Intelligent Decision-Support Systems for E-Tourism: Using SPETA II as a Knowledge Management Platform for DMOs and E-Tourism Service Providers

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ABSTRACT

The Internet has disrupted traditional tourism in which a promising landscape of intelligent service provision has erupted by applying a new lattice of cutting-edge technologies. Thus, the different actors of the tourist services are in a new environment and they should operate in a coordinated manner to increase the value of tourism, to keep current tourists and attract new ones. One of the major players of this technological disruption are Semantic Technologies, which have profited from the combined use of pervasive elements and recommender systems to bring added value to tourist actors. Based on previous works, this article presents a new module that enables SPETA II to act as a recommender not only for tourists, but to destination management organizations and tourist service providers. Searches, decisions and preferences of tourists are used to “pull” tourist service providers and destination management organizations to create and adapt services based on new recommendations.

Keywords: Decision Support System, E-Tourism, Recommendation Systems, Semantic Web

1. INTRODUCTION

With roughly 11% of the world total employment or GDP, tourism is often presented as the first worldwide industry and Europe is by far the first tourist continent (Longhi, 2007). Bigger than in any other Top-5 European economies, the tourism industry is responsible for almost 12% of Gross National Product in Spain, and in several areas of this country more than a
The remainder of the article is organized as follows. In Section 2, the state of the art of technologies included in SPETA II is outlined. Section 3 discusses the features, the underlying architecture of SPETA II. Section 4 pictures a use case for the use of SPETA II data as a tool for decision support in the context of DMOs. Lastly, Section 5 presents the principal conclusions of the study, and some suggestions for resolving the problems encountered are outlined, as well as proposals for future research.

2. STATE OF THE ART

Tourism destinations are probably one of the most difficult products to market (Palmer, 2005). Buhalis (1998) pointed out that the use of Internet in the tourism industry gives access to a great number of people, as well as offers the opportunity to develop closer relationships with customers. Internet enables consumers to communicate with organizations on a 24 hours, 365 days a year basis and also it enables organizations to implement Customer Relationship Management (CRM) programs enhancing the opportunities for interaction and a better understanding of both sides.

This vision of CRM is an enabler for any interaction with tourism. The first attempts to bring the two worlds are produced from the standpoint of integration between Web platforms and legacy systems such as CRM and back-office Enterprise resource planning (ERP) (Joo, 2002). Thus, according to Beldona et al. (2005), for the managers of airlines and car rentals is a necessary integration of customer relationship management tools on their websites. This is a new integration opportunity. That’s why, according to Buhalis (2004), airlines have been investing in CRM programs in order to improve their direct communication and to manage their loyalty clubs. There have been several studies that employ cutting-edge technologies in areas relating to the use of CRM in the airline market, to prevent customer churn in the airline markets (Liou, 2009).
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