

## Development of the Walking Trail Applications on GPS-based Smartphone Utilizing the Local Narrative<sup>1</sup>

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### **Abstract**

*One of the current trends in Korea is tourism, which is developing more 'walking trails in nature' connecting touristic places with residential villages in order to help visitors experience the local environment. Another trend is the phenomenon that smartphone users number more than half the population. The users are equipped with Global Positioning System (GPS) to combine geographical and cultural information with the various applications using Local Based Service (LBS). Recently, an application named 'Dulegil around Bukhansan in Seoul' has been released, which combines many pieces of information about geography, tourism, cultural heritage and ecology. It also contains audio guide 'storytelling' effects so tourists can listen to new information dramatized in local stories or as simple narratives that describe the history of each place. Now, it has left a good precedent for developing user-centered applications for local tourism based on GPS.*

***Keywords:** tourism, smart device, trail, geographic information, Local Based Service, narrative*

## **1. Introduction**

### **1.1. Appearance of the well-being trend**

Since the beginning of the 21st century, the topic of well being has started to affect the consumption pattern of Korea. 7 out of 10 consumer goods such as medicine and food were selected as hot selling well-being products in the early 2000s. The well-being trend has been placed on the main axis of consumption and has widely influenced the Korean economy and culture.

Generally, if the income level of social members increases, they tend to want to consume more goods that aid a sounder and healthier life. This has indeed been the case, evident by the factors such as Lifestyles of Health and Sustainability (LOHAS) in the USA, Downshifter in the UK and Well-beingjok<sup>2</sup> in Korea. Initially, the well-being trend caused a rise in demand for high quality products by richer consumers, though this consumer demand soon expanded to all social strata. According to American marketing research in 2000 by Natural Business Communication, LOHAS was at first adopted by 30% of the general population, though later increased to more than 70% of the

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<sup>2</sup> It represents a group of people who pursue a well-being life style.

population. As the well-being trend became a general tendency, the physical and mental health became more popular.

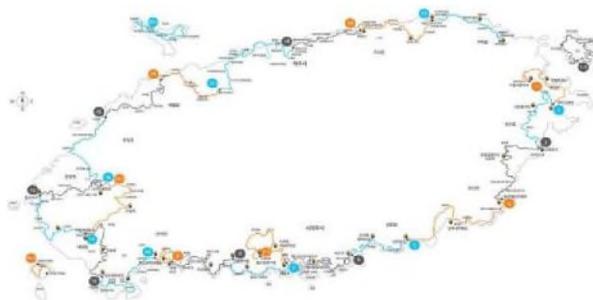
## 1.2. Development of walking trails

Thanks to the vogue of the well-being trend, the existing pattern for tours changed into a health-loving pattern that encouraged the development of walking trails in nature. The full scale popularizing of walking trails in nature began with Dulegil on Jirisan in Korea. Jirisan is a mountain located in the middle of the south of South Korea and is the highest peak on mainland South Korea at 1,916 meters. It extends over three provinces - Jeonbuk, Jeonnam, and Gyeongnam, and was designated as the first national park for an individual, celebrated mountain in 1967. The passages that the rural residents take around the foot of the mountain were soon connected and named Dulegil. 'Dule' means the lines of circumference connected to the edges of things. It quickly began to encourage nature-friendly tourism including the connection to local people. In May 2012, the total length of Dulegil was measured at 274 kilometers.



**Figure 1. The entire map of Jirisan Dulegil walking trail around the Jirisan Mountain**

Ollegil was formed on Jejuo on September 2007. Jejuo is an island located in the south of the Korean Peninsula and aims to preserve its natural environment including the topography of its volcano peak and the mild climate. Myeong Sook Seo, the President of Jeju Olle Corporation, found the association between walking and spiritual healing when walking on a pilgrimage in Santiago, Spain in early 2007. After she returned to Jejuo, she developed the walking trails currently there. 'Olle' means 'an alley to go home' in the Jeju dialect and 'gil' from the modern Korean language is added to it. Like Dulegil on Jirisan, most courses are connected with local nature reserves as well as the residences of local people. There are 20 courses over 430 kilometers around Jejuo so far.



**Figure 2. The entire map of Jeju Ollegil around the Jeju Island**

The number of tourists who visit Dulegil and Ollegil is increasing. The number of visits to Dulegil increased from 45,000 in 2008, to 90,000 in 2009, and then to 350,000 in 2011. The number of tourists who visited Ollegil increased from 30,000 in 2008, to 780,000 in 2010, and was over 1,090,000 in 2011, according to the estimations by Jeju City and Jeju Olle Corporation.

These walking trails in nature have gained great popularity due to the number of people seeking better physical health and can also be contributed to the development of healing trends where people look for spiritual cures and stability. There are said to be occurrences on these routes linked to spirituality and religion like in Santiago de Compostela of Spain, since people who walk along the Ollegil, for instance, experience more than a tour. Indeed, the motivations to visit Jeju's Ollegil are said to be to experience nature, curiosity, self-meditation, self-purification, promote health, improve family relationships and socialize. The results of an in-depth interview in 2009 found that most motivations were focused on spiritual healing.



**Figure 3. The entire map of Bukhansan Dulegil around the Bukhansan mountain**

Walking trails in nature have developed in plenty of areas in Korea. Bukhansan's Dulegil was made around the Bukhansan National Park in the north of Seoul in 2010. Bukhansan is a popular place that ten million people have visited every year since 1983 when it was designated as the 15th Korean national park. The Bukhansan Dulegil is divided into 21 sections and themes and runs a total length of 71.8 kilometers.

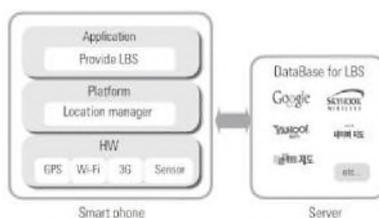
The government is involved in such routes actively. Seven parties, either branches of the government or organizations are currently involved in directly or indirectly making walking trails. The number includes a quarter of government organizations. Originally, the Ministry of Environment started making the walking trails, with the goals of making a National Trail that had beautiful landscapes and excellent ecological resources, and spreading the nature tour culture. It made a trail of 26 kilometers in length named the 'National Ecological Tour Trail' in 2008 and is planning to make a total National Trail of 2,500 kilometers using over 162 billion won as part of a 10-year plan until 2017. This is six times the total length of the Gyeongbu Expressway. By the end of 2012, the trail length should stand at 1,000 kilometers.

### **1.3. The vogue of smartphones**

Smartphones can be simply divided into iPhones and Android-operating phones, such as Samsung. Smartphones were introduced for the first time on September 2009 and have been spread at an alarming rate. The users now amount to over half the total number of cell phone users in Korea.

Most smartphones have the function of a GPS to use the Local Based Service (LBS) more easily. An LBS is the system of providing various services based on the information

of the location around the user. GPS navigation in cars and as remote devices for hiking was mostly used before; however, smartphones are generally used now due to the internet service related to services like on Four Square(<http://www.foursquare.com>) which also provide LBS. Not only can phones mark the present location on a two-dimensional map but they can also overlap features such as stores, gas stations and destinations. When we turn on a smartphone, it is now normal for it to reflect the surroundings around it.



**Figure 4. The components for providing LBS service on smartphone**

The advantage is that users can be provided with and use GPS services without preparing additional equipment. Also, smartphone use by the elderly is increasing, along with the speeds of both apps and information retrieval.



**Figure 5. The GPS linked smartphone application 'Foursquare'**

## 2. Narrative Sources and Storytelling

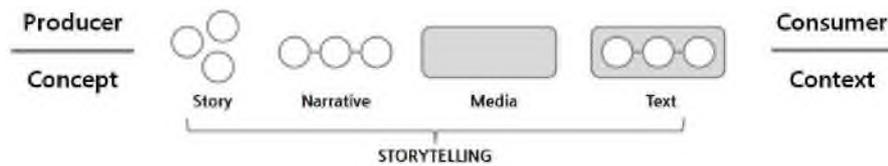
### 2.1. The role of storytelling between contents and consumers

Thanks to the diffusion of the smartphone, apps related to sightseeing, tourism and leisure are been introduced one after another. Especially in the case of completing a long-distance journey, it is very helpful to have an app that maps location using GPS. This is quite different to the days of paper maps and books since the average app provides information on location and a calculation of distance, simply. LBS is even more effective due to the fact that appropriate information can be updated when it connects itself organically.

Storytelling plays an essential role in the process and is composed of two factors: story and telling. A specific story can be conveyed through various mediums, which helps achieve purpose more effectively.

The story in viewpoint of narrative is not a definite story. It means an event in the past that we cannot see now or an imaginary event contained in the speaker's head. If we give a story with basic elements like the main agent and some action and construct it as a continuous story, this is a narrative. To arouse sympathy from the audience, we need to clothe concrete characters, events, backgrounds, and arrive upon the narrative. It is a text

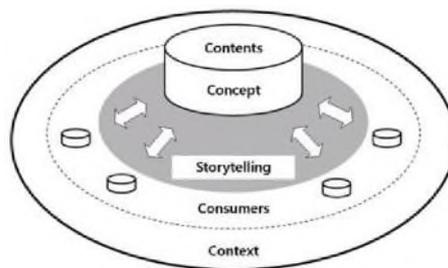
that can take the form of a poem, novel, play or movie. Storytelling means the whole process that organizes a story into a narrative and makes a concrete text through real media.



**Figure 6. The differences between story, narrative, media, text, and storytelling**

Storytelling plays a very important role in the selling and buying of contents and products. The producer makes the products with a specific intention and commercializes them keeping in mind the existence of consumers. Consumers evaluate the products based on not only individual tastes but also the sociocultural context that they belong to and then make a purchasing decision. Storytelling makes the effect of communication high. The process is made by a concept the producer decides and then conveyed to consumers through contents to have a desired effect. Especially, if the story is matched with the context of a consumer, the effect of immersion and sympathy can be maximized. That is, it is recommended to include the operation of storytelling, which rearranges ‘story’ and converts it into ‘narrative’ in accordance with ‘concept’, in the process of contents production.

If we summarize the whole process, it can be organized with the model of ‘Concept - Contents - Storytelling - Consumer - Context’. Eventually, to get the population of the contents, storytelling has to be included.



**Figure 7. 4C1S model of connecting the products (contents) built on producer’s concept to the consumers living in social context**

## 2.2. The technique of storytelling using narrative resources

Most regions on Earth that human beings inhabit contain various stories in their history, folk tales and mythology. There are often regions more famous as tourist spots as they have unique stories. If we can use such unique stories in tourism through cultural contents-storytelling, we may call it ‘narrative resource’ like another resource such as scenery, ecological or historical resource.

A narrative resource itself, however, is hard to use to exert influence on consumers; human beings are not interested in listing simple information. The ‘mirror neurons’ in brains, which are known for causing sympathy, are activated in earnest and cause empathy and immersion when the context is recognizable. For this reason, a narrative resource must be developed into a storytelling operation in order to arouse consumers’





Figure 8. Swiss Hike and Camino de Compostela walking trail application for smartphone

### 3. Analysis

#### 3.1. The Jeju Ollegil application

Narrative resources have, however, appeared on apps linked to Korean walking trails. The Jeju Olle app that the Jeju Olle Corporation has released has been gaining popularity because the stories linked to the routes' topography have been made like a radio program. The music which has the material related to Jeju is in the background and a presenter introduces stories about Jeju. It is organized with relaxed and comfortable music and voices that reflect Jeju culture, which is famed as a natural tourist spot. Tourists who visit Ollegil may therefore listen to the various stories that reflect the regions using this radio contents and can consequently learn more about Jeju. Before this, a Jeju Ollegil app contained information about the location only and so was much less popular with consumers.



Figure 9. Tourism application 'Jeju Olle' on smartphone using audio guide with local narratives and popular songs

#### 3.2. The Bukhansan Dulegil application

The Bukhansan Dulegil app that the Korea Tourism Organization has produced also uses narrative resources actively. As well as the existing information on location, the app also contains information on scenery, biology, history and culture. If we choose one of the 21 sections on the app, a detailed map is shown and when a key point is clicked, an audio guide begins along with related images. The audio guide is similar to ones found in museums; however, the information on individual tourist spots is dramatized like a radio program and includes information on the local ecology, history and legends.

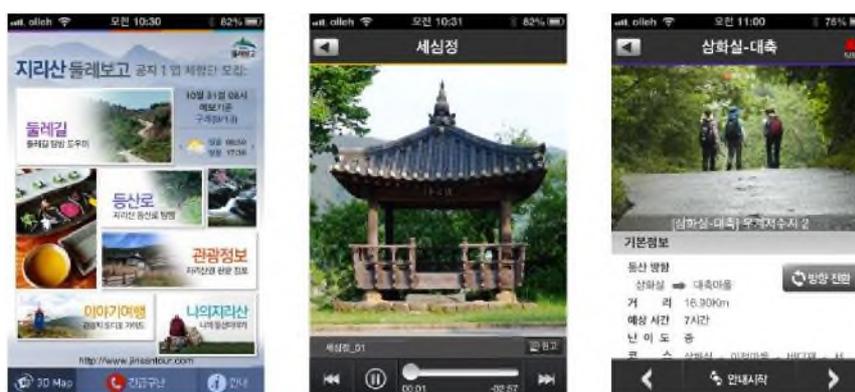


**Figure 10. Tourism application 'Bukhansan Dulegil' on smartphone using GPS and LBS with historical information, ecological resources and local narratives**

### 3.3. The Jirisan Dulegil application

The Korea Tourism Organization develops a Jirisan Dulegil app as part of the 'smart tour information service of the area around Jirisan'. It will be developed with 'smart tour guide contents', which connects the overall delivery of information about local history, culture, scenery and ecology into a bundle. However, it will not only contain information on sights, restaurants and accommodation, but also 10 stories per course and a total of 16 courses. Although it will contain various styles of contents, the bulk of explanations will be made using specialist scriptwriting and characters as used in formats like audio dramas.

It takes more time than we would expect to complete this app because Jirisan extends over different local governments and the organization needs to gain various permissions from each of them. It is also possible that more time is being taken to make this app. The result is that as of 2012, the Jirisan Dulegil app has not been completed far behind its original schedule. At present, 'Jirisan Dule Bogo' app which is released by Jirisan Mt. Tourism Development Association provides storytelling service with audio dramas, nonetheless, they are not closely linked to local narrative resources.



**Figure 11. Tourism application 'Jirisan Dule Bogo' on smartphone using storytelling service with audio dramas**

## 4. Conclusion and Discussion

The demand to explore walking trails in nature has been created by the well-being trend. When combined with the growing popularity of smartphones, it has resulted in the development of various types of apps. If the apps, however, do not contain information of the unique resources that the regions have, such as scenery, biology, history, culture and narratives, then they cannot claim to create a 'smart tour'.

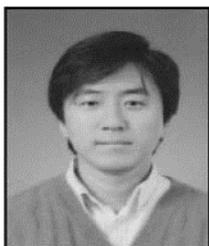
The popularity of these apps can be higher where empathy and immersion is created, which can be done effectively through storytelling, as opposed to simply listing information. Storytelling is the manufacturing of existing local stories into a narrative and can generate consumer satisfaction because of the way the themes are expressed and how the speed of the media operates. Therefore, put simply, if the story is simple and long, it is hard for consumers to be interested and consequently, immersed.

To address this risk, we first need to arrange the key features of the narrative and organize them into a framework. After this, we need to decide on a story that can cause empathy. Subsequently, we need to use a storytelling operation, but one that is broken down into stages that therefore allows consumers to choose the right options for them, in accordance with their tastes.

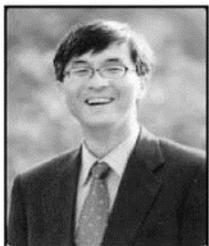
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