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# CHALLENGES OF SUSTAINABLE TOURISM MANAGEMENT: URBAN REGENERATION THROUGH INFORMATION TRANSFER AND COMMUNICATION TECHNOLOGY

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**Abstract:** *Study aims at broadening the understanding of sustainable tourism management through social innovation methodology by researching the impact of information transfer and communication technology in order to advance the collaboration between stakeholders in the field of sustainable tourism. The study was conducted in the capital of Slovenia, however theoretical and practical implications transcend Ljubljana's city borders. The complex nature of social innovation research has enabled the provision of a more realistic overview of stakeholders' expectations in terms of sustainable tourism management in the capital. Data gathered represents 326 social innovation questionnaires that were analyzed with NVivo software according to the main node of information transfer and communication technology.*

**Keywords:** sustainable tourism, city management, urban regeneration, communication management, stakeholders analysis

**JEL Code:** M1

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## Introduction

Sustainable tourism aims to work on the areas that represent a problem in mass tourism sector, however also sustainable tourism encounters in its operation many challenges and one of them is how to reach people who share the values of sustainability, locality and connectivity. Digital technology provides a suitable solution, but demands good coordination and collaboration of a wide variety of stakeholders, with many different interests and ways of doing business. Urban regeneration benefits from inputs of professionals, as well as local inhabitants and tourists that bring with them different experiences and insights, therefore in this paper we are presenting the results of extensive social innovation methodology that was undertaken during cross-faculty project financed by European Social Fund in the capital of Slovenia.

## Social innovation management

Building resilient business community (van der Vegt, Essens, Wahlström & George, 2015, p. 977) requires collaboration of different stakeholders of higher education institutions, companies, communities, cities and

countries. „Social innovation refers to new ideas that resolve existing social, cultural, economic and environmental challenges for the benefit of people and planet. A true social innovation is systems changing (Quinn & Van Velsor, 2010), – it permanently alters the perceptions, behaviors (Mumford, 2011), and structures that previously gave rise to these challenges“ (The Centre for Social Innovation, 2015). Innovation is a social innovation (Osburg & Schmidpeter, 2013) if new idea has the potential to improve the quality or quantity of life (Pol & Ville, 2009, p. 881). It represents activities and services which aim to satisfy social needs and are performed in organizations which primary mission is social well-being (Mulgan in Mesojedec et al., 2012, p. 37). It provides innovative solutions for social problems where the provided solutions are more efficient, effective, more ethical (Brown & Treviño, 2006; Johnson, 1999; Olivier, 2012) and sustainable than existing ones and their impact is not intended for an individual benefit only, but for society as a whole (Fernando, 2011; Moulaert, MacCallum, Mehmood & Hamdouch, 2014). It is conducted through a complex process of the development of new products and services that brings lasting end efficient changes of behavior in the social and natural environment. In EU social innovation is mostly defined as a process of designing creative solutions in social entrepreneurship setting (Goldsmith, 2010) with the aim to find solutions for the social needs where the market and public sector do not provide sufficient answers (Gardner & Csikszentmihalyi, 2011).

### *Sustainable tourism*

As any other activities, tourism can produce positive as well as negative environmental and socio-economic effects (Becken & Paterson, 2006). It means that besides the positive impacts originated from creating and encourage complete tourists' experience (Bramwell & Lane, 2009), tourism also has negative influence on environment, such as the degradation of nature, pollution of coastal zones, and the construction of massive transport and building infrastructure (Sharpley, 2003) as well as damage caused by unplanned tourism development (Choi & Sirakaya, 2006). In that context, the concept of sustainability in tourism is basically focused, firstly, on minimizing activities that degrade the destination socio economic ecosystems and, secondly, on developing operative plans to restore these systems and its resources. Accordingly, the sustainability is perceived as the challenge for tourism planners responsible for properly balancing the tourism demand and supply and for predicting the future effects of tourism (Page, 2003). If the concept of sustainable tourism is not considered and properly included in the destination management strategy, tourism generally may produce above mentioned unacceptable outcome upon the physical environment and society in which it takes place (Cooper et al., 2006).

With the purpose to create as more as possible a pleasant place for people to live in and to visit, the sustainable tourism development is, approximately from the beginning of this century, faced with quite challenged objectives such as: decreasing negative socio-environmental impacts by protecting and preserving of environments (Holden, 2000), enhancing the well-being of host communities by more strategic tourism planning (Hall, 2000; Simpson, 2001), involving local people in decisions that affect their lives by empowering local pride and confidence (Marien & Pizam, 1997), contributing natural and cultural heritage conservation (Lane, 2009), providing more enjoyable experiences for tourists through more meaningful connections with the local people (Sanagustin Fons et al., 2011) and encouraging as more as possible community participation in all level (Hardy & Beeton, 2001).

Sustainable tourism over time becomes a highly attractive issue (Hall, 2000; Bramwell & Lane, 2009), representing slowly the inevitable segment of any tourism long-term development strategy. The question that still remain open is how to, in operation level, permanently integrate the concept of sustainability in each tourism related process, including all stakeholders and its interests. One of the most reliable supports to sustainable tourism strategy implementation is information and communication technology (ICT) (Ali & Frew, 2008) and related applications which facilitate information transfer and communication management within sustainable tourism development process.

### *Information transfer and communication management*

The imperative for destination management and related organization is to develop appropriate ICT tools to achieve and support, previously mentioned, goals and objectives within sustainable tourism process. Some potential challenges associated to the implementation of the ICTs applications in sustainable tourism, such as lack of expertise in ICTs functionality (Touray & Jung, 2010) or high procurement cost (McAdam, 1999) over time become minimized.

The authors Ali and Frew (2008) proposed a particular set of activities within sustainable tourism that can be significantly supported by ICT, namely: tourism planning, tourist experience, host community benefits, information management; sustain consumption, local participation and partnerships, location satisfaction, and transport. The emerging ICT tool with potential to serve, in wider context, above mentioned activities are furthermore proposed by another authors (Bahaire & Elliot-White, 1999; Brynjolfsson & Hitt, 2000; Buhalis & Law, 2008; Touray & Jung 2010) and summarized in following text.

- *Destination Management System (DMS)* considered as a destination management strategic tool (Brynjolfsson & Hitt 2000, Touray & Jung 2010) with potential to contribute to the sustainable tourism planning at destinations level, to enable the host community and to maximize the positive impacts of tourism by globally pointing out the value of ecosystems and resources (Buhalis, 1997). In other words, DMS is relatively long time ago, recognized as a platform to enhance the economic, ecological and socio- cultural structures of destination areas (Sheldon, 1993) which successfully manage tourism demand by supporting the visitor experience within the whole visitor travel cycle.
- *Geographical Information Systems (GIS)* asserted as useful instrument for the sustainable tourism development which improve processes such as: auditing environment conditions, examining the sustainability of locations for proposed developments, identifying conflicting interests and modeling relationships (Bahaire & Elliot-White, 1999). In research provided by Hasse and Milne (2005) is claimed that GIS usage combined with participative approach may provide framework for better understanding of all sustainable tourism attitudes and enhance accordingly stakeholder interaction in tourism planning.
- *Short Message Service (SMS)* is ICT application operating as text service with capacity to enhance sustainable tourism development (Buhalis & Law, 2008). The usage of this media on destination level highlights two relevant segments: firstly, the awareness of destination managers of SMS potential to announce information at various local events, and secondly, option to provide visitors with a quick, relatively cheap way of finding out all destination actualities (Touray & Jung, 2010).
- *Demographic or customer profiling system* (Buhalis & Law, 2008; Touray & Jung, 2010) is following significant ICT application with the potential to be used by destination management organization for strategic segmentation of existing visitor data, generating report management and providing visit e-correspondence (Buhalis & Law, 2008; Touray & Jung 2010).
- *Audio Guide* is described as ICT infrastructure that supports raising the visitor awareness through interpretation and communication and, accordingly, is useful in sustainable tourism development (Buhalis & Law, 2008). Using this infrastructure, enable visitors to avoid overcrowding and queue managements to operate more effectively (Touray & Jung, 2010).
- *Social Media Networks and User Generated Contents* are generally used by visitors in „dreaming“ the destination, then planning (and realizing) their trip to a desirable destination and finally sharing the experiences and emotions in post travel period (Buhalis & Law, 2008). Mentioned media presents quite a useful tool for finding additional information from complete destination domain. In terms of sustainable tourism diversification and related planning, Touray and Jung (2010) identified tripled role of these technologies: firstly, it increases the richness of content relevant to visitors, secondly it provide channels for better stakeholder engagement which lead to, as thirdly, encouraging the main principles of sustainability.
- *E-Mail* is perceived as cost effective and simple to use marketing tool (Buhalis & Law, 2008). It is used as a strategic distribution channel which target visitors and disseminate information (including newsletter and brochures) to visitors and strategic partners in order to spread the goals of sustainable tourism development (Touray & Jung, 2010) and to encourage its contribution to local environment.
- *Strategic Networks* (Buhalis & Law, 2008) are considered as ICT supported decision management processes, as well as strategic cooperation between various destination management organizations. According to Touray and Jung (2010), these networks significantly facilitates B2B communication and accordingly facilitate ICT acceptance and its integration in sustainable tourism business models.

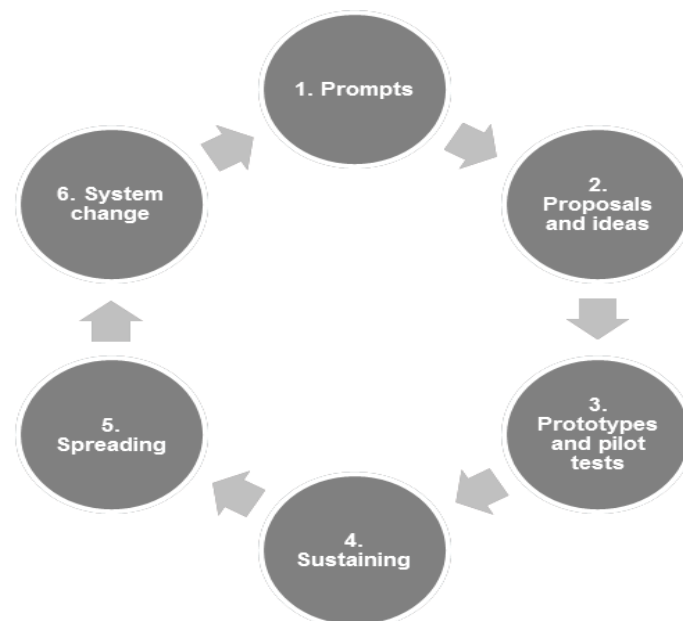
## Methodology

Qualitative research methods (Frankfort-Nachmias & Nachmias, 2008; Matthews & Ross, 2010; Patton, 2002; Roulston, 2010; Saunders, Lewis & Thornhill, 2009) were used for data gathering. Structured open-ended questionnaires lasted approximately one hour, depending on the participant. Focus group was conducted with expert at the end of data gathering phase from questionnaires in order to triangulate findings from the local community of Ljubljana. Additional public meeting was organized at the Faculty of Economics for interested public where findings were shared and upgraded based on the feedback. Project was conducted in 2015 and was funded by European Social Fund. Partners of the project were Faculty of Economics University of Ljubljana, Faculty of Architecture University of Ljubljana, Natural Sciences Faculty University of Ljubljana and company Kaaita, d.o.o. Ten students were trained to conduct social innovation questionnaires. 326 questionnaires were gathered in the field on sustainable tourism problems, proposals, ideas and solutions.

## Research design

Our research was undertaken in the capital of Ljubljana during spring 2015. Before conducting the social innovation we carried out preparation workshops for participating students of three faculties of University of Ljubljana who were conducting the 326 interviews that took approximately one hour. Social innovation questionnaire is structured and composed of seven main questions where participants develop social innovation solutions. In this paper we are presenting the results of the sixth question where participants expressed the best solution to their identified need on the basis of five proposed solutions for sustainable tourism management in Ljubljana and the field of sustainable tourism. Research design was carried out on the basis of social innovation methodology.

Figure 1: Social innovation methodology



Source: Murray, Caulier-Grice & Mulgan in Mesojedec et al. 2012, p. 39.

## Research analysis

Research participants were composed of Ljubljana's inhabitants (151 participants) and non-inhabitants/tourists (175 participants). Research data was inserted into NVivo Software and analysed according to the node "information and communication management". We coded the data in subfields of the main node and identified proposals within sustainable tourism management for a more efficient information transfer and communication management with the stakeholders within sustainable tourism sector in the capital of Lju-

ljana, which is the Green Capital of Europe 2016. Table 1 provides identified communication need through social innovation methodology that we named “information transfer and communication technology” node in software NVivo. Out of five most valuable solutions by participants at the end of the interview one social innovation solution was chosen and the most frequent and interesting ones are presented next to identified stakeholders who need to be involved for proper social innovation to be implemented.

**Table 1. Research findings – main themes**

Identified communication need	Social innovation solution
<b>Information transfer and communication technology</b>	treasure hunt by asking inhabitants of Ljubljana for clues
	brochure with coupons
	webpage where Ljubljana’s inhabitants would volunteer for sightseeing tours of tourists
	fairs of inhabitants, where inhabitants present their way of life to tourists
	space for mummies and their little children in parts of Ljubljana
	presentation of young designers on an event in the Congress square
	apps (eg. “make your favorite sLOVEnian dishes”)
	permanent cultural, sport & info meeting point during the day and night
	more communication about the problem of social inclusion into society
	writing facts on trees, houses, benches so tourists would know what happened with the thing during the history
	webpage portal that would enable connection with the local people
	book of tourist impressions
	diaries of inhabitants for tourists to read about their everyday life
	paths with information boards adjusted to different ages
	learn to cook Slovene dishes
	signs on the floor, buildings that direct creatively towards sights
	in-depth historic sightseeing with interesting and long-forgotten facts to majority of inhabitants and tourists
	app where tourists could publish their photos – tourist promotion of Ljubljana globally
	stories about eating habits of famous local people
	educated tourist guides
touchscreen map of Ljubljana in different languages in the center of Ljubljana that tourists could download to their smartphones; free wireless internet access	
information for individual sightseeing tours	
more touristic promotion on the main train and bus station in Ljubljana	
promotion of mountain hiking and natural sights	
social evenings organized for tourists and local inhabitants – social component	

Based on social innovation data collection of 326 questionnaires, 25 themes in the node of information transfer and communication technology were identified that were in the second research phase coded into four main social innovation solution codes (Table 2): 1) Engagement of local inhabitants; 2) Integrated sustainable tourism services; 3) In-depth connection to history and contemporary situation of a visited place; and 4) Empowerment of tourists.

**Table 2. Social innovation classification in the field of information transfer and communication technology**

Social innovation solution codes	Social innovation specification	Stakeholders involvement in implementation of communication solution
<b>Engagement of local inhabitants</b>	<ul style="list-style-type: none"> <li>- webpage where Ljubljana's inhabitants would volunteer for sightseeing tours of tourists</li> <li>- treasure hunt by asking inhabitants of Ljubljana for clues</li> <li>- fairs of inhabitants, where inhabitants present their way of life to tourists</li> <li>- webpage portal that would enable connection with the local people</li> <li>- diaries of inhabitants for tourists to read about their everyday life</li> <li>- learn to cook local Slovene dishes</li> <li>- stories about eating habits of famous local people – storytelling</li> <li>- social evenings organized for tourists and local inhabitants – social component</li> <li>space for mummies and their little children in living areas of Ljubljana</li> <li>- presentation of young designers on an event in the Congress square</li> </ul>	Ljubljana tourist office; inhabitants of Ljubljana; coordinating organization; ethnologists; Cooks; IT experts; celebrities; Hostel Celica; Quarters; janitors of living buildings; professional associations of designers; Chamber of Commerce Slovenia;
<b>Integrated sustainable tourism services</b>	<ul style="list-style-type: none"> <li>- permanent cultural, sport &amp; info meeting point during the day and night</li> <li>- paths with information boards adjusted to different ages</li> <li>- brochure with coupons</li> <li>- promotion of mountain hiking and natural sights</li> <li>- more touristic promotion on the main train and bus station in Ljubljana</li> </ul>	Tourist information office; businesses in Ljubljana
<b>In-depth connection to history and contemporary situation of a visited place</b>	<ul style="list-style-type: none"> <li>- more communication about the problem of social inclusion into society</li> <li>- writing facts on trees, houses, benches so tourists would know what happened with the thing during the history</li> <li>- signs on the floor, buildings that direct creatively towards sights</li> <li>- in-depth historic sightseeing with interesting and long-forgotten facts to majority of inhabitants and tourists</li> <li>- educated tourist guides</li> <li>- apps (eg. "make your favourite sLOVEnian dishes")</li> </ul>	youth; non-profit organizations; government; educational institutions; historians; geographers; landscapers; tourist guide association; digital community; IT sector
<b>Empowerment of tourists</b>	<ul style="list-style-type: none"> <li>- app where tourists could publish their photos – tourist promotion of Ljubljana globally</li> <li>- touchscreen map of Ljubljana in different languages in the center of Ljubljana that tourists could download to their smartphones; free wireless internet access</li> <li>- book of tourist impressions</li> <li>- information for individual sightseeing tours</li> </ul>	IT experts; tourists

Analysis of social innovation solutions provides an in-depth analysis of locals and tourists preferences towards sustainable tourism in Ljubljana. Focus is on creative, individualized exploration, socialization with locals and integrated virtual sustainable tourism services. Empowerment and engagement of local inhabitants is clearly evident which means that tourists miss being connected to locals and getting to know more about their way of life – authentic way of being in Ljubljana away from mainstream touristic offer. Communication technologies offer the means for integrated services in culture, sport and information provision. Internet offers also means where tourists can be empowered and promote Ljubljana based on their impressions and experiences with the rest of the world. However, they need to be given expression means in the virtual community by sharing platform for photos and blogs.

Sustainable tourism services need creative approach where tourists can design customized sightseeing tours enabled by information technology and many applications on their smartphones. Connecting and

enabling cooperation among different service providers is necessary in order to serve clients well. Professional associations of green and creative economy need to present themselves collectively and provide for themselves the selling channel as well as an interesting tourist service for interested clients. Culinary tourism was identified as underdeveloped and offering many opportunities for presenting tourists authentic tastes and habits of Ljubljana.

## Discussion

Based on the main identified themes for challenges of sustainable tourism management and its urban regeneration through information transfer and communication technology we provide illustration cases in four identified codes areas.

### *Engagement of local inhabitants*

Local inhabitants need to be invited and provided the means to collaborate in sustainable tourism services and products. There are many employment options in this growing sector, therefore local authority first needs to provide them with strategical orientation for future development of Ljubljana and their active role in its implementation. Important aspect in engaging the locals in sustainable tourism is also preservation of local heritage and social component: *“By writing diaries writers would earn their living and also entities mentioned in their diaries (eg. Restaurants) would be compensated. Writers would be composed of different profiles of people, such as students, pupils, employees, retirees from different professions (music, health, industry, banking sector, etc.) and different nationalities in Ljubljana (immigrants). Writers would write 3-7 days and in all the 4 seasons”* (Participant M\_P\_1; female, 26 years, moved to Ljubljana).

Local inhabitants have a lot of tacit knowledge that cannot be found in books and would be interesting to hear, feel and experience. Food is common to all people, we all need to eat but the way we prepare our food is culturally constructed and learned. Tourists are interested in demonstrations how traditional Slovene food is prepared. Storytelling is an interesting tool to bring Slovene culinary heritage to tourists. Books and workshops about what Slovenes used to eat could be brought to tourists focused on what famous Slovenes, such as national poet France Prešeren or architect Fabiani used to eat. Besides recipes and stories, ingredients can provide an interesting learning and business opportunity for locals as local food supply is an important part of sustainable tourism. Ljubljana lacks the promotion of “gostilna” – restaurant with all Slovene dishes (slo. *žganci, fritaja, močnik, budelj, matevželj, ješprenj, kranjska klobasa, tenstan krompir, žlikrofi, kremšnite*). Not only tourists, also local people often do not know ingredients and preparation of traditional local dishes. “Gostilne” would have local music and would enable lessons of local dances (Participant S\_S\_5; female, 30 years, tourist).

### *Integrated sustainable tourism services*

Online portal that would provide information about concurrent events and offer apps to tourists needs to be combined with Tourism offices, leaflets, “balloon promotions of events” (Participant T\_F\_9; female, 37 years, tourist). Information seeking is carried out mainly online; therefore tourists need to be able to equip themselves before their journey with all vital information. Participants miss permanent cultural, sport & info meeting point during the day and night, where they expressed specially the lack of information about sport events and exercises possibilities for those tourists who stay longer or would like to join jogging exercises through Ljubljana. In the sightseeing and sports activities age needs to be given more attention as elderly tourists are a segment that could be attracted to Ljubljana due to its many cultural treasures and culinary delights. Ljubljana is also a city where all main attractions are within walking distance which is an important fact when designing sustainable tourism options for elderly tourist population. On the other size, Ljubljana is often too small for many tourists, therefore Ljubljana tourism services need to be integrated with other tourism providers in other regions and cities to offer tourists and integrated sustainable tourism experience. Main integrator could be main train and bus station – a coordinator of trips and experiential workshops.



### *In-depth connection to history and contemporary situation of a visited place*

Tourist sightseeing could be adjusted to different segments of tourists, such as sportsmen, people who like to read, people who enjoy history, etc. Promotion of social issues within Ljubljana and presentation of sub-groups within Ljubljana is needed. Tourist guides need to be from different profiles, e.g. Archaeologist tells an anecdote about digging up remains of Emona, historian presents time of Ljubljana during the World War. Old buildings in Ljubljana could be revived through presenting their stories. Tourists need to be involved in different experiential tours where they set themselves in certain time frames and cultural settings. "*Suburbs need to be incorporated into the experiential tourism, next to main touristic points*" (Participant S\_S\_1; female, 21 years, inhabitant of Ljubljana).

Instead of hiding social problems in the capital, they can be turned into social innovation framework where sustainable tourism provides paths toward socially responsible solutions. Youth unemployment is a problem in all EU countries and globally therefore opening space for youth to seek communication channels openly also with tourists is one of the ways local authority can help in solving this problem and expand sustainable tourism services. Ownership of a tree, bench or a building provides an emotional connection that stays even after the tourist leaves the city and also means extra money for renovation, protection and revitalization of an urban area. Tourists could be offered an online platform where they can buy symbolically a piece of artefact and become "godfather" of protecting cultural or natural heritage". Although, there might be discussions about locals owning their city, one needs to be aware of priorities – protection of cultural and natural heritage for future generations or concurrent ownership.

### *Empowerment of tourists*

Sustainable tourists are well educated tourists that like to have all necessary information kept in virtual environment. Internet offers quick access to information, changes of event management and reservation options to track availability. Ljubljana app enables tourists all vital information on one portal, ranging from history, logistics, transport, food, shopping. "*Tourists would also have an option to upload their photos which would provide authentic documentation of sustainable tourism experiences. The winner of the most authentic photograph would get a Slovene souvenir. Application could be free of charge for iPhone in Android system users. Through it tourist could promote sights that are not so well known and tourists themselves discover, value and recommend them. That way Slovene tourism providers would also gain input what tourists miss or especially like, segments of tourists coming from different countries, of different age, etc. This would also be a promotion for Slovene designers and producers*" (Participant S\_S\_16; female, 25 years, Ljubljana inhabitant).

Participants in the study also expressed the trend of individualised sightseeing, therefore sustainable tourism provider needs to think of and design such services where tourists will be able to get a rich cultural experience on his/her own. Touchscreen map of Ljubljana in different languages in the centre of Ljubljana where tourists could download the map to their smartphones would mean modernisation of sustainable tourism offer. Next to it tourist could submit their impressions and the most interesting and vivid ones could be gathered and presented on E-tourist conference about Ljubljana.

## **Conclusion**

Our research provides a broader understanding of sustainable tourism management through social innovation methodology by researching information transfer and communication technology in the contemporary society in order to advance the collaboration between stakeholders in the field of sustainable tourism of the capital of Slovenia. Data gathered represents social innovation questionnaires which were analysed with NVivo software according to the main node of information transfer and communication technology. Findings elaborate on the emphasis of the (pro) active strategic and operational role of local inhabitants, authentic experiential tourism, socializing events and culinary tourism. Our findings demonstrate that IT expertise plays a key role in the future of sustainable tourism in major cities and open communication with sustainable tourists represents the key competitive advantage. We recommend the development of sustainable communication technologies to enable an authentic and reliable communication with different segments of sustainable tourists.

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