International Journal of Scientific Research and Management (IJSRM)
||Volume||10||Issue||02||Pages||EC-2022-747-751||2022||
Website: www.ijsrm.in ISSN (e): 2321-3418
DOI: 10.18535/ijsrm/v10i2.ec01

Mobile Guide for Museum in Context of International Mountain Museum, Nepal

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Abstract:
This paper aims to utilization of information technology at museum to provide the information about the museum and its artifacts properly in easier way with the help of digital devices such as mobile to the visitors.
Further, it attempts to trace important methods used to digitization as well as deliver the information from mobile.

Keywords: International Mountain Museum (IMM), Digital Guide, Artifacts

1. Introduction

Mobile Guide is an application made for delivering information regarding the museum and its artifacts of International Mountain Museum, Pokhara, Nepal to the museum visitors. This application is available in both IOS apple and Android operating system.

After installing, the application can be used when visiting International Mountain Museum. The QR code are placed in individual artifact. Scanning QR code through mobile, information in textual, pictorial and audio form can be achieved.

2. Baseline Survey

Museums consider as historical, cultural and economic area of any place. Most visitors/ tourists visit these places to get the information related to different topics. Nepal has got many museums. These museums are not proactive in providing information to the visitors as they are still run with human guide.

Further, in museums is very limited. To keep all information about the artifacts in physical means is quite impossible. So, there need a virtual space to accumulate all the information about artifacts. This will help the tourists to quench their thirst of knowledge. Also, more visitors will be attracted through the possibility of wide range of information.

2.1 Problem Definition

In the case of museum, visitors are deprived their enthusiasm in learning about artifacts due to lack of resources. It is not possible to provide guide to each visitor. It will create huge burden in handling human resources. The human resource guide can be replaced with the digital assistants. Developing digital content will make the content immortal.

2.2 Need Analysis

A survey was conducted for the visitors at the museum. The location of museum is at Pokhara which is one of the tourist hubs in Nepal. For International Mountain Museum we found the following data:

- Maximum of 3500 visitors per day.
  - Avg = 750(based on last fiscal year data)
- The museum gives Information about
  - Mountain people life
  - Culture

- Mountaineering Activities

As our study was focused on mobile application development. We conducted a baseline survey at the museum. The statistical analysis of the survey is as follow:

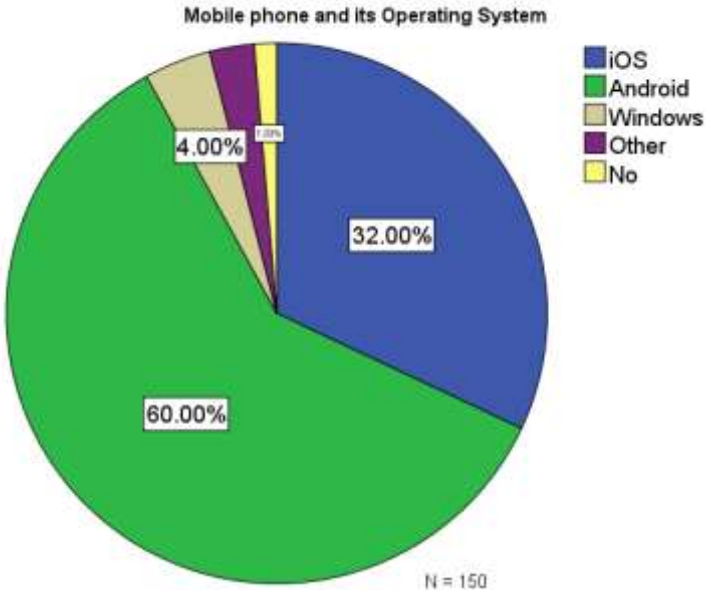

Figure 1 Operating system used by the visitors

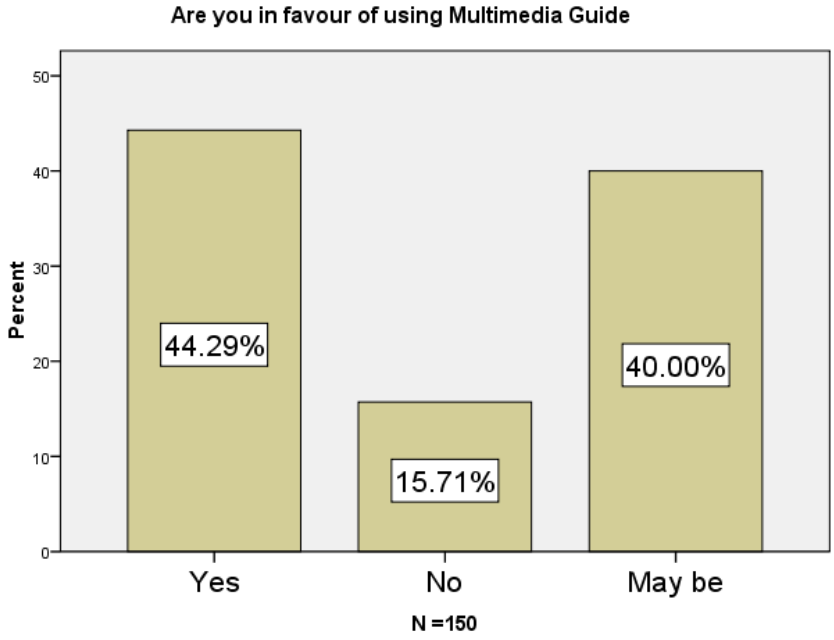

Figure 2 Visitors willingness on the mobile application

3. System Development

The system consists of Mobile application which shows the information to the visitors about the artifacts and web-based application which help to manage the multimedia contents of the artifacts.

3.1 Mobile Application

Mobile Application is developed for both the Android and iOS operating systems. Cross-platform development environment was used to perform development activities for both. We have used React Native for it.

Figure 3 Mobile App screenshot

React Native is the next generation of React - a JavaScript code library developed by Facebook and Instagram, which was released on Github in 2013. [1]

React Native helps developers reuse code across the web and on mobile. We don't have to build the same app for iOS and for Android from scratch - reusing the code across each operating system.

3.2 Web Application and Internet

Web application was made using Laravel Framework based on PHP Language. The backend for web application is My SQL database. The web application has facilities to insert items with multimedia information (text, audio and images) with multiple languages. Items are arranged by categories and QR codes for each item can be generated.

Intranet technology is preferred to be used in the museum. It is preferred due to low cost and less risk for intruders and data losses. Internet is used for installing the mobile guide application so that the number of downloads can be seen in the competitive business market.

4. Content Development

Content is very important aspect for the project like Multimedia Information Multicast for Museum/Art Galleries. Museum consists of lots of artifacts inside it. Multimedia information must be developed for keeping in the Mobile Guide Application. The content development was done in hit and trial method at first. The system developers tried to develop the content by self. It became a huge burden for the development team. Later on, a pool of content writers was called in a workshop, where they were provided guidelines to write contents on the artifacts. The constraints for doing workshop was we could use only holidays. Almost

all the workshop participants were engaged in full time jobs and procedure of the content development was as follow:

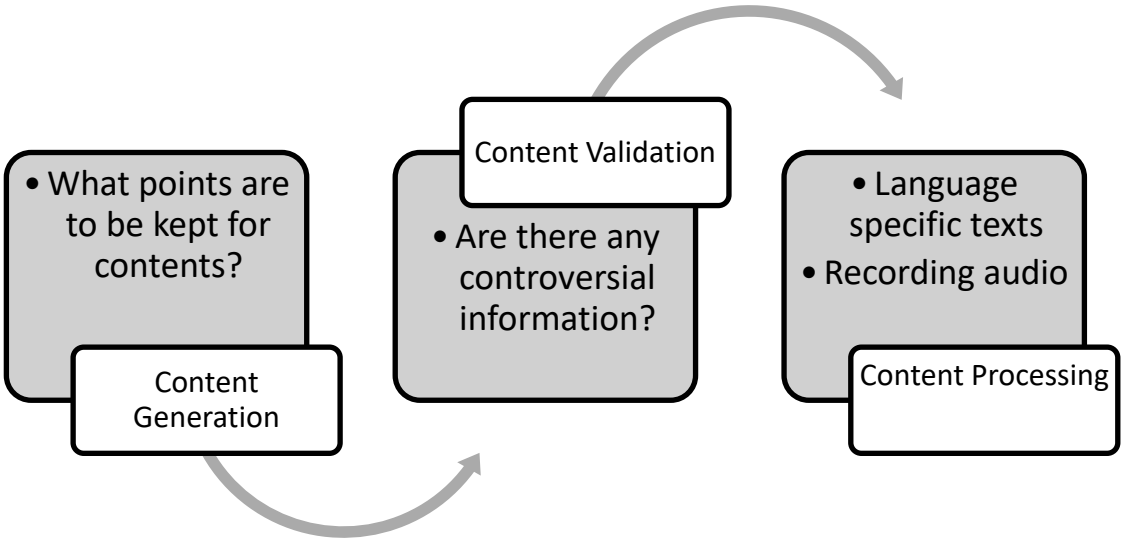

Figure 4 Procedure for Content Generation

4.1 Content Generation and validation:

The base content for each of the artifacts is needed. It should be collected and edited in proper way without losing originality and should be validated by the authentic body.

Figure 5 Group photo of experts, IMM staffs, content writers and Multimedia Team

4.2 Image Collection/ Creation:

The images which are being described in the artifact's content will help visitors to understand the content. Photographers was guided to coordinate with the content writers to take the pictures related to the contents.

4.3 Audio Generation:

The audio related to the content script were recorded using famous Radio Jockey (RJs) of Pokhara. We have used the studio of FM stations to record the audio. Previously we tried with our own recorder but the environment disturbance could not be mitigated. So we learned and tried best from the FM studios.

4.4 Text Translation

The text were first written in English language. It was translated to Nepali language from the content writers. Also it was being translated to Korean language from Handong Global University.

4.5 Uploading the Content

The multimedia contents (text, images and audios) were uploaded to the web space which could be further accessed through the mobile devices. The uploading contents were verified and tested and then uploaded to web application. It was further tested through the mobile devices.

5. Pilot Test

The project was first tested at college environment where the scenario as of site was created.

6. Conclusion

Mobile Guide for International Mountain Museum provides the information about the museum and its artifacts to the visitors easily with one touch using their own mobiles.

This guide is cost effective, can be developed with using user friendly technologies easily and simple to use for the visitors.

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