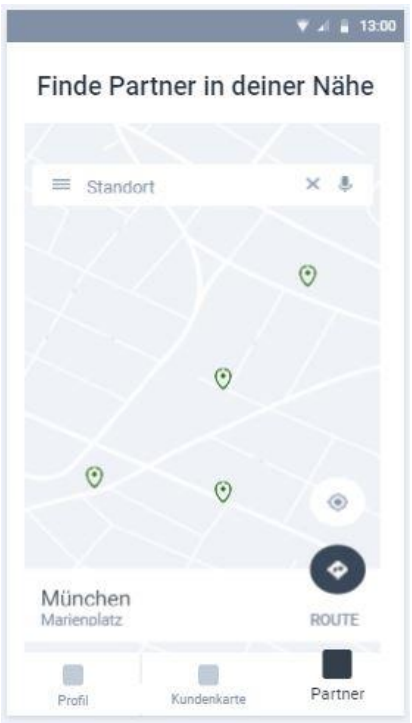
To dispel any doubts, it is important to note that personal data would only be processed for the functions of the Eco-Points system. They would be erased after two years and not be passed to any third party. Personal data is needed from the partners and the customers and is processed by the providers of the network.

The following images show the Eco-Points card and the calculation of points displayed in the application.

When a customer would like to collect Eco-Points or get a discount on their purchase, the barcode in the application is scanned before the payment. By that the price of the product is forwarded to the software of the network. The software processes the price of the product and converts it into Eco-Points that are credited on the customers' account. A discount can be used as soon as the number of Eco-Points corresponding to 15€ is reached. Discounts can only be used in packages of 15€. The customer will be asked if he wants to get a discount for the current purchase. If he chooses to do so, the points on the customers' account are reduced accordingly and the price of the product is reduced by discount packages of 15€. The reduction depends on the number of Eco-Points and the number of 15€-packages that result from that number. The provider of the network is automatically charged the discount, that is to be paid to the partner who sells the product.

Apart from the Eco-Points card the application provides a list of all the partners and a map that shows their location.





6. Further considerations

There are several ways to extend the of Eco-Points system. As stated, the first Prototype would concentrate on daily partners in the city of Munich and touristic partners all over the state of Bavaria. When extending the network other cities and states of Germany could join the network to expand the range. Also, other types of partners like campsites, tour operators, bike rentals etc. could join the network. Thinking about the bigger picture other countries could participate in the network and provide partners from all over Europe or even the world. The main goal of the network is to connect customers and partners to support the sustainable way of living. So why not aim for a global scale? However, the critical mass must always be considered, meaning the minimum amount of partners that is needed. As the system is financed through the partners' fees there is always a minimum number of partners that has to be reached to cover costs. By trying a lot of variations regarding number of customers and number of partners in the business model explained in point 4, the minimum number of partners, that is needed was calculated. In average one customer needs at least 0,385 partners to cover the costs. That means the system works when "Customers * 0,385 <= Partners". The following shows details about the calculation of this equation:

Revenue with an estimated number of	100 Partners and 260 Customers	+1 €
	100 Partners and 261 Customers	-5 €
-> Per Partner at least 2,6 Customers to cover costs		
-> Per Customer at least 0,385 Partners to cover costs		
1.000 Customers need 385 Partners		
1 Customer <= 0,385 Partners		
Customers * 0,385 <= Partner		