

# A Survey on Semantic Web Based E-Tourism Dynamic Package

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## Abstract

The objective of the Semantic Web is to provide languages to express the content of Web pages and to make accessible to agents and computer programs in a meaningful way. The term “semantics” has at least two significations: a) the meaning of words and texts, and b) the study of propositions in a deductive theory. The Semantic web is used in various application areas such as E-health, E-tourism, E-Learn, E-governance, E-Marketing, E-business, etc., In this paper various research issues related to E-tourism were discussed.

**Keywords:** Semantic, E-Tourism, Interoperability, Dynamic

## INTRODUCTION

The main goal of the Semantic Web is to ease computer-based information retrieval, formalizing data that is mostly textual, for further discovery. The semantic web is the future of the web and it can support the development of a wide range of intelligent services. Ontologies form the core of the semantic web; they provide a common understanding of domains and allow people and machines to communicate effectively to develop intelligent applications.

More precisely, the Semantic Web is based on a set of languages such as RDF and OWL that can be used to markup the content of Web pages. These languages have a well-defined semantics and a proof theory that allows agents to draw inferences over the statements of the language.

Examples of applications that use semantics and ontologies

- Semantic Web services
- Semantic integration of tourism information sources
- Semantic digital libraries
- Semantic Electronic Patient Health record
- Semantic E-Learn services
- Semantic Intelligent Systems.

## Need for Semantic Web in E-Tourism

Tourism is a part of life and business. Tourism has become one of the world’s largest industry players. E-tourism provides a vast amount of rich information, maps, pictures, sounds and services on destinations throughout the world. Internet is the primary source for tourist destination information for travelers, visitors. In Tourism a vast amount of data is only loosely structured or given in unstructured form. The semantic web and interoperable services provides a structured data and provides a unification of various data.

Dynamic packaging has been introduced as an innovative technology allowing for the automated online configuration and assembling of packaged travel products for individual customers. It requires a suitable integration of heterogeneous, autonomous and distributed tourism information systems.

The Effective E-tourism Information system may be built on Interoperable Web Services. The interoperability will

obviously play an important role and would require a legislative support and defining of standards. The Key issues in Semantic e-Tourism are

- ✓ Interoperability,
- ✓ Data Integration
- ✓ Date Heterogeneity

## RESEARCH DIRECTIONS

Dynamic packaging has been introduced as an innovative technology allowing for the automated online configuration and assembling of packaged travel products for individual customers. It requires a suitable integration of heterogeneous, autonomous and distributed tourism information systems. The Semantic Web brings a set of new emerging technologies and models that need to be find and executed. Semantic web is a platform that integrates tourism data sources using semantic rules, ontologies, web services and web processes. [9].

The Semantic web has major impact on tourism industry. In tourism vast amount of data is loosely structured or in unstructured form. The Semantic web provides meaningful mechanism adequate for handling this unstructured data. This tourism and semantic web combines together a dynamic package provides a unification of numerous emerging ideas, technologies for customers, travelers and visitors. Its vision is to have web data defined and linked so it can also be used by machines for automation, integration and reuse across various applications. [3]

The use of semantic web technologies allows us to improve dynamic tourist packages commercialization. This allows us to annotate information sources on tourism services in a defined ontology. The enriched information can be used to match packages. The main goal is to integrate tourism information from different web pages and presented in an combined meaningful way, according to the user search and conditions. [8]

Semantic web is a possible solution for overcoming the interoperability problems in dynamic applications. The strategic potential of dynamic packaging Semantic web as emerging technology that can be used to deal with the lack of standard and enable data integration to improve tourism. [10]

Characteristics of E-Tourism lead many challenges. One of them is growing need for interoperability between information system, allowing seamless information exchange between tourism organizations. Using the term “Ontology” the market players are enable to exchange data without changing their own systems data structure. The Author gives the solution that combines semantic web technologies, ontologies and mediators into a platform for information exchange where electronic market place participants do not need to change data structure in own systems. [13]

Tourism Information system are based on different information systems, but mainly they use different data for

representing tourism products and services. similarly for representing various tourist places and their ontology dimensions.

Data heterogeneity is a well-known problem, which is solved by providing semantic reconciliation with respect to shared conceptual reference schema from one level to another level. Semantic web propogates interoperability, reusability and shareability, all grounded over an extensive expression of semantics with a standardized communication. Semantic web in Intelligent tourism information system needs to mature and methods for achieving scalability, robustness and reliability .[4][5].

The tourism industry plays an important role in commerce It is a good candidate for taking up Semantic web technology that provides the semantic brokering system for expressing the requirements and preferences in a multiagent environment by comparing various tourism marketing information. [7]

In intelligent based destination management system, semantic web ontology is used to model the tourism destinations, user profiles, and contexts. Some of the tourism ontologies are climate, visiting places, time factors etc. The semantic web service Ontology is extended for matching user requirements with tourism destination specifications at the semantic level. SWRL is used for inferencing with context and user profile descriptions. [6]

Ontourism [17] this paper identified the importance of applying semantic technologies to advance information creation, maintenance and delivery in the tourism industry. It is possible to integrate with other existing tourism data (based on pre-defined ontologies and ontology alignment).

It make easier for end users to find what they want by means of three way search (Ontology, tags and keywords)

## OTHER AREAS

### Mobile tourism and Semantic Web

COMPASS[16] This paper provides tourists with context-aware recommendations and services. It uses various external map services. It builds on the open Web Architectures for Services Platform.. It a *registry* that contains information about the third party services providing the content such as museums and restaurants information. For service description, semantic web technology such as OWL is used. The system retrieves and provides information about the user's context by contacting the appropriate context services.

PinPoint [14] this paper provides a framework for developing context-aware web applications. A web-based mobile tourism guide is implemented as a prototype using the framework. This is based on a client/server architecture. The client hosts a web proxy and a so-called Context Manager. The proxy observes the data streams between browser and server and replaces tags with the corresponding context information. Context data is provided by the Context Manager, which collects relevant data such as user information or location. In addition, the Context Manager can query an external Semantic Server. The Context Manager considers the context properties location, time and device (C.P). Physical location information is provided in form of GPS coordinates sensed by the Context Manager..

CRUMPET [14] This paper provides a number of usability issues for example, the limited capacity of handheld devices, user interaction via small screens, mediation of heterogeneous services, as well as other issues of wireless

access to internet-based services. Key features of this paper are personalisation, location awareness, interaction facilitation and service mediation. Its realisation as a multi-agent architecture opens up additional prospects.

One of the key issues in this paper discuss the heterogeneous ontologies that are likely to be used by legacy systems. Ontology in this context is a description of the domain specific semantics that are associated with the terms that exist within the information sources. Service brokering, as characterised here, requires an ontology that allows matching and relating user requests, user interests, and service offers. The mediator agents and the user model are ontology-based

## ONTOLOGIES

Visual Ontology Modeling Tool [2], in this paper a visual ontology modeling tool called VOEditor Tourism domain ontology is provided. The Tourism Recommendation System is a travel consult system used for expect budget traveling. Although travel resources on the Internet are available, they distribute widely on the Internet. If users want to achieve such information, they need to spend much time searching on the Internet and the results of the query are usually not enough accurate and sufficient. So it is necessary to design a Tourism Recommendation System to help those budget travelers to arrange their journey and budget. Ultimately with further development, the tool needs to be improved in the aspect of graphical display. In the aspect of ontology storage, the manner of OWL file storage and relational database storage could be adopted now.

Aussenac [1] this paper deals with the automation of ontology building process from HTML pages. Our methodology is based on the complementary use of two approaches. The first approach is based on normalization and formalization techniques, in this semantic concepts and relations are translated into formal concepts and roles (using for example OWL) and are inserted in the ontology and the second one exploits Web pages structure and is based on clustering techniques.

## CONCLUSION

In this paper we have explored some important aspects of tourism. We explored the solutions that tourists use to arrange their visits. These solutions covered how tourists worked with other, used maps and guidebooks, and both pre- and post-visited places. As discussed above Semantic web handles different issues in e-tourism. In addition to that we compare one tourism web page with another web page, for visual routing map semantic concepts used to map the source and destination with shortest path, which makes the visitor more interesting. Ranking is made with different dynamic web page packages and finally routing is done.

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