Development of the Prototype Solution for User Involvement in the Living Lab Approach

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The paper presents the Living Lab approach for the creation of a prototype solution aimed for supporting sustainable tourism in Gorenjska region. Involving users in the process of co-creation is one of the key elements in the Living Lab approach. A Living Lab is an environment in which researchers, developers and users cooperate with the common objective of delivering a tested product, solution or service respecting the users' requirements.

The motivation is to bring together various actors in the field of tourism services development in the Gorenjska region, to create innovative solutions for supporting, promoting and encouraging development of sustainable tourism in the region and development of the region itself. The aim is to develop a web-based prototype solution that include geo location information and social networks in the Living Lab approach. The result of our research is a design of a prototype and a critical analysis of the co-creation process.

I. Introduction

A Living Lab is an environment in which researchers, developers and users cooperate with the common objective of delivering a tested product, solution or service respecting the users' requirements and in a shortest time possible. The environment may be a city, a region within a country, an industry, a supply chain or a whole country (slovenianlivinglab.org).

In the Living Labs actors exploit opportunities and IT solutions to connect themselves. The cooperation among businesses, government organizations, universities and other research institutions in forming the IT solutions and services can be seen as a big, broadly conceptualized laboratory. The name Living Lab, living laboratory, derives from the fact that it involves a lot of actors who co-create a certain innovation. In Living Labs, issues are examined from a technological, economic, organization, social, legal and other viewpoint (Lenart, 2012).

In this article we will discuss the concept of Living Labs as an approach involving users in the process of developing web solutions in the field of sustainable tourism. The problem of involving users in the process of developing IT solutions in a certain field is the user's perception of the problem and the needs, requirements, skills, interests and motivation to solve this problem (Hyysalo, 2003).

The main question of our research will therefore be how to motivate users to engage in the process of developing web solutions.

Living Lab in the field of forming a web solution for the development of sustainable tourism includes tourists, tourism service providers, researchers and web solution software developers.

The involved tourist service providers are:

- Local Tourist Organizations: Institute for Tourism and Culture Žirovnica, Bled Tourism, Tourist Association Radovljica
- Nature Parks: Triglav National Park
- Tourist Farms: Tourist Farm Mulej
- Hotels: Sava Hotels Bled
- Cultural Institutes: Bled Culture Institute

The types of the involved tourist groups are:

- Domestic tourists (young, families, retired…)
- Foreign tourists (young, families, retired…)
The concept of motivation includes the user's needs. These depend on the type of users and the social circumstances which the users are facing. Different types of users have different needs. In the case of creating a web solution for the development of sustainable tourism, the end users, users of the tourist services, become actively involved in the co-creation process, so that they help create and improve tourist services. So our goal is to develop such a platform that would enable stakeholders to co-create a sustainable tourist services.

The user's needs depend on their values, goals and on creating the added value. The recognition of the types of users and their needs helps us in analysing the development of IT needs. The needs of users represent the driving force behind the development of new services. One of the methods of determining the user's needs and developing new service solutions is the research of user's behaviour before and after the implementation of a new IT solution. In this way, we can determine how a new IT solution and services have a retroactive effect on the change of their needs and demands. In most cases, the users have a problem in clearly defining their need or are simply unaware of their needs. In some cases the users are aware of their need, but cannot see a way of resolving it or a means to satisfy it. In such cases we can inform the user of possible solutions (Stahlbrost, 2008).

In theory, there are different definitions of user needs. The marketing definition states that a user is only interested in individual benefits of service development. Improvements in the area of IT solutions therefore stem from the desire to improve the user's life and work. According to this theory, the users have the power to through non-cooperation stop the development of a certain IT solution; insofar it does not fulfil their needs. Motivation theory takes into regard the user's desires for power, curiosity, autonomy, status, inclusion, competition, pride, idealism, athletic participation, romance, spending time with the family, organization, healthy nutrition, social acceptance, relaxation, collecting and once again the experience of joy when satisfying a certain need (Stahlbrost, 2008).

The user's needs also often depend on momentary circumstances, which can of course change when the circumstances change, whereas solutions depend on developing user-friendly services and products.

In this article, with the help of researching motivation and user's needs, we plan to analyse the process of designing web prototype solutions in the framework of developing eco-tourism pilot using the concept of Living Labs.

The pilot is taking the place within the Project CentraLab, which tries to explain the competitive advantages of the use of the methodology of Living Labs for innovation in the area of Central Europe. The goal of the project is to increase territorial cohesion, encourage internal integration and to strengthen competitiveness through mutual learning and partnership strengthening.

We will use a prototype solution as the basis for the pilot development in the area of developing sustainable tourism in the Gorenjska region. The Gorenjska region is facing with scattered, incoherent, diverse and noninnovative tourist offer in the area of sustainable tourism development, with a weak cooperation of the tourist participants, weak reaction to the changes in tourist demand and low entry and participation of SME’s in tourism. It is estimated that the reasons behind this are the poor use of potentials, bad organizational support for the marketing of integrated wholesome services and developed wholesome regional products (Strategy 2010-2015).

A developed web solution will in the area of sustainable development of eco-tourism of the Gorenjska region join the existing stakeholders and their services with other services, which will represent the basis for innovative and complete offer of tourist services. The goal of the web solution will be to design innovative linked and individualized services, which an individual tourist can reach online, and offering help when planning a trip, interactive communication on the way and when documenting the trip. The web solution will include:

- General information, (culture, history, gastronomy …).
- Geo location services (like Google Earth/Maps).
- Functionalities of the Web 2.0 (such as Drupal).
- Links to existing social networks (Facebook, Twitter, LinkedIn …).
- Possibility of evaluating the tourist offers to acquire feedback on the quality of tourist services and tourist satisfaction.

II. Methodology

Our paper deals with the question how to develop such a platform that would motivate and enable users to co-create a sustainable tourist services.

Concerning the types of users, we assume that the motive for cooperation of the tourist service providers in the development of the web solution in the area of sustainable tourism is in the need for an increased number of tourist visits. The motive for cooperation of tourists in the development of online solution in the area of sustainable tourism is behind their need for a quality spending of leisure time.
The motives of these two types of users will be checked with the help of an online survey in the setup application. The results of the survey will be compared with the notes in the research diary, where we will record all the new entries of tourist services and comments of the new users of the application.

The process of the setup of the Living Lab will include the following stages:

1. Definition of the group of stakeholders
2. Definition of the user's needs
3. Developing the prototype solution
4. Testing of the prototype solution
5. Use of the prototype solution
6. Updating the prototype solution

Since we are focusing on the research of a practical problem and because we are actively including, apart from the researches, also users and the web solution software developers. For the acquiring of information in the framework of active research method we will use next methods:

- Online survey
- Analysis of the development of the web solutions in the area of sustainable tourism.
- Living Labs approach in the development of user-friendly services also use the method
- Research diary

In the research diary, we will record all the new entries of tourist services and comments of the new users of application, which we will then compare with the answers gathered by the online survey.

As the basis for determining the user's needs in developing the web solution, we used the approach of soft systems methodology, which served also for the description of the general research issue (see picture 1).

Web-based prototype solution will be developed by prototype method of information system development, since the draft of the web solution will be improved in a repetitive process so that it will continue to better suit the demands and needs of the users. Using the solution, the users can see for themselves the advantages that this type of work offers (Pucihar 1999, 59).

III. Results

The goal of our research is to motivate and engage the users in the process of developing web solutions. We plan to use an online solution as a research tool for the operation of a Living Lab in the area of development of eco-tourist services. The first meeting of all the stakeholders can be depicted by the following image:

Picture 1: Living Lab for the design and growth of eco-tourist services of the Gorenjska region

Picture 1 demonstrates the Living Lab for the design and growth of eco-tourist services of the Gorenjska region. The picture includes all stakeholders, which participate in the development of the web-based prototype solution: tourists (right part of the picture), providers of tourist services (left part of the picture), researchers (upper part of the picture) and developers of the web solution (bottom part of the picture). The common point of the providers of tourist services represents the need to retain the existing and to attract new tourists. The common point among tourists is the need to discover new places and stories. The motive of researchers is the research of Living Labs in the example of developing a prototype solution for a web application for the development of sustainable tourism of the Gorenjska region. The need of developers of online solutions is the opportunity to use geographic information technology systems.

The web-based prototype solution will be implemented as a part of the portal supporting development and growth of eco-tourist services. The portal will be developed in an open source – content management system CMS connected to a database. The basic functionality of the prototype will be to present various tourist trips and points of interest in the area of eco-tourism, so called itineraries. The database will include all online contents, users and portal settings. The portal will be constructed in a way that it will be possible to maintain the operation of the portal by minimum costs after the pilot will be completed and to exploit as much as possible the already existing sources of
implementation such as e.g.: social networks Facebook/ Twitter, Google Earth/Maps, open source code platforms for the management of online contents, such as Drupal, links to existing online sites of the providers of tourist services. Upon completing the project our goal is to submit the portal for use to a local tourist organization (Lenart, 2012).

The results of the activities of the Living Lab so far:

- Development of the group of stakeholders,
- Organization of workshop, where goals of the project and possibilities for cooperation were presented,
- Definition of individual needs of the users,
- Definition of the concept of prototype solution on the basis of recognized possibilities and
- Use of modern IT systems for the development of prototype solution.

The next steps in the research of the Living Lab in the area of developing a web solution for the promotion of eco-tourist services will include the following stages

- Development of the prototype solution,
- Testing of the prototype solution,
- Use of the prototype solution and
- Perfection of the prototype solution

IV. Discussion and conclusions

Based on the analysis of the results of the online survey, we expect that the providers of tourist services will co-create those IT services in the area of sustainable tourism on the web solution, which will lead to a bigger number of tourists and prolong the average duration of a tourist staying with them. Their contribution to the development of the online application will stem from the above mentioned marketing theory of the origin of the user’s needs for a certain service.

On the other hand, we can expect that different groups of tourists will co-create those tourist services in the area of tourism on the website, which will be in accordance with their needs for spending vacation and free time. Their contribution to the online solution development will stem from the above mentioned motivation theory of the origin of user’s needs for a certain service.

The main problem we can expect in this co-creation of the web solution is a low response from the users. Above all, there is fear that the tourists will not recognize the useful value of the solution and in this way we could lose one of the key actors in co-creating tourist services, leading to the solution becoming only one of the many already existing, offering tourist services, but not co-creating them. To avoid any potential problems, we will need to consider different kinds of promotion of the solution among the tourist groups and informing the providers of tourist services on the advantages of co-creation of the online application. We are also considering the problem of the lacking information on tourist services and lack of computer skills of the users, both on the side of certain tourist groups, as well as on the side of tourist service providers. One other possible and anticipated problem could also be untrue and misleading feedback information, because of which we will need to introduce a position of the caretaker of the solution and lack of financial means for the promotion of the solution.

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