Smart Tourism - Living Lab Approach

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Abstract

This paper reviews the concept of living lab and smart tourism in order to achieve a hybrid methodology to be used in the scope of the smart city and thus smart heritage management. This research adopts the analytical descriptive methodology to reach the most important results and recommendations

Keywords

Smart city, Smart tourism, Heritage.

Introduction

In this paper a hybrid approach will be presented, the primary goal of it will be to develop a methodology and link the concepts of smart tourism and living lab. Therefore, designing a methodology based on the concept of living lab under the smart tourism term is an important step towards the smart promotion of cultural heritage in order to achieve sustainability based on tripartite citizens, tourists and decision makers.

1 Living- lab Approach

The term living lab has emerged in conjunction with the emergence of the content of smartness in research societies, (Katsoni et al, 2016) (Davies & Swilling, 2018) (Dameri, 2014) through which patterns of use are collected through which the challenges, design and creativity can be addressed.

According to the previous studies (Katsoni et al, 2016) (Davies & Swilling, 2018) (Dameri, 2014) it was recommended to use the living lab as an effective tool for smart heritage social innovation in the smart city context.

Living lab can be implemented in the smart city context by two methods, the first "top-down" and the second "bottom-up", the first method 'Top-down" is concerned with direct technological ideas. It works like a control room for all the activities of the city, such as infrastructure management and monitoring. The second method "bottom-up" is that the source of innovation is the same stakeholders or at least in a way that is common to the stakeholders and the government and can be applied in public spaces or in smart mobility and smart tracks or what is known as tactical urbanism. (Hamdi, 2014)
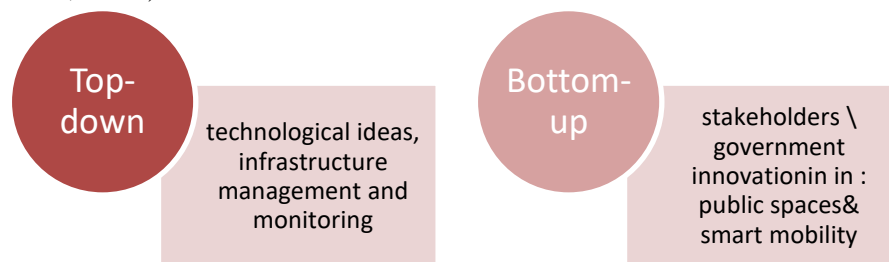

Fig (1), Living-lab implementation methods in the smart city context. (Hamdi, 2014)

1.1.1. Cultural Heritage Living-lab (CHLL)

Living labs develop, manage and contribute to inter-disciplinary teams. Multi-thematic: architecture, cultural-heritage, ICT, sustainability and urban innovation (Barata et al, 2017). Every living-labs will have to take its local context into account and thus no two Living Labs will be the same. Cultural heritage resources are instruments of economic and social development that emphasize community identities, improve the quality of life and achieve the well-being of societies. Fig (2). Therefore, it is necessary to promote innovation through heritage living-lab which is based on cultural heritage anchoring, rethinking of its potential, promoting social innovation and shared values in joint decision process.
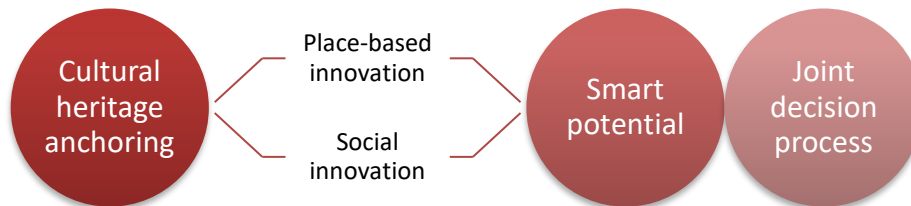
Fig (2), living-lab integration with cultural heritage potential. (Barata et al, 2017)

1.1.1.1. Place-based Innovation

Cultural heritage living-lab can be applied to public space by engaging citizens to develop innovative urban services. This methodology is based on place-based innovation, experimentation, and citizen participation. Fig (3) This public place can be a heritage or archaeological site or a site that combines both, so that the stakeholders are diverse among the population, tourists and researchers.

Fig (3), Place-based innovation. (Barata et al, 2017)

1.1.1.2. Social Innovation

Social innovation is the practice that can be achieved through the creation and interfere with the information and communication technology to make individuals think outside the box and come up with ideas that can improve their communities, (Andreea et al, 2017) and thus, can be more creative and become responsible citizens will be able to find a community

in which they live solutions. This will be achieved by providing electronic services, creating new services when needed and improving development and performance.

1.1.2. Cultural Heritage Living-lab Phases

To implement the idea of cultural heritage living-lab, it must be in sequential steps, each step of specific goal, to reach the basic goal of reaching cultural heritage living-lab that can be implemented in parallel with the smart city.

a) Start and setting plan: Idea generation, identify a specific area and a pilot site in the heritage city, engage stakeholders.
b) Development plan: Idea selection, determine and highlight the cultural heritage role in smart city context, identification of potential users.
c) Co-creative design: Develop the concept and then design the tools on it and then produce the tool. Here the role of stakeholders is to create a match between the actions required, the technologies used and the expected results.
d) Implementation: ensure successful implementation, the output of a co- design must be sustainable in a realistic context, and the provision of innovative solutions must be successful over a long period of time.

1.1.3. Cultural Heritage Living-lab Road Map

Cultural Heritage leading urban futures, heritage-led regeneration initiatives in the public spaces, a structure was established to lead the cultural heritage living lab operation and its correlative action of co-creative design, evaluation, and refinement. Fig (.4) For example, the heritage living-lab will be linked to the themes identified in cultural heritage context: cultural heritage wealth and urban regeneration for of public spaces.
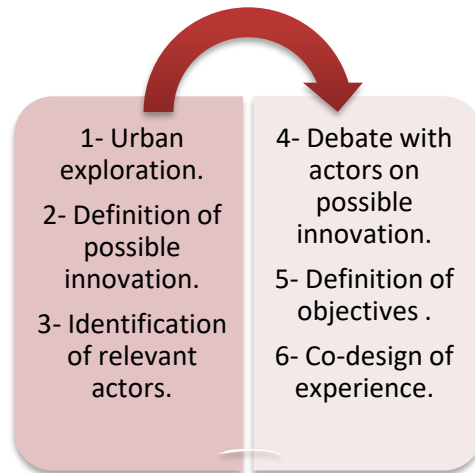
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Fig (4), Road map structure for cultural heritage living-lab methodology. (The researcher, 2019)

Since stakeholders play a key role in shaping CHLL profiles, it is important to clarify the tools in which they can be used in two tools: personal interviews and survey - questionnaires. Fig (5)
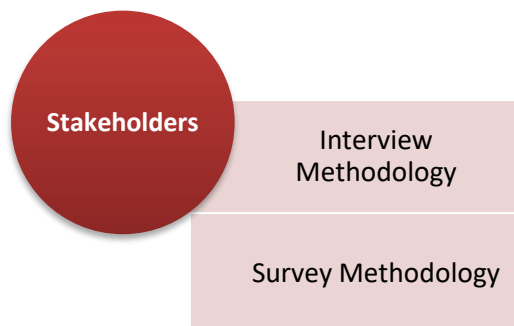

Fig (5), Living lab approach (Tanda, 2017)

1.3.1. Stakeholders

Key stakeholders include population, tourists and government, CHLL needs technology to shape its features and also to be implemented in the real context to ensure its objectives of innovation which it designed for. Stakeholders can contribute to identifying innovations that can be implemented in the Smart City by analyzing their needs and potential with discussions, assessment of ideas and technological solutions – its type and place. This can be greatly

influenced by the nature of these stakeholders, especially the city's smart population and the quality of their relationship to technology, it can be measured by conducting personal interviews and the distribution of questionnaires with stakeholders.

1.1.3.1.1. Interview Methodology

This relationship is based on mutual reliability because the CHLL needs leadership and management, and the administration also needs a space to experiment in. Interviews with relevant officials who directly influence CHLL's design are intended to identify opportunities, challenges, current status and policies in the selected area, and whether related projects may be implemented in parallel with the CHLL. The semi-structured interview is the most appropriate in this case because of the different nature of each institution from its theory and the quality of information that can be used in designing a successful CHLL.

1.1.3.1.2. Survey Methodology

The aim of the survey is to analyze the characteristics and behavioral habits of residents in the CHLL so that perceptions and perspectives can be captured according to certain indicators identified through previous studies that are directly related to the smart city and smart cultural heritage, such as smart living, smart economy, smart mobility, smart people, smart governance, smart environment and smart tourism. The survey can be distributed to the population to find out the opportunities and how to benefit from the nature of their lives and also distribute them to tourists to know the expectations and desires. Taking into account the technological solutions aimed at promoting the smart cultural heritage, which requires the development of residents and tourists.

1.2. Smart Tourism Approach

the UNWTO Assistant Secretary-General, Geoffrey Lipman, introduced smart tourism concept in 2009, during the first meeting of the UNWTO Tourism Resilience Committee. It was defined as "clean, green, ethical and quality at all levels of the service chain. When tourists visit a smart city, they expect to find tourist routes backed by technology and a strategy that will extend their stay, enhancing their competitiveness with other cities.

Smart tourism includes two essential elements: smart technology and smart destination. The term smart tourism destination implies ″an innovative tourist destination, built on an infrastructure of state of the art technology guaranteeing the sustainable development of tourist areas, accessible to everyone, which facilitates the visitor's interaction with and integration in to surroundings, increases the quality of the experience at the destination, and improves residents' quality of life. (Gretzel et al., 2015)

The concept of smart tourism can be applied in more than one way depending on the quality of the city environment to be applied. If the location is heritage, then cultural heritage must be protected and promoted. The local people should actively participate in the promotion of urban culture, provide infrastructure that helps tourists and design intelligent pathways to enhance their experience. The application of smart city tools in the areas of cultural assets and tourism is an important source of domestic output. Fig (6). It is also a great opportunity for growth based on the creation of innovative services and the full exploitation of local resources, of which cultural heritage is an important part. Smart tourism plays an active role in promoting resources and attractiveness and implementing sustainable system of services\infrastructure. This is done by designing and promoting travel experiences based on user profiling and designing several routes that the tourist can choose depending on conditions such as excessive visitor preparation or weather conditions.
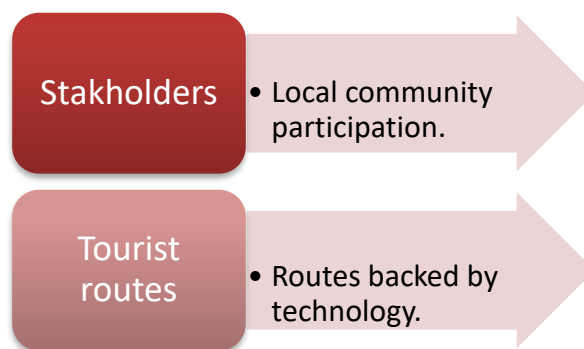
Stakholders
• Local community participation.

Tourist routes
• Routes backed by technology.

Fig (6), Smart tourism role in cultural heritage city. (The researcher, 2019)

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1.2.1. Smart Tourist Routes

When designing smart tourist routes, it should be combined with built-in environment and technologies in order to be suitable for the smart city environment.

1.2.1.1. Archaeological smart tourist route

Determine the tourist routes that contain the archaeological sites in the smart city, how to access it with the starting point -end point and the most important features that will pass the tourist while roaming. in addition to determine the type of technology which will be used that can help to enrich and facilitate the tourist experience.

1.2.1.2. Bazar smart tourist route

The signing of the sites of the permanent heritage markets and the weekly bazaars and linking them with each other in smart tourist routes.

1.2.1.3. Cultural smart tourist route

The most important feature of the cultural heritage city is the diversity of its elements. It is not only limited to ancient spaces but also includes identity, buildings, style and even activities for the community. This opportunity can be exploited and integrated into the smart tourists' routes.

1.3. Conclusion

In a cultural heritage living lab (CHLL) scenario, all different stakeholders will participate and this will enhance the active participation of users in the joint creation of new services and products. One of the most distinctive features of CHLL is to rethink how to take advantage of the technology needed by people with a relationship to cultural heritage and apply this approach will lead to a sustainable impact, for example, will create new jobs both for residents or holders of cultural heritage competence to work together with ICT. This is shared by both smart tourism \ living- lab approach.

How to implement cultural heritage living lab (CHLL) in a smart city context:

a) The co-creation experience in smart tourism destinations.

b) The destination web reputation.

c) Smart tourism destination governance.

d) Open innovation processes at destination level.

The methodology includes:

a) Survey a sample of visitors to the city's historic center to identify opportunities and select appropriate technologies.

b) Smart design trails are combined with built-in environment and technologies.

c) In-depth interviews with stakeholders in the tourism sector to learn about smart-oriented tourism strategies.

d) Interviews with local actors in the sectors of cultural heritage and mobility in innovation.

This segment will involve both the population and the tourists alike. Each has an important role in how (CHLL) is applied and we can learn about the opportunities to be influenced by distributing questionnaires.

Community questionnaire:

Population questionnaire will be designed based on six key indicators which are the same as smart city indicators (economy, people, governance, mobility, living and environment). The primary purpose of it is to stimulate social innovation by creating new business models with good potential for economic return and involving all stakeholders in the ecosystem of smart strategic and cultural tourism. And to identify useful traceable culturally products that can be developed for tourist flow planning and that promote the development of artisan craftsmanship or are associated with the history of the place where the site is valued.

Tourists questionnaire:

Identify and catalog cultural tourism destinations and define them as dynamic and interrelated systems of goods, services and expertise within a complex set of relationships in which the tourist takes the lead role of the co-producer. Analysis of the development of behavioral models designed to study tourism flows in their dimensions, frequency and distribution, and the examination of consumption behaviors and preferences. The results of this questionnaire will help to design tourist trails which are combined with built-in environment and technologies more accurately.
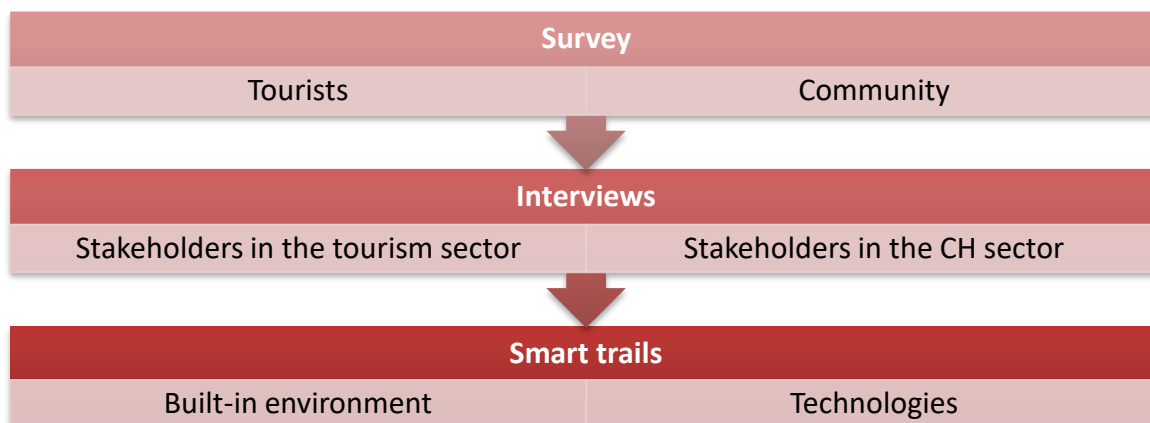
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Fig (7), CHLL implementation in the smart city context. (The researcher, 2019).

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