

SPACE TAGS

A Digital Guide to the Cultural District of Anping

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Abstract. Cities are filled with rich resources of fantasy and memories about the urban activities. Urban narrative is not only a way of storytelling but also a way to depict the contents of a story about the city. This paper depicts how a digital guide can be implemented in regarding with urban narratives by applying web-based and mobile technologies to navigate a cultural district and recall the experience. In this paper, we are concerned how to provide a digital platform for tourists to get related information in a cultural district during their visiting. A space tag approach is proposed to and system prototype is implemented for demonstration and discussion.

1. Introduction

Anping is a cultural district in Tainan City with numerous historical buildings, cultural heritages and rich urban fabrics that contribute to multiple cultural dimensions of the district. In recent years, several significant urban redevelopments are undergoing in this district. The declaration of National Anping Harbor Historical Park to be an Eco-Museum has constantly attracted people come here to enjoy the culture life.

In this study, we are concerned how to assist tourists in getting the urban narrative information in Anping area by adopting Information Technologies (IT) including web-based and portable hand-held wireless devices. A digital guide of Anping can be used as a digital platform to provide service directories and urban narratives. The Yenping old street, which is the first street in Taiwan, is used as an urban narrative example to demonstrate the historical information service of our vision in Anping area.

2. Urban Narratives and Space Tags

Urban narrative is not only a way of storytelling but also a way to depict the contents of a story about the city. To tell an urban story, there are various ways of different perspectives such as history, geography, culture, economics, people, etc. Each way of urban narrative tells us the multi-aspects of storytellers from different domains. Therefore, a better way to tell or read an urban story should depend on what a user expects at specific situation regarding with time, space and cognition (Chiu, 2005; Crang, 1998).

2.1. URBAN NARRATIVES

The study proposes to assist people in reading urban narratives of Anping by web-based technologies and portable handheld devices. An ideal digital platform for tourists is to get the desired or helpful information during their visiting. New narratives are expected to be invented, a different set of memorable episodes will become the focus of attention, and the new members will be initiated into the new method of storytelling which only participants can aware and tell to achieve new finding of invisible cities (Tsoukas, 2004; Calvino, 1974).

2.2. SPACE TAGS

By literatures surveys, the definitions about Space Tag are listed as below:

- Space tag is a mark with spatial implication as cues or signs (Chiu, 2005).
- Space tag is an interface operated with other media allows data to be tagged to its objects, which is central to development of a 3D GIS (Batty, 2005).
- Space tag is a digital object that has at least the following attributes: ID, data type, effective zone, effective time period, access rights, channel, sounds, colors, etc (Ishida, 2000).
- Space tag is a virtual object that can be accessed only within limited area and limited time period (Tarumi et.al, 1998).

In this paper, a space tag is defined as a physical or virtual object that can be accessed only within limited area for reminding user’s memory. A digital guide in Anping with space tags will enable the storytelling capability. The framework of the digital platform for urban storytelling in this research can be shown as Figure 1. It is designed to represent specific urban narrative regarding with a specific place in Anping area. The landmarks and historical buildings are adopted as visual cues to provide space tags of Anping. These space tags are well designed and evaluated to be able to convey the urban narratives to the tourists of different domains with multiple layers of urban information. With a mobile device, a user has choices to access a physical tag at specific place. The user can also click a virtual tag showing on the interface to access urban narratives with multimedia presentation capabilities (Peng, 2003).

From tourists’ viewpoints, they can interact with the space tags to get the most desired information. They can even communicate with other visitors to share online video or audio information while visiting different historical places in Anping via mobile devices.

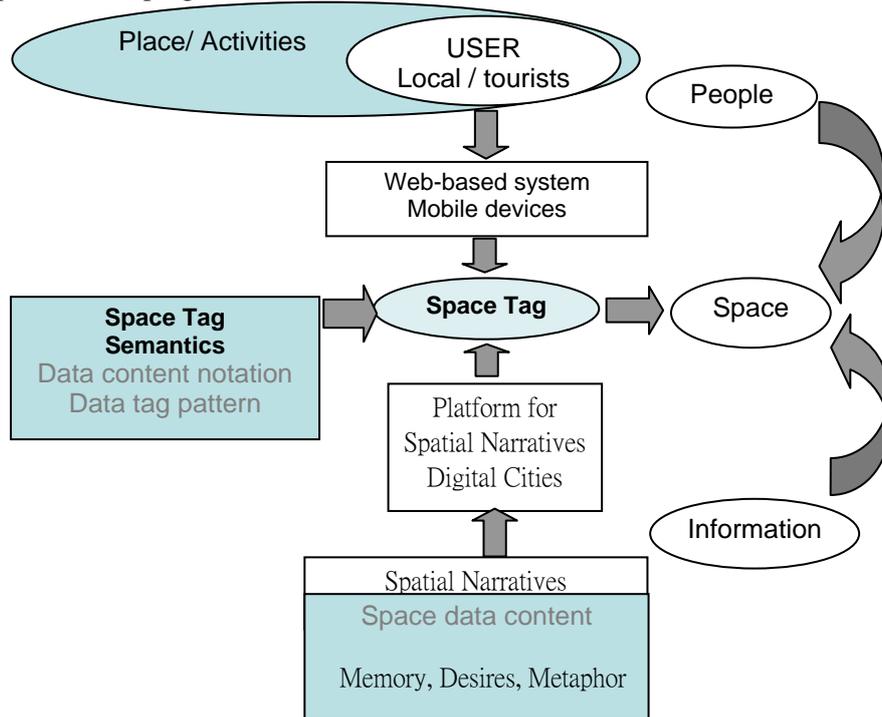


Figure 1. The notion of the digital platform by space tags for urban storytelling

3. Digital Platform for Urban Narratives

The complementary projects which are described in this paper aim to increase the understanding of city storytelling in visual representation. ‘What is interesting and what is an attractive storytelling’ is filtered through certain powerful narratives, a more or less different pattern of urban interaction would be expected to emerge, and new stories would inevitably be created (Tsoukas, 2004). And those stories are like being written on a piece of carbon paper (Crang, 1998). They will be re-written in the system time after time to create different layers of stories from multiple narrators by their views of professional knowledge.

3.1. CASE STUDIES

This study has first surveyed selective cases that have adopting web-based spatial systems from literatures, including London, Liverpool, Sheffield, and Kyoto. The major characteristics of these web-based platforms are spatial locator, database, and themes sharing. We had evaluated 4 possible platforms, such as GOOGLE EARTH, 3D-GIS, Web with JAVA, and Web with Macromedia Flash, and summarized the main functions as follows:

1. Spatial Information and Maps: The system can display maps or a satellite image over the map with space tags, and provides an angle of vision to zoom the map, and the user can post information as tags on the map. For example, GOOGLE EARTH, the maps and satellite images are delivered by Google through the Internet. The posted images and texts are managed by XML on a web server. Data transaction is executed by client web server of Google.
2. Inputs and interfaces: The information contents include attributions such as comments, image file, comment title, category, registrant, groups, time, latitude, longitude, and scales.
3. Tags and Marks: When a tag is clicked, it shows information of the location on the map, and also provides a full-text search of comments by typing any keyword.
4. Outputs: The posted information is retrieved and displayed as a hint on the web browser in accordance with the range, scale, category, and groups.

The proposed system prototype is shown in Figure 2. It consists of multiple views, including: visual searching platform with tags of hints, web browser, subjects of space tags, edited notes of space tags with location information and personal hints, and search bar.



Figure 2. Snapshots of Anping's Webpage

3.2. A NARRATIVE PLATFORM FOR DIGITAL GUIDE

The idea of space tag is to provide a platform for accessing historical information of Anping with mobile devices to the urban information portal. Space tag is an electronic tour guide to provide a variety of information for tourists by mobile devices (Brown, 2005). To establish a wireless information-accessing environment, the digital guide uses GPS technology with electrical label map navigation to locate the user's position and provide immediate interaction with the multimedia information center. The mobile terminal, wireless communication, video/music information bank, and location aware service provide a set of intermediary software to support the environment.

Ideally, people can use their cellular phones and other personal digital assistant to add additional layers to the interface to narrate specific theme. The user simply clicks on or posts a space tag, then, showing an electrical board to key in note in its narrative database. The narrative database collects multiple types of storytelling, and it would be an invisible city with different theme space tags represented it.

In addition, it allows users to see the simplify information content of each historical spots and the routes, the mobile devices, district-navigator, like the system of web browser; facilitate direct access to historical spots data. They can even communicate with companions to share on-line video or audio information while visiting different historical sites in Anping. Besides the mobile devices carried by tourists, all these navigation functions rely on the information technologies provided at server side.

4. Demonstration of Urban Narrative in Anping

In the Anping project, we use web-based as the basic testing platform, then, use mobile devices for examining the mobility. The goal is to establish an information portal by web-based GIS.

4.1. IMPLEMENTATION

To illustrate the information-accessing environment brought by mobile devices, the research uses the old Yenping Street, located in Anping, as an example to demonstrate how tourists interact with the historical information in Figure 3. To locate the position of tourists, the system uses Access Point to let tourists understand their locations.

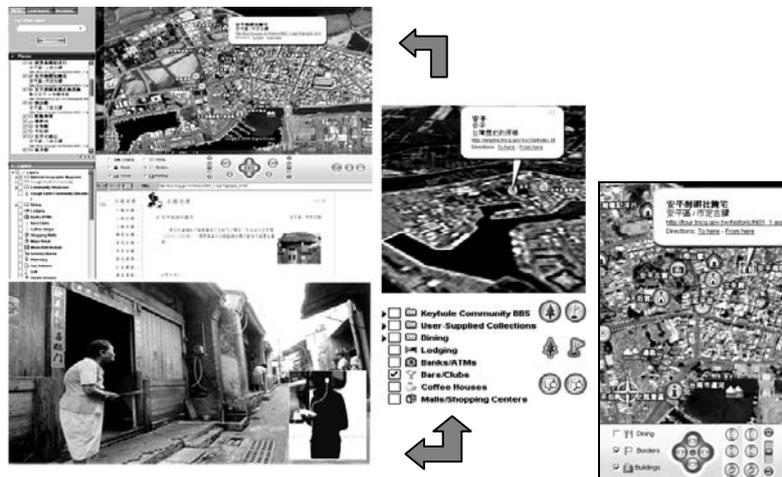


Figure 3. System functions and interface

To access the historical information, it provides an angle of vision to represent the low satellite image over the map with space tags, which the user can freely navigate by clicking and dragging without the limitation of space. Of course, tourists can obtain information immediately from the system about the visiting spots or suggested tour route.

This work aims to exploit existing handheld computing technology on allowing users to access the historical spots data on locations by a geographical map interface.

4.2. PRELIMINARY EVALUATION

Despite these continuing developments, currently our prototype of portable handheld devices does not allow remote wireless access to the platform of

urban narratives. Instead, to deal with mini operation windows for portable handheld devices to connect the web browser of information portal, the user must take notebook in wireless environment to explore the web browser in district. Nevertheless, the project is regarded as a prototype that provides the public with an opportunity to narrate a space in a new way.

5. Discussion

In this on-going project, the concept of urban narrative is aware and telling the story of a cultural district. Furthermore, in the aspects of cognitive map, urban narratives depict a metaphorical geography from a mental memory. It provides multiple information sources to satisfy numerous desires for realizing invisible city.

Functions: It seems to suggest that it merely adds electronic devices to promote navigation on how visitors negotiate this space.

Interfaces: As space tags, it is providing multiple information sources metaphorically to numerous situations of surrounding.

User feedbacks: To compare these two situations from different user's feedbacks, how to define the meanings of space tags is a particular type of narrative. Indeed, narrative modes are in a variety of dimensions, which we have summarized in Figure 1. When a physical space tags tried to demonstrate the scenarios of Anping are not only memory or metaphor, and that is what context wants to be represent.

In conclusion, this study provides a platform for innovation. Without this perspective, it is difficult to appreciate the value of public space, and there will be less contribution to its development in any meaningful way. Neither the architecture nor the directional signage provides sufficient feedback for efficient navigation.

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