

# **EBARIO MAP-BASED TOURISM WEBSITE**

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This project is submitted in partial fulfillment of  
the requirements for the degree of Bachelor of Computer Science with Honours

Faculty of Computer Science and Information Technology  
UNIVERSITI MALAYSIA SARAWAK  
2004

## **Acknowledgement**

We are grateful to our supervisor, Dr Alvin Yeo Wee. We would like to convey our special thanks to him for his guidance, assistance and encouragement. He had been patiently guiding us to complete the website and this report.

We would also like to thank Miss Poline Bala, the eBario Research Project team leader for providing information about Bario, photograph and the Kelabit traditional songs. A part from that, we appreciate the effort given by Mr. CK Leng of Map Portal for his idea and suggestion for the map.

In addition, we also wish to thank Mr. John Tarawe of Tarawe Lodge and Mr. Bala Pelaba of Bala HomeStay for providing information on the content of the website, and Miss Esther Bala who assisted us when we visited Bario. We would like to express our appreciation to all lodge and homestay owners in Bario and tourist guides whom we interviewed in Bario.

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## **Abstract**

This map-based Bario tourism website is part of the eBario research project. It is developed to promote tourism in Bario and to preserve its cultural heritage. The website contains information about Bario and the Kelabits. In addition, users may make accommodation and tourist guide reservation through the website. The website also consists of a zoom-able map that is built using Scalable Vector Graphic (SVG) format. This interactive map will provide a semi-virtual visualization of Bario to the user. The website is developed using Active Server Page (ASP), JavaScript, Hyper Text Markup Language (HTML) and Scalable Vector Graphic (SVG). The database of the website is created and run on Microsoft Access.

# Chapter 1 Introduction

## 1.1 Background

Bario is located in Kelabit Highlands, 3280 feet above sea level. Due to this geographical barrier, this wonderful place is isolated from the rest of the world. The main activity in Bario is agriculture. The cool climate with an average 20°C in Bario enables the residents to cultivate citrus fruits (oranges), coffee and sugarcane. However, Bario rice is the most popular and significant agricultural product. Other well-known products include high-potassium Bario-made salt and the refreshing, juicy Bario pineapple.

About four years ago, there were neither telephones nor reliable electricity. There are also no paved roads in Bario. Today, Bario is adopting Information and Communication Technologies (ICTs) through a research project that is carried out by Universiti Malaysia Sarawak (Unimas). The main objective of 'eBario', the name given to the project, is to bring ICTs to the Bario community. Unimas secured a grant of about RM600, 000 for the research from Demonstrator Application Grants Scheme (DAGS) and a grant of USD53, 000 from the Canadian government's International Development Research Council (IDRC) (eBario, 2001).

After two years' effort, ICTs have been successfully brought into Bario and employed by the people in Bario. The research team set up a Telecentre and four Very Small Aperture Terminal (VSAT) satellite communication systems. The Telecenter is where the residents can have access to computers and the Internet. The implementation of the Telecentre and VSAT allows them to communicate with other

people all over the world via email and telephone. Besides improving communication, ICT can also provide another alternative for boosting the tourist industry in Bario that is through eTourism.

*“eTourism is about using Internet technologies to transform the way key tourism activities are conducted. The developments in information communication technologies (ICTs) and the Internet in particular, have revolutionized the tourism industry as a whole, generating new business models, altering the structure of tourism distribution channels, and re-engineering almost all tourism-related processes.” (eTourism, 2003)*

With the introduction of eTourism, tourists can retrieve information easily and fast from the relevant website. They are able to view information of most of the tourist spots throughout the world as long as they are able to access the internet.

A tourism website, as part of the eBario project is to be built to promote Bario as another attractive tourist destination in Malaysia. It is believed that residents of Bario will benefit from eTourism. Tourists from all over the world can obtain Bario tourism information easily from this website. Therefore, the promotion of Bario will be more efficient and effective by implementing the website as it complements the conventional way, which is by providing brochures and leaflets in the tourist information centre.

## 1.2 Problem Statement

There is a huge gap between the development pace in Bario and other parts of Malaysia and even in Sarawak. There are not many facilities available in Bario, such as paved roads. The usage of cellular phone, which is now considered a part of modern life, is not available to them. Bario has just started to install basic facilities such as telephone a few years ago.

The residents of Bario are dependent on agriculture for their livelihood. However, not many of the younger generation are interested in agriculture. In fact, many start to leave Bario to pursue higher education or to look for better working opportunities in bigger towns and cities. A possible solution the earning and rural-urban migration problem is to draw more tourists to Bario through eTourism. More tourists visiting Bario will eventually increase the residents' revenue and provide more employment.

Information about Bario is difficult to obtain, especially for tourists from various countries and even local tourists because there is not much information available or the current information available is incomplete. Furthermore, there is no clear and concise map that shows the whole area with detailed information about each landmark. Without a good map as a guide, tourists are unable to plan their routes and their journeys beforehand. They do not know where the places of interest are and how far it is from where the tourists will be staying.

Finding lodges or homestays for their accommodation is also another difficulty for tourists. Conventionally, tourists only know of the vacancies of lodges houses or homestays when they arrive in Bario. They will ask the people at the airport for any



accommodation available but the people do not guarantee that there will be vacancies. Eventually, the trip might turn out to be very inconvenient if it happened that all lodge houses and home stays are fully occupied.

### **1.3 Proposed Solution**

ICTs that are brought in by the eBario research project can provide a solution to the problems mentioned above. A map-featured website can be developed. As one, World Wide Web can be accessed by people from all over the world. Information can be accessed by tourists wherever they are, whenever they need it as long as they have access to the Internet. The map that is included in the website will provide a semi-virtual visualization of Bario to the viewers. Information about the interesting places and their accommodations will be clearly stated and indicated in the map.

With this website completed, we hope that it will attract more tourists to Bario. If the website managed to do so, there will be higher demand for their handicrafts and souvenirs, accommodation, tourist guides and porters. More working opportunities will be available for the residents, and as a consequence, their income will increase. By then, the younger generation of Kelabit will not leave Bario for working opportunities in the urban areas and the population of the residents can be maintained if not increased.

## 1.4 Objectives

This map-based website can provide easy access to information about Bario and the Kelabits. The essential information of Bario like the people, its history, attractive tourist spots and other specialties will be included here. In addition, the Kelabit's profile such as their culture and the language spoken will also be introduced briefly. There will be also proper information on how to reach Bario, as well as the flight schedules and travel tips. All these useful information can be obtained from a single website. The map features embedded in the website will distinguish itself from other tourism website. Tourists will be able to locate the place or landmark from the map.

This tourism website will be useful to tourists and residents. Tourists can know the availability of accommodation and tourist guides if they wish to visit Bario through the website. They can send their reservations for lodges or home stays and tourist guides they need in the booking function available in the website. Their reservation will be sent to the person in-charge of the relevant homestays, lodges or tourist guides through email. Also, the lodge house owners will be more prepared for the correct number of tourists visiting Bario. This is a good demonstration of the benefits of ICTs. It will give the people of Bario a clearer understanding of the benefits brought by ICTs.

Besides promoting tourism in Bario, it will help to preserve the cultural heritage of the Kelabit, as well. Terminology of English and Kelabit terms will be included in the website. The website will also include a gallery that consists of traditional songs, photographs and the pronunciations of some phrases in the Kelabit

language. The terminology section and the pronunciation will be helpful to the visitors if they need to request basic things like a cup, basket or room. Greetings like “Hello” and “Good morning” and simple questions like “Where do you come from?” are examples of useful phrases that can be learned by the tourists beforehand.

Last but not least, hopefully, this eTourism solution can also help to improve the standard of living in Bario by promoting Bario as a new tourist spot to the local and the overseas tourists.

In sum, the objectives developed a map-based website are

- provides comprehensive information of Bario including maps
- provides information about lodges and homestays and enable tourists to make reservations of accommodation in advance
- provides information about tourist guide and enable tourists to reserve a tourist guide in advance
- contains information about their cultural heritage such as language spoken

## **1.5 Method Used**

This website will be developed using the web-based system development life cycle. As the name implies, this methodology is chosen because it is more suitable as this methodology is used for developing websites. This methodology includes elements that are not mentioned by other system development cycle such as the navigation structure of a website, the screen layout and web page design. However, the content

development of the website will follow a spiral model. This is to ensure that the content of the website will be reviewed and revised iteratively.

This website emphasizes the zoom-able, interactive map. It will be drawn using Jacs Webdraw that will produce maps in Scalable Vector Graphic (SVG) format. Files of interactive maps that is built in SVG format is smaller in size compared to maps drawn with other software such as Macromedia Flash. Thus, this can ensure that the size of the map will not drastically affect the loading time of the website.

## **1.6 Scope**

This map-based tourism website is a part of the eBario research project. It attempts to promote Bario as another tourist attraction in Malaysia. It consists of the introduction to Bario and the people, activities, festivals and other facilities such as, accommodation and transportation that are available in Bario.

Since this tourism website focuses on Bario, the data that is not relevant to tourism like the Bario demographic information or details of the wildlife in the Pulong Tau National Park will not be included in the website.

The multilingual feature will not be included in this website too. The content of the website will only be provided in English.

## **1.7 Significance of eBario Tourism Website**

The eBario tourism website is built using dynamic map-based solution which enables the user to locate and zoom down to a specific area in Bario. This function enables the user to have a clearer and more concise view of the place they want to go.

Moreover, this tourism website will also be maintained and used by the Bario community. Residents of Bario can constantly update the content of the website. For example, if there is any special event held in Bario, announcements and new updates can be made immediately. Therefore, the information provided by the website is more complete and up-to-date.

With this tourism website, Bario community can involve another type of economic activity which is tourism. By bringing in tourist to Bario, it is hoped that the living standard of the Bario people can be improved and the Kelabits can preserve their cultures. The major activity and attraction in Bario is trekking. Thus, if there is tourism activity, the natural environments will be preserved to attract more tourists. Also, existence of tourists will create more job and business opportunities in Bario. Employment as tour guides and porters, opportunity in providing accommodation and facilities to tourists, producing and selling souvenirs to tourists would also increased.

## **1.8 Overview of Report**

This report consists of eight chapters. The first chapter is the introduction chapter that describes Bario and the Kelabits briefly and contains problem statement, objective, scope and the significance of the tourism website.

In Chapter 2: Review of Existing Tourism Websites, we will report on the findings from our review of 30 existing tourism websites. The review covers the content, features and functionalities of the websites and the scripting languages and tools used to develop them.

The Methodology is the third chapter of this report. In this chapter, the methodology that we will use to develop this website is introduced. Every phase of the methodology will be described.

Chapter 4 and Chapter 5 are Analysis and Design respectively. These two chapters will describe in detail what was carried out during the analysis phase and design phase. Requirements elicitation will be explained in the chapter Analysis while the database schema and data dictionary are detailed in the chapter Design.

Chapter 6: Implementation reports on the implementation of the website. Each module of the website is explained in detail. Moreover, we include the complete navigation structure of the website and the configuration that are completed.

Chapter 7 is Testing and Evaluation which detailed tests that are carried out (functionality, usability and user satisfaction test). The test results are described, as well. The website limitation that is discovered during the testing is also provided in Chapter 7.

Last but not least is Chapter 8; Conclusion and Further Works describes the problem faced throughout the development process, the objectives' achievements and the further enhancements that can be done to improve the website.

## **Chapter 2 Review of Existing Tourism Website**

### **2.1 Introduction**

We conducted a review on 30 existing tourism website. The aspects that we observed are the contents of tourism websites and scripting languages and tools used to develop the website. Through this review, we wish to obtain the content that should be included in tourism website. In addition, the language that is commonly used and popular among current website developer could be known. We hope that these findings can be our guideline in developing the Bario tourism website.

### **2.2 Content in Tourism Websites**

#### Map

After reviewing the existing tourism website, we discovered that maps are divided into different categories such as tourism regions map, state park map, city map and country map. Besides, it can be sorted by types of activities the visitor wishes to carry out. The examples of activities are skiing and equestrian. This feature brings convenience to the visitor when viewing maps because those maps have been categorised into a smaller scope. These kinds of maps are found in the “Official Tourism website of South Carolina” (2003), “Virginia Is for Lovers” (2003) and “Ireland West Tourism-Travel guide to Galway, Mayo and Roscommon” (2003). In some website, a new browser for map will be shown. While some of the website does not show information on a new window. It will show its description when the cursor is placed over the specific region on the map. This saves more time, as popping up

another window will require more loading time. However, this presentation is not suitable if the developer wants to insert more complete information.

The map provided in most of the websites can be highlighted by a simple click. Then, a brief description about the highlighted region is displayed. For example, “Ireland West Tourism-Travel guide to Galway, Mayo and Roscommon” (2003). Usually, photograph of scenery taken from the specific places will be displayed. The brief description mentioned above consists of ‘car rental’ that lists all the car rental companies in that region, bus services available, contact persons in terms of emails, addresses and phone numbers and price of the services. There will also be description of the specialty of the region that the users clicked (Hawaii Visitors and Convention Bureau, 2002).

We also noticed that some of the map does not follow the actual scale. It is only a draft version of the actual map. On the other hand, some websites provides a very technical map to the visitor (e-live, undated). One is required to have a very wide knowledge in geography to use the map because the location is stated in term of the actual coordinate. The latter gives very complete information of the map, but at the same time, it is confusing. The target range of visitor of tourism website is very wide. Thus, young visitor may find it difficult for them to interpret the map.

### Travel Planner

There are certain websites that come out with maps to enhance their functionality, not for viewing purpose only. For example, in the official for “Melbourne Victoria Australia” there is “Route-planner” which enables the tourist to search for