

# OBSERVATORY FOR TOURISM OF SERRA DA ESTRELA - - a tool for sustainable tourism in Serra da Estrela

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## **ABSTRACT**

*In tourism new technologies have led to major alterations, leading to changes in the approach to information flow and needs, as well as the ways of its management, due to the high volume of data that needs to be processed and released. Thus, the information management in companies and institutions connected with Tourism is crucial to its success, with a progressive increase in the exchange of knowledge on the Internet.*

*The Observatory for Tourism of Serra da Estrela (OTSE) is based on the creation of a technological platform that will allow the sharing of information efficiently and economically. It should be noted that the philosophy, structure and organization of this Observatory will be marked by basic scientific studies of the tourism sector in the region of Serra da Estrela and the production of critical information for the tourism industry in the evaluation and progressive monitoring of the dynamics of supply and demand. This observatory is looking for at the same time, to cooperate with tourism partners to facilitate or enable the solving of action strategies, which encourage tourist attractiveness, more products' dynamics, generate business initiatives, strengthen natural and cultural identities and identify trends.*

**Keywords:** Internet; Observatory for Tourism of Serra da Estrela, Serra da Estrela, Sustainability, Tourism.

## **INTRODUCTION**

The new professional demands require a deep understanding of all sectors of activity. People, businesses and, in short, societies are increasingly closer and in permanent contact. This approach is being supported by two of the industries with highest growthrate: Tourism and Information and Communication Technologies (ICT). Therefore, we can see that a new civilization is emerging due to new technologies, leading to new life styles in terms of work, family, economy, politics, school, culture and environment.

In tourism, new technologies have also caused major alterations, causing changes in the approach flow and information and management needs due to the high volume of information that needs to be processed and released. Thus, information management by companies in the tourism sector is critical to their success with a steady and progressive increase in the exchange

of knowledge through the Internet. In fact, the Internet has become a prime source of information, confirmed by the increasing proliferation of related sites network.

Therefore, the contribution of the Observatory for Tourism of Serra da Estrela (OTSE) is based on the implementation of a technological platform that will allow the sharing of information efficiently and economically. It should be noted that the philosophy, structure and organization of this Observatory will be marked by scientific studies from the tourism sector in the region of Serra da Estrela and the production of critical information, for the tourism sector, in assessing the dynamics of supply and demand. This observatory is being developed by a group of researchers from the School of Tourism and Hospitality from the Polytechnic Institute of Guarda and is funded by the Research Unit for Inland Development (UDI).

It is believed that the results of the implementation of the OTSE project, whether the scientific, either the technology-based, will be important, such as: Database with scientific information on tourism in the region of Serra da Estrela;

- a) OTSE Portal to meet the needs in respect of information on tourism in the region of Serra da Estrela Production of studies and statistics on tourism with territorial breakdown;
- b) Development of network relationships between the various actors associated with tourism in the region (public and private);
- c) Promotion of regional and even national competitiveness of tourism through the development of qualified information on Tourism.

The OTSE project will contribute to a better understanding of tourism and, further, to abide the necessary knowledge for decision making to improve the competitiveness of the productive sector, a sector that has a strong multiplier effect in the Portuguese economy due to its positive results in the productive structure and society, particularly in regions where other productive sectors have limited weight or that are dismantling.

## **2. THE ONLINE IN TOURISM**

Contemporary society has been undergoing unprecedented economic, political and social changes, becoming a knowledge society where information has become the central element of all human activity (Castells, 2001).

The new communication networks and globalization scenario are showing up as factors that mark the "Age of Information and Knowledge" and provoke a permanent revolution of values, knowledge and perceptions in virtually all areas of human knowledge (Varajão, 2005).

The pervasiveness of ICT is the direct cause of profound changes in the way we live, learn, play and work, leading to new ways of being and acting by users and enterprises (Lavaredas, 2010). ICTs are thus, in this new environment, a powerful instrument of modernization, a key factor for a competitive positioning in a complex and constantly evolving market.

When new avenues and broader horizons are opened, it creates new opportunities to revolutionize and redefine the traditional ways of acting in society, whether individuals or organizations, which makes both the internal and external environment to organizations more

competitive (Castells, 2001). Thus, the global network (Internet) has brought with it, in this complex and competitive environment, new ways of doing business, where only the organizations / companies with vision, flexibility and agility will have a place.

In the field of technology, and driven by the technological revolution, the importance of the Internet has been constantly increasing and has established itself as the main means of disseminating information and knowledge. Notice that from the simplest to the most complex activity, we can observe that the Internet is almost always present. Thus, the "new" tourism system is no exception to these principles, with two key features and at the same time related to each other: the international interdependence and the revolution in information access. The international interdependence results from the adjustments that have been emerging as tourism is no longer seen in a closed and regional / national perspective to start being seen in an open and international perspective. The fact that tourism players are finding themselves closer to each other means that they are dependent on each other and that decisions made, work as direct inputs in the international system. These inputs will cause the system to constantly adapt to the same actors, ie, the players can no longer live disconnected from each other, because more and more quickly, they have to make decisions about the surroundings. Hence, access to relevant information, in time, can be the differentiating factor. The information revolution has to do with the emergence of new means of dissemination, the media, communication has to be made thinking about the masses since there was an exponential growth of the population exposed to such media. Tourism also followed this trend, where Internet plays a key role. In this sense, the Internet has mainly reshaped the way information is distributed, related to tourism and the way people plan their trips (Buhalis & Law, 2008).

In recent years, two major trends have emerged on the Internet, including the so-called "social media websites" and research on the Internet and are causing significant changes in the tourism system (Xiang & Gretzel, 2010). Thus, on one hand, the "social media websites", which represent the various forms of content generated by the user / consumer (UGC), such as blogs, wikis, social networks, tagging and collaborative file sharing websites such as YouTube and Flickr, have gained great popularity due to its use by tourists online (Gretzel, 2006; Pan, MacLaurin, & Crofts, 2007). Many of these "social media websites" allow consumers to post and share their comments, opinions and personal experiences related to travel, which will provide information to others (Xiang & Gretzel, 2010). This supports the argument by T. Friedman (2007) that "the world is flat", and consumers are gaining more power in determining the production and distribution of information due to the increasing ease of Internet access. On the other hand, due to the enormous amount of available information, research has become an important way of Internet use by tourists (Hitwise, 2008).

In short, in a global context, where technology plays a major role while it is constantly changing, it is essential that all players in the tourism industry, whether large or small, public or private, have the best information in time, in order to ground their decisions.

### **3. DEFINITION OF THE TERRITORY OF SERRA DA ESTRELA**

The importance of tourism as a driving force of socio-economic structures of the regions is now a fact fully assumed. Its growth and spatial diffusion have been one of the most remarkable phenomena of mobility and increase of the standard of living of the populations, with

areas reached by it and appropriate for tourism are increasingly diverse. The mountain is linked from the beginning to the tourism phenomenon, due to its size as a place for recreation and leisure and its natural expression. The presence of a strong ecological component, the different possibilities of occupation throughout the year, the development of sports, the richness of its cultural heritage, the integrity of its forest and water resources and expansion of hotels and sports and recreation equipment's offer have increased its vocation, assuming increasingly as the great alternative to coastal tourism, with special meaning in winter period (Perlis, 2002).

The Serra da Estrela is the most prominent central Lusitanian ridge and the highest and most emblematic mountain of the mainland. With 1993 meters at its highest point and unique periglaciares features in the country, has a unique geomorphological structure, composed by a set of elements whose size, shape and geology establish bioclimatic levels with different types and intensity of occupation. The strong climatic constraints originate a seasonal occupation of traditional activities, but allow the development of various sports and winter activities associated with the topography and presence of snow. These conditions, related to forests, water resources and cultural heritage, lead to a major national tourist destination position today in terms of interior territory.

For its territorial delimitation, as a center of interest of the observatory, it was considered, in addition to the altimeter, the differences of the geographic scope in geomorphological terms, forms of land use, population, population density and productive system, in order to create separations or identities that allow its consistent individualization in relation to neighboring territories, keeping the county as a unit of spatial cohesion. In this sense, we tried to analyze and interpret the biophysical elements that allow to make a separation, that is, the formation of a group with specific administration, to clarify the area of Serra da Estrela (Fig. 1).



Fig. 1 - Territory of Serra da Estrela

Source: <http://portal.icnb.pt/NR/rdoonlyres/D5C14D2F-2772-4508-A121524B7801406B/6877/MapaPNSEsite6.jpg>

In practice this definition of the territory of Serra da Estrela, and action territory for the OTSE, was structured based on three factors: the integration of all the counties that are a part of the Parque Natural da Serra da Estrela (Natural Park), the inclusion of three municipalities of the NUT<sup>1</sup> III of the Serra da Estrela, the municipalities whose altitude and ways of life establish a relationship of identity with mountainous areas, and in this case, with Serra da Estrela. It should be clear that any definition always causes some

doubts, which necessarily had to be considered due to the mountain territorial specificity, that for this matter considers the geomorphology and proximity to the central massif, the biophysical conditions and ways of life as integrating factors of these municipalities by this approach. Thus, the counties of Belmonte, Celorico da Beira, Covilhã, Fornos de Algodres, Gouveia, Guarda, Manteigas, Oliveira do Hospital and

Seia were established as Serra da Estrela territory (Fig. 1).

Nomenclature of Territorial Units for Statistics or NUTS is the nomenclature that defines a sub-regional statistics which divides the territory.

#### **4. THE IMPORTANCE OF MONITORING TOURISM**

Tourism is assumed today as one of the main economic activities of the Serra da Estrela which, given the evolution and diversification of supply and demand, is projected into the national tourism frame as a destination with multiple vocations and the primary alternative to coastal tourism. Nowadays, we witness a general revalue of the mountain, at the level of image, productive processes and forms of use, due to the emergence of a new social system of values, which rewards the natural and cultural qualities of these areas (Gaskell, 2005). These changes in perception, and even occupation, mean that these spaces, which were previously hostile due to the natural settings now have a distinct vision and use, as a result of knowledge, openness to the exterior and enlargement of the reasons for the visit, the capabilities of accommodation, more diversified and qualified, and the recognition of its ecocultural value to tourist practices (Fernandes, 2005). There is also an increased accessibility, resource exploration, the spread of ecocultural values, the extension of leisure and recreational activities and an increased flow of tourists that have contributed to its revitalization. The increase of hotel units supply, diversified in the concepts and possibilities of occupation of different market segments, coupled with the widening of sports and leisure equipment, as well as routes and has promoted tourist practices, reducing the seasonal trend of these spaces and encouraging new promotion logics and interests and investment in tourism through administrative entities, private investors and partnerships.

Tourism represents, to Serra da Estrela, a strategic factor for the promotion of economy and increase the welfare of this mountainous region. Its evolution and its dynamic character, with direct repercussions on communities and territory, imply a more careful approach and with technical references that can foster the growth of this activity in a sustainable manner, both at a socio-economic or environmental level (Fernandes, Brigas, Lopes, & Castro, 2005). Thus, it is urgent to monitor and produce accurate and appropriate regular information on the characteristics of tourism in the region namely the major tourist markets, consumption profiles, the distribution throughout the year, the motivations and forms of access to the destination among others. Remember that tourism today has become increasingly decentralized and more emancipated, with fragmented procedures, multiple realities, particularities and various forms of appropriation of spaces or tourist destinations (Tschanz & Klein, 1996). The complexity of behavior and positioning, whether from tourism supply or demand, requiring a thorough understanding of trends and logics of functioning of this sector. This requirement implies a mastery of methods for analysis and diagnosis, as well as the application of various tools that allow the industry to know the realities and trends that are designed, so that appropriate interventions to existing and observed realities, can be made, trying to turn tourism into a real reason of development, with all the multiplier effects that are known. It should be noted that tourism has gained a prominent position and even strategic factor to our regions. The ways to live leisure and tourism have been diversifying the practices and destinations, with the tourism universe being dominated by different motivations and adaptabilities and less and less by homogeneous demands. The ability to generate innovation, anticipate trends, meet expectations, coordinate projects, adapting supply to new demands, differentiate and become competitive tourist destinations emerge as decisive in the current approach of tourism and increasing the attractiveness of the tourist areas. To this end, the existence of OTSE becomes vital, either in the production of quality information for industry professionals, or in the

evaluation of behavior and definition of logics of action, becoming a fundamental leverage to the qualification of Tourism and Hospitality. The new dynamics that influence the development of tourism resulting from the different behaviors of demand and supply, as well as new rationales from the economic, environmental and socio-cultural context, involving new models of planning and managing tourism. We have seen changes, a growing differentiation and classification of tourist practices, which require higher levels of knowledge in decision making and the strengthening of tourist destinations, promoting, unavoidably, the production of information and *conceção* logics of action and appropriate management tools for knowledge transfer and consolidation of competitive advantage, ensuring the sustainability of tourism (Buhalis, 2002).

In the tourism development period, which we are now living, the emergence of ICT can be witnessed, using various technological advances that allow the promotion of products, manage the distribution of the current offer, provide qualified and current data for decision-making or program investments and new products. Tour operators, administrative boards and the various companies and institutions linked to the sector may, in a cooperative and networking way, get information to facilitate its operation, improving the relationship of educational and research institutions with the various actors that build and develop the tourist destination of Serra da Estrela.

## **5. OBSERVATORY OF TOURISM OF SERRA DA ESTRELA**

### **5.1 Scope**

The OTSE intends to be an asset for tourism in the region, with the mission to promote the monitoring, analysis, and dissemination of the development of tourism, in an independent and responsible manner, ensuring the trustworthiness of the scientific and technical information produced and / or disclosed on its own platform, in order to contribute to the development of sustainable tourism in Serra da Estrela and integrated into the global strategies of regional development. It is also intended, at the same time, to collaborate with tourism agents to facilitate or enable the equation of action strategies, which encourage tourist attractiveness, more dynamic products, generate business initiatives, strengthen the natural and cultural identities and monitor trends. In this sense, the operation area of the OTSE will focus primarily on scientific research, study, analysis, monitoring and evaluation of tourism in the region of Serra da Estrela (area defined in section 2.), providing reports, indicators, demand profiles and strategies that promote industry knowledge and the logics, that at each moment, guide supply and demand.

### **5.2 Objectives**

Serious shortcomings were found in the monitoring, dissemination and analysis of the evolution of tourism in the region of Serra da Estrela, the construction of the Observatory, with a technological base through its own platform, comes to bridging these gaps and fill these gaps, trying to create conditions to achieve the following objectives:

1. Better knowledge of the tourism sector in Serra da Estrela, through an analysis of the regional tourism offer and the tourism phenomenon in the region, by analyzing the relationship

between the tourism industry and the surrounding environment and, in a final analysis, between supply and demand;

2. Collect, process, store and disseminate data that may contribute to the planning and development of the region in a concerted, sustainable way with a future perspective of shared responsibilities and towards a common benefit;
3. Be a tool for monitoring, dissemination and analysis of trends in tourism, for the formulation of sector, sectoral and sub-sectoral diagnostics, with emphasis on those involved in the sector;
4. Stimulate and encourage debate and reflection on the current dynamics of Serra da Estrela, associated with tourism and ICT;
5. Conduct studies, launch and cross statistic and research operations, consider and discuss central issues to the functioning of the system and the tourism sector in the region.

### 5.3 Implementation

One of the assumptions of the platform development, for the OTSE, is that it will be built using *open source software* (<http://www.opensource.org/docs/osd>). Under this assumption the platform of the observatory was defined as being based on an Apache server running PHP extensions, a database supported by a MySQL server and Joomla as a content management system (CMS).

Joomla is one of the currently existing open source tools to develop websites with dynamic content. It is a framework, with basic features of pre-defined maintenance and administration, which provides integration between the operating system, the Apache server, the MySQL database, PHP programming language and the browser (Fig. 2).



Fig. 2 - Software used to build the OTSE platform.

The choice of this CMS was related to the fact that it provides a number of important features, such as: (a) ease of use, (b) versatility, (c) various types of personalization and also for providing a set of various models, extensions and plugins (Roque & Duarte, 2010). The extensions (<http://extensions.joomla.org/>) authentication, events, forum, maps & locations, newsletter, site search and social media are among the many features available.



Joomla allows, therefore, that people without much technical knowledge, can relatively easily succeed in developing and managing a website.

a final result of the compilation of these different technologies, a prototype of the observatory (Fig. 3) came out which can be accessed at <http://www.otse.com.pt>.



Fig. 3 – OTSE main webpage.

## 6. CONCLUSIONS

As tourism plays an increasingly relevant role in terms of its multiple economic, social and environmental effects, it is important for contemporary society to be concerned with the present data, knowing the past and looking for relevant information to try to find a perspective of the future. The technologies are fundamental tools for the knowledge and dissemination of tourism, projecting itself as a privileged means of dissemination and management of destinations, with the ability to interact and to interact in network with the various tourism stakeholders, from the administrative boards, to hospitality agents and different segments of demand.

The cultural diversity and natural homogeneity of the territory to be observed by OTSE, which includes the cities belonging to the Natural Park of Serra da Estrela, as well as the counties of mountain characteristics and the whole territory with the nomenclature of Serra da Estrela territorial unit, allowing to promote a range of relevant research, and enable relevant studies and analysis. Monitoring the tourism phenomenon, more than knowing the territory, rather than making an inventory or identify resources or equipment, is a challenge for the OTSE and on which the community in general, and science in particular, deposit expectations and information in order to await together, formulating policies and strategies for the sector in the region.

Pledging to keep a watchful, meticulous and capable eye on the reality of tourism in the region of Serra da Estrela and assuming the new technologies as an instrumental support for this plan,

using where possible, the more reliable, trustworthy and safe technology resources, the OTSE support platform aims to be consistent for the collection and processing of information and consequent production of indicators and knowledge for decision support.

The Internet is a day-to-day integral part of all contemporary societies globally and is used as an invaluable resource for information and knowledge management, helping to change the paradigm of the tourism system.

The year two thousand and twelve, the first in the activity of the Observatory of Tourism in Serra da Estrela (OTSE) will be important for the realization of a reference project that will result in a competitive asset for the promotion, organization and development of tourism in the Serra da Estrela, the result of corporate efforts and collaborative work between agents and partners who will join it.

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