Smart Ecomuseum App Based on Local Cultural Resources

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Abstract. The purpose of this research is to develop an app based on local cultural resources, and realize a smart ecomuseum. The principle of an ecomuseum would be applied to research on local cultural resources. By developing an app that introduces the landscapes, stories, memories, nature, resources, heritage, and local community as designating certain sites in the territory, it is possible to realize a smart ecomuseum, where residents and visitors mutually communicate.

Keywords: sites, local cultural resources, smart ecomuseum app, mutual communication, recommended route

1   Introduction

Ecomuseum is a compound word of ecology and museum. This includes humans, and a certain heritage territory encompassing culture and heritage, including nature, ecology and industry, is designated as the range of museum, where the whole territory is organically constituted, and the residents voluntarily participate in the operation. This museum concept was introduced by Georges Henri Rivière in 1973, as applied to fit the local situation of France, and combine local residents' lives and folklore, so that humans, nature, and local heritage are combined there. In other words, the museum came outside the building, and went into the life of local residents. There are three elements to establish an eco-museum: the museum activity, residents' participation, and preservation of heritage. However, it is hard to define the establishment and operation of such an ecomuseum. Nevertheless, the biggest feature of an ecomuseum is to connect meaningful places in the territory, and network the local resources.

An ecomuseum means to connect landscape, sites, territories, memories, nature, traditions, heritage, and local community organically with each other, within a limited

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territory. This principle is also applied to the organic activity of each site in the territory through connections. Namely, the structure of connecting a core museum, satellite museums, or other meaningful sites itself becomes the elements that establish an ecomuseum. An ecomuseum is realized through resources dispersed in the territory. Namely, an ecomuseum is organized in the process of realizing a network, in order to contribute development and conservation of the local society in the local community, based on the thought that the heritage in a certain community should be preserved in the place.

2 Ecomuseum based on sites

An ecomuseum has a software characteristic of networking sites in the territory.
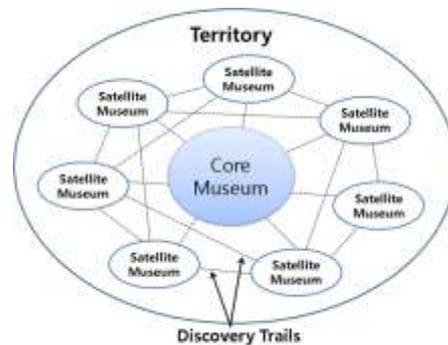

Fig. 1. Structural chart of an ecomuseum

As in Figure 1, which shows the structural chart of an eco-museum, Choi Jae-hee suggested that a core museum is equipped with three elements of heritage, participation, and museum, and the deficiency of an element among the three is a satellite museum[1]. She interpreted this to mean that these form a network that connects the axis of time and space, and shows the local lives. Moreover, she saw that the roads connecting each site linked to the core and satellite are the discovery trails.

3 Elemental analysis of sites

Each satellite museum, including the core museum, possesses local cultural resources in diverse forms. An eco-museum is a form in which the local landscape, each site, territory, memories, nature, tradition, heritage, and local community are all linked together.

Peter Davis stressed networking on each satellite museum for the operational strategy of an ecomuseum, and Jane Brown expressed Peter Davis' idea as 'the necklace model' where jewels are connected[2]. This connection of jewels can be realized in a mobile app.

I would like to plan an app by analyzing the site, namely the satellite museum, and

make a database of it, so it can show each site.

The elements that comprise a site are the landscapes, memories, nature, architecture, heritage, traditions, etc., so we can create a database by adding the site's location information or docent information.

The organized database is classified by each site, and can be provided to local residents and visitors. Anyone who visits the territory may get information of the area, if this is realized into a mobile app.

4 Case study

There is an experiential village called Buremi Village in Icheon Yulmyeon, Gyeonggi-do in Korea, which has the elements of an ecomuseum. Eun Sok Bae researched on suggesting an ecomuseum around Buremi Village up to Yulmyeon, where this village belongs to the territory[3].

Table 1. Sites in Yulmyeon Buremi Ecomuseum

Category	No	Name	Experiential elements	Other elements
Farming village experience (Buremi Village)	1	Green school	Cooking experience, yard	History of Buremi Village improved by the residents
	2	Rice planting experience place	Rice farming experience	History of farming
	3	Diverse farming experience place	Experience farming diverse crops	Providing information about the special local products
	4	Village mill	Pounding grains	The function of the village mill and changes of modern pounding technology
	5	Farming equipment exhibition	Exhibition of farming culture and equipments	Seasons of farming and customs
	6	Ecology park	Ecology observation and learning in the swamp	Understanding the local natural environment
	7	Fish land	Appreciating the landscape in Seoksan Reservoir	Understanding the reservoir ecology
	8	Udang pottery center	Experience pottery making	Understanding special local dye and crafts
	9	NamHaein Natural Dye	Experience natural dyeing	Understanding the special local dye and

|				crafts
	10	Multi-purpose experience place	Accommodation, cafeteria, auditorium, cooking experience place	Introduction to experiential programs for teens
Farming experience	11	Immanuel vineyard	Experience growing and harvesting grapes, and wine making	History of grape cultivation
Nature and life exploration	12	Cheongmi stream	Discover Yulmyeon starting from Cheongmi stream	History of Cheongmi stream and the area
	13	Yulmyeon Residents' Learning Center	Library, education room, residents' learning place	Information on the residents' programs and activities
	14	Street in front of Yulmyeon Office	Landscape of familiar Yulmyeon area	Information on the local commerce
History and culture exploration	15	Birth house of General Eo Jae-yeon	Birth house of Chungjang-gong Eo Jae-yeon	Information on General Eo Jae-yeon
	16	Chungjangsa	Shrine of Chungjang-gong Eo Jae-yeon	Meaning of commemoration service for Eo Jae-yeon
	17	Mai Hill fort	The hill fort with history since the period of Three Kingdoms	History of Mai Hill fort and the area
Field trip to farmhouse	18	Gounkkot Botanical Garden	Planting wild flowers, straw crafts	Information on wildflowers in Icheon and straw crafts
	19	Saemgol Farm	Watching the process of growing mushrooms	Effects and cooking recipe of the mushroom

Visitors who visit each site along the discovery roads may contact diverse cultural resources in the territory. The sites are networked through the discovery roads, and fulfill the structure of an ecomuseum. The connection ways, sites, and elements of each site, including the landscapes, memories, nature, architecture, heritage, and traditions, may form the database. Moreover, location information or docent information can be added in the database.

This app can be made by applying the principle of 'Smart Museum Based on Regional Unified App.' In order to increase efficiency of the app, there are three modules: the search module, communication module, and production module. Users of the app can find a site in the area where they are interested in visiting, using the search module. They can get news or new programs of the eco-museum using the

communication module, and provide feedback. The app supplier can register contents and update new information, using the production module [4].
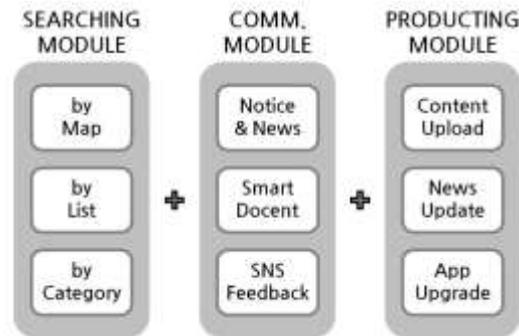
Fig. 2. Module structure of Buremi Ecomuseum App

If the location basis service is added to this app, visitors can find the nearest experience site, and can also find diverse contents of the area, such as the native restaurant, farmhouse with special goods, or the native crafts shop. Furthermore, the visitors can upload their review on the food, special goods or crafts they bought. Such reviews may make a real-time communication path with the residents.
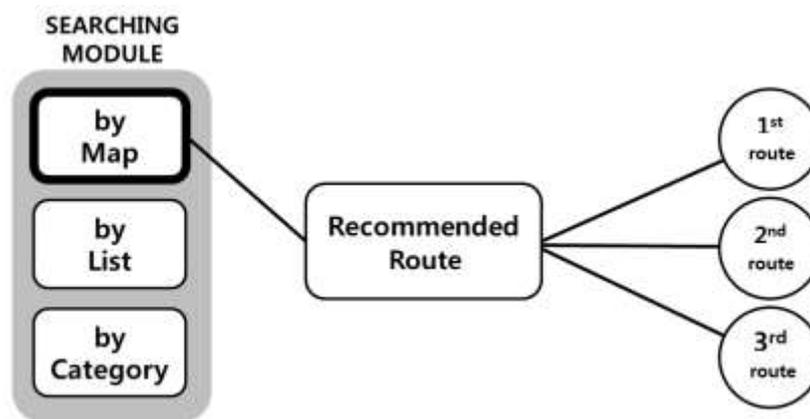
Fig. 3. 'By map' menu's recommended route function

Furthermore, a 'recommended route' function, which helps travelers make their journey easier, can be added in the searching module's 'by map' menu. Travelers can choose any route they like from several recommended routes in this function. For every route, they additionally provide many types of information, such as coffee shops, restaurants, hotels, souvenir shops, beautiful sceneries, places those have stories, and resident curators, which they can find on the way to their next destination. After all, 'recommended route' will match travelers taste with the specific type of area that they choose.

5 Conclusion

If an eco-museum app that connects each site in the territory is established, it can function as a smart ecomuseum. The residents and visitors can communicate with each other in real-time through this app. The search module of the app allows visitors to approach local cultural resources in diverse methods. There are three functions of search, of map, site, and category. The communication module allows visitors to obtain information on the local cultural resources in advance, so they can actively communicate with the territory. They may check local news and announcements before visiting, listen to descriptions on the site during the visit, and leave a review or suggestion after the visit. The production module allows local residents to make local contents easily, and upload new information quickly, so it increases utilization of the app.

Developing the Buremi Ecomseum app as such, and communicating with visitors using the resources as a mediator, can promote the sites in the territory. Such an active promotion will revitalize tourism of the area, and then it will increase income of the territory, while visitors will feel more satisfied in being there.

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