Geographic Information Systems in Tourism Management

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Abstract: This work aims to study an approach of information systems with geographic support (GIS) applied in tourism. The system allows the integration of different services, accessible through different technology platforms, which enable agents to interact using the support of communication technologies. The geographical referencing of places is integrated with specific additional information, in order to give a greater perception of the existing resources. In order to succeed among the public, especially tourists and residents, the system should be enhanced with multimedia contents and geographic, historical, cultural, ethnographic data to increase its use. Other enriching elements for the GIS are the definition of access rules and contents, including quality criteria and behaviour patterns along the time. This system accessibility depends on the type and location of the technology platform as a means of enhancing the system use and economic revenue of the agents involved. Relevant issues to explore this system are, on the one hand, its importance for tourism supply and demand management, and on the other hand to create more secure online business and services that verify system standards. These should be defined according to the regional and national strategies and policies of the tourism sector, as the public looks for useful information about the several regions to make the best decision. With the system maturing process, other activities shall benefit from its expansion.

Key-words: Tourism, information system, technology platform, geographic information system, sustainable development.

1 Introduction

In the information society era the technologies have had a decisive role in the organizations’ development and success, once they use the new technologies in order to become more competitive in their activities and services. Such resources allow them to set new ways to interact with their business partners as well.

The access to internet has enabled these organizations to maintain a presence in the cyberspace with competitive prices. However, in many cases, that presence is insipient, rather showing their portfolios of products and services than an active platform of spread, delivery and distribution. Others have invested more in systems and information technologies, presenting sites based on electronic business services, trying to increase their market penetration as it is the case of the tourism business.

Tourism is not only one of the largest industries in the world but also the first online segment to contribute with 11 percent of the total sales occurring in the internet. In 2003, more than 30 percent of the online sales were generated in the travel sector [1]. The tourism business is deeply influenced by the information and communication technologies, once it is a very intensive activity in information [2].

In the services industries like tourism, the production appears integrated with consumption which reinforces the active role performed by clients in the service creation process. Its quality and value perception affects the motivation to visit a country. That requires the necessary education that can be enriched by the digitalized information available online. Those who are interested may have information about destinations they didn’t even imagine to exist. On the other hand, an integrated information system would allow the knowledge...
sharing that has a crucial role in the relation management with customers.

This function, along with the definition of new concepts, contributes towards the development of intelligent data bases that “know” the users’ preference behaviours and profiles.

Recent studies suggest a growing utility of the geographic information systems (GIS) application concerning the tourism planning as well as the awareness about the best places for their development [3 and 4]. Recently GIS were used to identify the areas with the greatest potential for tourism development, based on their natural and/or cultural resources [5].

The objective of this work was to study an approach of information systems with geographic support applied in tourism. The system has to allow the integration of different services, to be accessible through different technology platforms, which enable agents to interact using the support of communication technologies. The geographical referencing of places is integrated with specific additional information, in order to give a greater perception of the existing resources.

2 Methodology
An Information System for tourism activities was developed (figure 1). The information system will have data about tourism, systemic processes and multimedia content. The information will be actualised from the registered tourist agents and other users.

3 Results and discussion
In figure 2 is presented the Relationships Model resulting from the concept and data and process analyses of the studied information system. In figure 3 it can be seen an example application of the previous model in a case of tourism demand management.

![Figure 2 - Relationships Model resulting from the concept and data and process analyses of the studied information system.](image1)

![Figure 3 - Application of the Relationships Model in a case of tourist demand management.](image2)

The GIS served as a means of consolidating the geographic information in order to complement both the analysis and the planning. Other authors [6] used these systems for inventorying, mapping and identifying human intrusion areas.

Often, the infrastructures are surrounded by the huge tourism growth which is threatened by local and environmental pressure groups. The GIS is an efficient tool in designing and monitoring the...
tourism sustainable development [7]. Among other attributes, the geo-referenced information adds value to the analysis of developments that can deteriorate either the environment or the tourism resources of those areas where the proposed developments have a greater visibility [8].

The GIS may be considered as a whole of tools and technologies with a vast applicability in the prosecution of sustainable tourism development objectives.

One of the tourism agents’ difficulties is that they don’t have the types of information necessary for their decisions assertiveness regarding the territory planning.

The regular survey of the natural and cultural resources is fundamental for the tourism industry, because it helps the managers to identify the available resources, the locals’ skills to create new products/services and at risk resources due to either the lack of planning or other sectors influence.

The GIS will allow the balance between the tourism accommodation and the residential accommodation, in order to check how the occupation varies according to less or more dynamic areas and thus to plan the tourism offer. Then, it is possible to analyse the differentiated occupation impacts, from the overload/intrusion to the maintenance, whose increasing tension on the tourism growth should be object of discussion.

References