

## SMIS: A WEB-BASED STATE MANAGEMENT INFORMATION SYSTEM

Tarunim Sharma\*

Meenakshi Verma\*

Isha Sharma\*\*

---

### ABSTRACT

*Web-based information displays many benefits of multimedia technology. Using today's fast broadband connections, it is possible to stream sophisticated content to a computer anywhere in the world. This is an advantage for many people as the information can be received and read wherever and whenever it is convenient for them, which can be a crucial factor for busy executives. A significant amount of interactive multimedia content is now delivered via the internet. There is an abundance of information on the graphical and user interface aspects of WBIS site design. The WBIS is a technologically dynamic environment, and presents new challenges for developers. Consequently, the aim of this research was to investigate how organizations are currently developing WBIS-based information systems, and the advantages those systems are providing.*

*Web applications are popular due to the ubiquity of the browser as a client, sometimes called a thin client. The ability to update and maintain web applications without distributing and installing software on potentially thousands of client computers is a key reason for their popularity. This paper presents a Web Based State management information system (WBSMIS) designed for tourists coming from different states and countries. The primary goal of this application is to offer a suitable interface to its users in order to simplify and reduce the time needed for information and procedure management.*

**Keywords:** SMIS, SMS, Web-Based Application, WBIS

---

\*Faculty, Department of Computer Science, Maharaja Surajmal Institute, New Delhi.

\*\*Assistant Professor, Maharaja Agrasen Institute of Management and Technology, Jagadhri, Haryana.

## INTRODUCTION

**Web-based** information displays many benefits of multimedia technology. Using today's fast broadband connections, it is possible to stream sophisticated content to a computer anywhere in the world. This is an advantage for many people as the information can be received and read wherever and whenever it is convenient for them, which can be a crucial factor for a busy executive. A significant amount of interactive multimedia content is now delivered via the internet. **Web information system**, or web-based information system, is an information system that uses Internet web technologies to deliver information and services, to users or other information systems/applications. It is a software system whose main purpose is to publish and maintain data by using hypertext-based principles. A web information system usually consists of one or more web applications, specific functionality-oriented components, together with information components and other non-web components. Web browser is typically used as front-end whereas database as back-end.

## WBIS DEVELOPMENT LIFE CYCLE REQUIREMENTS ANALYSIS

The goal of requirements analysis is to gather the information necessary to develop a system that will fulfill the objectives of an organization. In the case of a Web-based information system, requirements analysis includes defining the objectives of the site; gathering information about its possible users and their needs, its content and the way in which it will be presented; and generating specifications and recommendations necessary for designing the system. Four elements are central to the analysis of a Web-based information system: **problem domain, users, content, and presentation**

### PROBLEM DOMAIN

It emphasize the importance of researching and understanding the problem domain of a Web-based information system at the beginning of the analysis phase. The problem domain refers to the "overall environment within which the application will exist. A clear definition and understanding of the problem domain, and how it relates to the organization's and its users' goals, is a prerequisite for achieving accurate system requirements.

**Users** - There is a close correlation between users' requirements and business objectives. Indeed, the goal of an organization is to provide products and/or services that customers are willing to purchase and/or use. Although users of a WIS have various attributes that increase the challenges of requirement elicitation and analysis, requirements analysis is still an essential phase of the development process. As Norton stresses in his article Applying Cross-Functional Evolutionary Methodologies to Web Development: "[u]ser participation in Web

development - although more difficult to achieve than in traditional development - is just as essential to success."

In general, users of a Web-based information system are very diverse with regard to their numbers, location, and attributes. WIS users tend to be more numerous than users of a traditional information system, which usually focuses on the needs of employees of a single organization or a single unit within an organization. The number of WIS users also tends to grow with time. This has a direct impact on the structure of the system, which needs to grow and evolve in conjunction with the growth of its user base. WIS users are located in different geographical areas, and, in some cases, in different countries. As a result traditional requirements analysis methods are impractical in this context and must be modified to take these new types of users into consideration. WIS users also have different interests and goals when using the system, and possess various browsing habits and levels of technical expertise that need to be taken into account during the analysis process in order to provide them with a system that will address their needs and interests.

Although it is difficult to gather information about WIS users, there are now more resources that enable such identification. Developers can refer to information gathered by survey organizations, academic research papers; or even data gathered by the organization from an existing Web-based information system or Web site. Furthermore, today's users have developed increasing levels of expertise in using the Web and can be more helpful during the analysis process.

Deshpande and Hansen adequately expressed the paradox of a WIS user's requirements analysis: "Web-based applications frequently deal with completely unidentified users, and their expectations (requirements) and behavior patterns decide whether the application is successful." Identifying complete users' requirements is extremely critical since, when it is incomplete, it has been identified as the top reason for information systems project failure. Gathering accurate users' requirements is also important since it serves as the foundation for the next two elements of WIS analysis, content and presentation, discussed below.

**Content** - Content refers to the pieces of information contained in the Web application or system. Content analysis is important for several reasons: the dynamic and interactive characteristics of a WIS, how the information is structured within the system and the types of data that will best address the users' and organization's needs. "Content analysis, however, requires deep knowledge of the user's profiles and tasks." Identifying what types of users are likely to visit the site and the tasks that they wish to accomplish with the application serves as a guide to the content analysis in the system development process.

Once the user profiles have been determined, content analysis identifies what types of content are most appropriate for the tasks the users want to accomplish. In the context of Web-based information systems, we can differentiate between static and dynamic content. Static content refers to html pages, images, or graphics. Dynamic content includes video clips, sound tracks and animations, as well as information dynamically generated at run time. There are a variety of technologies - such as cookies, applets, servlets, CGI programs, or computation-oriented applications - that can be utilized to provide a WIS with requisite dynamic features and interactivity. And although specific technologies are selected during the design phase of the system, it is still necessary for the WIS analyst to recommend what types of features should be used with a particular system based on the user profiles. Interactivity is another important dimension of content analysis, since it may be necessary for the analyst to recommend a certain level or type of interactivity that best corresponds to the intended users. Recommendations on the types of elements and features to include in a distance-learning site may be an example.

Another complexity of Web-based information systems resides in the fact that the system developers "have to make assumptions about the kind of networks their anonymous user's access." The technology and the types of networks connecting the users to the WIS impact the sorts of content that should be included in a WIS. Analysts, therefore, have to make content recommendations based on the following criteria: the users' profiles, the tasks that need to be accomplished by the users, the Web technologies currently available for these tasks, and their assumptions on the kinds of technologies and networks to which their customers will most likely have access - for example users' CPU time and network bandwidth - while remaining within the limits of the project's resources constraints.

**Presentation** - As mentioned previously, users of Web-based information systems are acquiring more experience and, by the same token, are becoming more demanding as far as content presentation is concerned. Thus, the visual appearance of a Web-based information system is extremely important. Users have now a plethora of sites they can visit and their expectations grow with the number of sites available for comparison-shopping. Therefore, offering an attractive and easy-to-use interface can make the difference between a system's success or failure. According to Forrester Research, "poor web design will result in a loss of 50 per cent of potential sales due to users being unable to find what they want, and a loss of 40 per cent of potential repeat visits due to an initial negative experience." Although this is partly due to content analysis and how the site is structured, it is through presentation analysis that WIS analysts can identify recommendations about the visual appearance that an interface

should have in order to be most attractive to specific users. The level of technical expertise of an organization's targeted users may be one example of how it can influence the visual appearance of an interface. For example, this may prompt the analyst to recommend easy-to-use and simple navigation features because of the intended users' low level of familiarity with the Web. Other elements that analysts need to take into consideration are related to the types of browsers, screen size and resolution that will be used by the system's users. It may be necessary for analysts to recommend certain features or interfaces in order to satisfy the profile of a particular system's users.

### **A METHOD OF ANALYSIS AND DESIGN OF WEB SITES**

Our method for analysis and design of WBISs consists of the following activities: E-R analysis, scenario analysis, architecture design, and attribute definition (Figure 1). First, the problem domain, where a WBIS is expected to operate, is analyzed by E-R analysis. Next, scenario analysis determines how potential users interact with the WBIS to accomplish their business goals. Based on the results from these analyses, the architecture of the WBIS is designed. Then attributes of the Web resources that consist of the WBIS are defined for maintenance. The WBIS is constructed based on the design. Finally, the WBIS is tested using the scenarios and introduced into the work place. It continues to be maintained and revised after the introduction throughout its life time.



information can be gathered or searched easily so in this paper following website has been designed to explain Web Based State Management Information System as work of research. Delhi is the capital of India. A number of Information Centers located in important cities across the world give out information regarding tourism and sightseeing destinations in Delhi. Delhi itself is a source of many an attraction for the tourists. So this website covers the information regarding tourism which helps them to explore the state DELHI easily and quickly.



**Figure 2 Home page of Website**

The architectural variety contributed to it by the Hindu Kingdoms, the Delhi Sultans, the Mughals and the Britishers are appealing to tourists of variable tastes and choices. The city bazaars and the shopping malls present a wide variety of goods and items for the consumers. The restaurants presents a rich variety of Indian delicacies as well as Chinese and continental foods. Pubs, bars, discotheques, cinema halls make the evening rendezvous for the tourists. The entertainment parks, museums, art galleries, fairs and exhibitions, attract a large number of tourists. New Delhi is one of the popular tourist destinations in India and attracts travelers from all across the globe. The useful information about New Delhi provides all the necessary information for the travelers while visiting this beautiful land.

The screenshot shows a web browser window with the address bar displaying 'DELHI ONLINE - Microsoft Internet Explorer'. The page content is organized as follows:

- HOME** (green sidebar)
- PLACES** (green sidebar)
- Airlines** (green sidebar)
- Worship** (green sidebar)
- Museums** (green sidebar)
- Auditorium** (green sidebar)
- Banks in Delhi** (green sidebar)
- Embassy in Delhi** (green sidebar)
- Whole sale markets** (green sidebar)
- to sign up** (green sidebar)

**HOTELS IN DELHI**

- Luxury Hotels in Delhi**
  - Grand Inter Continental Hotel
  - LeMendien Hotel
  - Park Royal Hotel
  - Maurya Sheraton Hotel
  - Hotel Grand Hyatt
  - Hotel Ashok
  - Hotel Crowne Plaza Surya
  - Hotel Hyatt Regency
- Deluxe Hotels in Delhi**
  - Hotel Marriott welcome
  - The Park Hotel
  - Hotel Siddharth
  - Vasant Continental
  - Hotel Claridges
  - Hotel Centaur
  - Hotel Oberoi Maidens
- Medium Hotels in Delhi**
  - Hotels Hans Plaza
  - Hotel Kanishka
  - Hotel Qutab
  - Hotel Connaught
- Budget Hotels in Delhi**
  - Hotel Broadway
  - Hotel Janpath
  - Hotel Sun Court
- Airport Hotels**
  - Radission Hotel
  - Hotel cenataur
  - Hotel Ashok Country Resort
- Hotels Around Delhi**
  - Hotel Plaza Solitaire
  - Hotel Uppal's Orchid
  - Hotel Rajhans

FOR MORE DETAILS [CLICK HERE](#) FOR MORE DETAILS [CLICK HERE](#)

**Figure 3. Web page showing Hotels information in Delhi**

Many of the renowned hotels in India are located in New Delhi. Almost all big hotel chains have their operations in New Delhi. These **Delhi hotels** offer world-class hospitality and leave an everlasting impression on the minds of tourists. They are known worldwide for their royal treatment of guests and outstanding services. Book any **hotel in Delhi** and you will get the opportunity of marveling at the rich history, culture and affability of this ancient city. Hotels in New Delhi have been categorized under various headings like five star deluxe hotels, five star hotels, four star hotels, three star hotels, two star hotels, budget hotels and other **hotels in Delhi**. Just like its history and monuments, the **museums** of Delhi fascinate any visitors who are curious to know about the heritage and history of Delhi.

**Banks** are an integral part of an every economy. Bank is a financial institution that accepts money in form of deposits from public and lends money in form of loan from that deposit to the public. In other words Bank is an institution that utilizes public money for public. It gives interest to public on its deposits and in return charges interest on the loans disbursed by the bank. On the other hand various **temples in Delhi** enjoy the status of famous tourist destinations well known for their architectural brilliance and the spiritual experience they add to the lives of the people who visit these temples.

**Shopping** is always on top of the itinerary chart for any tourist visiting Delhi. There are whole shebang of items of tourist choice, such as jewelry, carpets, handicrafts, precious stones, silks and silver ware - all synonymous with India. Connaught Place, Karol Bagh, Sarojini Market and Chandni Chowk are the principle shopping areas. The distinct feature of Delhi market is that every shopping hub has its own ambience and specialty.. To know the real culture and traditions of city, the best way is to stroll or wander around through its market places, for it is here that contemporary culture is most visible to the visitors.

Indira Gandhi International Airport is an international gateway whereas the Palam Airport provides the domestic connection. **Delhi airport** has two terminals, Terminal 1 is domestic and Terminal 2 is international.

## CONCLUSION

Web information system, or web-based information system, is an information system that uses Internet web technologies to deliver information and services, to users or other information systems/applications. It is a software system whose main purpose is to publish and maintain data by using hypertext-based principles. A web information system usually consists of one or more web applications, specific functionality-oriented components, together with information components and other non-web components. In WBIS, information can be gathered or searched easily so in this paper website on Delhi has been designed to explain Web Based State Management Information System as work of research. Delhi itself is a source of many an attraction for the tourists. So this website covers the information regarding tourism which helps them to explore the state DELHI easily and quickly.

## REFERENCES

- [1] Amber, S. J., (2006) *Introduction to Object-Orientation and UML*. Retrieved 2008, from <http://www.agiledata.org/essays/objectOrientation101.html>.
- [2] Booch, G., (2007) *Object-Oriented Analysis and Design with Applications*. Pearson Education.
- [3] Adams, D. A., Nelson, R. R., & Todd, P. A. (1992). Perceived usefulness, ease of use, and usage of information technology: A replication. *MIS Quarterly*, 16 (2), 227-247.
- [4] K. B., Mahajan, B. V., Pawar, A Web-Based Tourist Information System, Maharashtra University, Jalgaon.