# Development of Mobile Tourism Platform to perform Collaboration for Tourism Information Acquisition

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**Abstract.** With the changes in travel patterns brought about by mobile-based tourism services, a detailed research on a collaboration model for acquiring information and making a prior visit to the travel destination has been made possible. It is possible to now design precisely a system that allows the collection of information that fits the purpose of the trip, combine sensors of mobile devices with such information as well as make use of geolocation information to achieve the mission of the trip. This study sought to design an information acquisition process system for travel information through collaboration, providing a mobile tourism platform where cultural content can be proactively acquired.

**Keywords:** collaboration model, sensor network, fusion of culture, tourism contents

## 1   Introduction

The progress in personal mobile communication devices and media has changed the mode of participation used for acquiring and consuming tourist information into one that is more proactive [1, 2], and is also affecting the travel patterns of consumers. Travelers used to determine their itinerary based on the information they acquired through acquaintances [3], but with mobile devices and networks their trips are being increasingly focused on a specific purpose. They are now able to get in touch with fellow travelers that they did not know before. Mobile devices that can connect to the internet or use geolocation information or sensors allow more detailed targeting of the travel group's goals and one can share quests or new information acquired any time. The development and convergence of communication and media technology that has enabled the acquisition of information through individual mobile devices regardless of time and place already has a sufficient infrastructure to meet the needs of tourism consumers and is promoting the development of a ubiquitous environment[4].
  There is now a need to not only provide individual users with smart information, but link them up with fellow travelers who share the same goals in travel so that they can

enjoy a bonding experience during travel[5], acquire in-depth information and bring the best of both worlds of individual travel and group travel together[6].

This study realized a participatory program for mobile tourism platforms that are based on sensors and geolocation information, through collaboration applied to such tourist contents.

## 2 Design of a collaborative mobile system for the acquisition of tourist information

The advantage of collaboration in acquiring tourist information or experience is that it can help promote pre-determined missions rather than individual goals. It is also possible to maximize the promotion effects on a tourist destination or tourism resource by verifying and confirming the acquired information through collaborative mission implementation. In order to capture such advantages, a collaborative mobile system was designed to enable content development focused on individual/collaborative quests of missions, how to join groups, notification on goals through social networks.

Figure 1 below shows a simplified version of the mission implementation process through collaboration. First, an expedition team for the tourist destination is organized and applications for participation are received to complete the expedition team(①). Once the head of the expedition team is determined, notifications on offline meetings for the mission depending on the purpose of the travel are given and the mission is implemented(②). The quest for implementing individual or group tasks is extracted from the data base to implement the expedition task list(③). The progress or completion of the mission is saved on the expedition DB to be managed as history that can be used for later tasks(④). Figure 1 shows the flow of the parsing and processing of such data.



**Fig. 1. Parsing the data and processing process**

## 3    System configuration

Based on the composition of such necessary information, the functions for the application that offers collaborative tourist information are further categorized into

information on the destination, data management for the mission implementation, composition of an expedition team, and history management for individuals and groups. The UI that configures the mobile integrated application for collaboration is made up of an information page on the travel destination, a page for mission implementation, composition of an expedition team and history management activities for individuals and groups. Figure 2 shows a part of the configured application.



**Fig. 2.** Screen shot of mobile application

To implement collaboration, a messaging system between team members has been realized, and it was also made possible to confirm the content or geolocation information of the destination through a map. For configuration, the following map API was used to ensure a location notification system using GPS information. To verify the location of the destination or mark any alliance organizations, the overlay method of the map's API was used. The application thus configured has pages with features for general information on the destination, treasure hunts, composition of an expedition team and expedition history management.

# 4    Conclusion

Acquisition of information on tourist destinations or cultural experiences can be done through the internet or traditional media such as magazines or advertisements, as well as in-person visits. But information gained in such a way can be one-dimensional and limited. If the information to be acquired can be planned ahead and managed as part of a data base and provide such information to visitors who share the same purpose of travel, a more proactive approach to information acquisition can be possible. To that end, this paper designed the development of a collaborative mobile tourist information application needed for data base management and group visits. Much more information can be shared through mobile devices connected to the network by individual users, leading to more effectiveness and continuity in the information provided. This would also help those in charge of promoting a travel destination in narrowing down their targets. Based on the suggestions in this paper, a collaborative game system for providing tailored information to a expedition team of cultural content-based travel was configured. By operating a data base that can establish a

collaborative participation model in tourism, a more proactive tourist culture can be promoted and cultural content can be more effectively delivered to visitors.

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