Abstract

Mobile commerce is creating entirely new opportunities for both mobile devices and services, where users of mobile devices can interact with service providers through mobile and wireless network for information retrieval and transaction processing. This suggests the worldwide access to tourists’ services in general being realized within the next future. While much of the underlying technology is already available, there are challenges with respect to usability that need intelligent solutions. Mobile technologies gradually enable internet access across mobile platforms and solutions which provide a range of new opportunities and challenges for the tourism organizations to develop m-commerce applications. This research investigate the possibilities of mobile services in the market/promotion of South African National Parks services and therefore propose a framework aimed at supporting national parks through the design of a new facility that will connect all national parks into a single distributed architecture. This is with the aim to add value to both the national park business as well as its customers, through identifying features that the modern information system should support to add value to the customers and can make national park business more competitive and profitable. A prototype of the infrastructure will be designed and implemented to simulate the application.

Introduction

South African National Parks (SANParks) is striving towards enabling all the communities of South Africa to benefit from its activities. SANParks is therefore transforming so that it moves from being inhibited by legacies of the past, to becoming a vibrant and dynamic organization that is an international leading edge agency. For SANParks to achieve this it needs to create mechanisms of disseminating information to local as well as international tourists. It also requires that it create an effective information system that allows sharing of information between and among all the stakeholders in the national park industry. Wide area networks, namely internet, have made possible the creation of a global market place largely independent from the physical location of users and goods. [2] [5]. Mobility has added a new dimension to this picture. Portable devices, notably cellular phones, and wireless networks have made this global market virtually accessible to millions of consumers. This, besides extending the e-commerce reality to a much larger number of users, has also motivated the creation of a large set of value-added services specifically targeted to mobile consumers. The reality is that the static web pages that are designed to inform the public about services or products provided by our National Parks are not doing enough to increase the targeted market. Therefore we embarked on formulating an architectural framework with the aim to add value to both the game park business as well as its customers. In this research customer becomes the king, hence what features must a modern SANPARK information system support that first adds value to the customers and on the other hand can make the SANPARK business more competitive and profitable. Our preliminary investigation shows that we are to look beyond tourism customers, market SANPARK as destinations that earn customer loyalty, and design a new look that will enable it fulfill a more comprehensive role of providing rich conservation information to users. The system envisaged uses a single distributed architecture to connect all national parks over the internet infrastructure providing new services to both desktop and mobile users.

Related work

Due to the fact that SA National Parks are valuable assets that directly and indirectly contribute significantly to the South African economy, it suggests that there should be a customer sustaining system to keep the enterprise growing. The emerging world of m-commerce applications needs a set of guidelines to drive development. We envisage SA national park will evolve into a knowledge-based resource for various purposes: Tourist destination, Custodian of Conservation data, Knowledge Archive for Researchers in the areas of Botany, Agriculture, Conservation, Zoology and anthropology etc. A first relevant observation is that the common client/server architecture widely used in the internet-based e-commerce does not fit the needs of a mobile
environment [3]. This is because in this model most of application logic is usually demanded to the client which in m-commerce is supported by small, limited devices such as cell phones and cannot count on a reliable network connection to transfer part of its computations on the server. This suggests a different architectural model explicitly suited to the needs of m-commerce in the tourism industry for national parks in particular. Using the m-commerce transaction topology will help us in the definition of the architectural framework envisaged. From the point of view of access modalities, m-commerce services can be characterized as subscribed and un-subscribed. Subscribed services are mostly used in both e-commerce and m-commerce, because they have stronger security level due to personalization of services for specific users [1] [4]. We intend to use a Community-based web engineering approach to creating this infrastructure. The research shall identify the actors, but also so-called community members and their social role in the electronic community. A multimodal infrastructure which is made available on subscription basis over the Internet is required. Research results will be classified and archived for retrieval at a cost to the requester. We have looked at the system called Creation of User-friendly Mobile Tourism services which has realized a personalized, location-aware tourism support, implemented as a multi-agent system with the concept of service mediation and interaction facilitation [6]. Personalization is one of the key features to facilitate the use of complex services on mobile devices. Hence the distributed database infrastructure for the South African National park system seeks to consolidate the linkages and partnership between national parks and other stakeholders in the promotional and marketing of services and products provided by the South African National park industry.

Methodology and Work Done

Designing an architectural framework requires a thorough understanding of the requirements, more so when context data is very crucial part of the architecture being designed. Therefore the tasks involved in the methodology are the following:

- We have evaluated existing IT-level support in National facility with respect to Nature Conservation information and its marketing and support in South African Nature conservation as part of information gathering resulting in the model which is currently being used in Nature Conservation.
- Investigated wireless commerce services to create customer values that promote customer loyalty based on the enterprise values through identifying the services that add customer value and promote customer loyalty in the same process.
- Developed system requirements for an architectural framework that support our research objectives using the Unified Modeling Language (UML).
- Currently looking at how we can use the Remote Method Invocation over Internet inter-ORB Protocol for communication between the web server (handles the request and host the web site) and the application server (handles the request for the logic of the application).

Future Work

Design of single distributed repository for storing, retrieval and dissemination of the nature conservation information to the tourists/researchers in the national parks.

Conclusion

This envisaged architectural framework is being informed by taking into consideration that wide variety of content should be available with the national parks system to meet the needs of different users with varying tastes and in order to keep users coming back. Our focus in this study also reveals some inherent differences in e-commerce and m-commerce, which suggest some modifications in the existing ideas. The development of the single distributed national park system will give us an understanding of how mobility affects web site’s effectiveness.

References