TAGGING YOUR BODY VIRTUALLY

Represent a place making process with social network

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Abstract. This research focuses on the virtual environment of place making. In this paper we would like to emphasize that the place making should be stressed collective views in order to obtain the design application of possibilities. However, in past researches there has been no study that tried to collect the collective views by digital ways. Accordingly, this paper proposes a response thought the *Spatial Intention*. It could be used to represent the human of body experience. The "moving" and "standing" are appropriate to two main considerations. Both of these could be connected to the action of "focus" and "choice." these leads to a sequential relationship of place production. The positive significance of the spatial intention lies in the convertibility of physical experience could be implied with a specific understanding. It also could be used to mold the place of knowledge structure. Thereby in order to verify the reliability of the above, we made a social network of virtual environment and used the rapid prototyping method to develop a prototype system. Implementing on the Chinese garden of the actual case, we found that the tag could concentrate as an entire sense in somewhere of place. These tags also could be shared remotely through the social network. Different tags in the sharing mechanism could collage out a place of collective views. This perspective would be used to assist designers to understand the sense of place. It also would be applied to find out the environmental design of possibilities in the future studies.

1. Introduction

1.1. BODY EXPERIENCE AS A TAG

The body experience refers to the place details of the memory. This experience usually is the parts and fragments. People could arrange the memory and feel places of the local features. In this paper the motivation is focused on this. We believe that the body experience can be marked as the tag. Through digital media assistance of, a number of tags could be integrated into a credible collective viewpoint.

The place making needs to establish this kind of collective viewpoint. It also could be used to express the place characteristics. However, the collective viewpoint needs a indicator to used to specify the entities or meanings. The indicator need to rely on the digital media to produce its role.

In this paper, the concept *Tag* comes from social network that it is a required indicator. Social network is a kind of virtual community. Users may through the Internet to do interpersonal exchanges and communication. We will elaborate on this in the latter part of the article.

1.2. PROBLEMS

As far as the architecture domain is concerned, it is quite likely that social network is sufficient to assist designers in the interaction of design communication. However, there seems to be no established theory to explain how to use tags to represent the place making. Its methodology and process are unclear.Moreover, social network belongs to virtual environment. Its interactive characteristics or the design of impact also needs more research.

Therefore, the problem in this paper is focused on the virtualization issues of body experience. How do social network could be used to assist people construct their body experience? In a place making process the tag on behalf of what is the significance? Tag and the physical experience of the relationship what is between?

1.3. OBJECTIVES

To address the above problems, this paper presents a view the spatial intention. This is based on the body experience described as the spindle. It explains how the body's movement and visual focus could be used to identify the place description. This view is a kind of the place making in virtual environment.

On the proposed idea within place making of virtual environment, this study present a conceptual idea, the spatial intention, for exploring the

virtualization of body experience and attempts to construct a digital platform to verify the above idea in social network.

1.4. METHOD

Rapid prototyping method is used to develop this platform. This method is based on evolutionary development for the application of strategy. Rapid prototyping is a limited period of time, rapid economic way to develop prototype systems. It also can clarify the certification is not clear or the system requirements.

In the following sections, this paper will discuss the formation of place making within the two points of view; the formalized process of spatial intention; the issues about the social network and tagging, rapid prototype established by the virtual community platform, and the operation of this platform to use to explore place making.

2. Place Making

2.1. MICROSCOPIC REPRESENTATION

In the conventional perspective, the place making is a place construction of the actual operation. The other hand, it shows that as a socialization of collective action. However, this perspective more deeply is focused on two approaches, one is that the place making is stressed the establishments bring the overall impact; besides this, what we need more that how to experience the places of details. In this paper, the former is called as the macroscopic representation, while the latter is known as the microscopic representation.

On a representing process, it will be helpful to distinguish macroscopic and microscopic representation. Nevertheless, here we would like to focus attention on the latter one. In this study, microscopic representation is regarded as a description method, people used to interpret their own place experience. This is an inside-out process. While people enter a place they observe some interesting thing within their own experience could be described the places details.

Through microscopic representation, human could describe details that these belong to the places understanding and experience, not limited to the places own characteristics and qualities. In other words, when people complete the microscopic representation of description, people and places could be integrated as one. Thus the place making is completed.

2.2. PLACE MAKING IN VIRTUAL COMMUNITY

Today, the rapid development of digital technology makes two viewpoints have a direct correlation and integration, of which the most important are that to virtual communities for the virtual environment. Al-Kodmany (2001) conducted a process of university-community collaborative planning in Chicago. It is used of web-based technologies as the core and allows community residents and planners participate in the community which is visual design (Al-Kodmany, 1999). Through virtual communities, community residents can participate in the actual planning and design work and can directly to the community to make recommendations for improving the environment.

Virtual community would not only be promoted the real environment of place making, but also would make the creation of virtual life. A specific example is the famous website *the Second life* (http://secondlife.com/). People involved in the virtual community could treat it as a part of life. Gradually, the virtual community has become a place, a virtual place. In which people can live, just as real as the environment. In addition, the extension of the real environment into virtual environment, virtual community will be able to extend the interpersonal communication scope. This is a strengthening and expansion of the socialization.

However, whether virtual or physical environment, place making stands in need of clear indicators. These indicators could be used to express their existence and identities. In real environment a indicator may be a building, while in virtual environment it may be just a symbol. Indicators could be used to indicative significance associated with abstract meaning and concrete object and able to be formed the place making of interpretation. On the microscopic description, people will use indicators to express the place characteristics. This feature will refer to the details of place.

From the above viewpoint, one may say that people have the opportunity through indicators to transform their body experience. In the following contents, we will discuss in depth people how to represent their own body experience in a place making process.

3. Spatial Intention

3.1. WHAT IS SPATIAL INTENTION

Spatial Intention is used to represent by a particular person the spatial experience. In physical environment the ambience awareness would be triggered in some spatial depicts with spatial intention. The meaning *intention* is implied into a sequential relation when an observer moves and

gazes something in a place. This sequential relation can be described into three ways of spatial representation: one is the action of human body including "body movement" and "direction decision"; one is converting the visual information into spatial memories through the behavior of gaze, including "focus sight" and "glance snapshot"; the other one is that we consider the limitation of topology at that physical place called "physical identity" and "location identity". In summary, we regard spatial intention as the action tagging and consider that it is a suitable framework of representation for place making.

Why spatial intention could be marked as the tag? This is because spatial intention is a kind of explicit representation. In perception level people want to consider their "moving" or "standing". A place is regarded as a particular location whereas people want to stay there. When people stay at somewhere, they would take their sight to focus on something or others. Then they want to select next step to move. This is a where to go of choice. We believe that the sight focus is integrated with choices could be resulted in spatial intention.

This forming process of the body experience is as a cycle mode. As figure 1 shows, this experience began of the initial mode is the "standing" and would be terminated at the "moving." Considering "standing" Instantly, people began to search for target, and to choose the path (route selection). Determine its direction (direction decision) until the beginning of the next round of "moving".
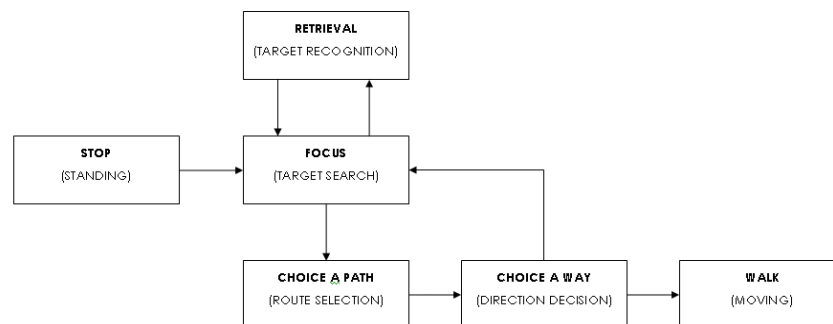

Figure 1. The forming process of body experience.

3.2. VISUAL DESCRIPTION WITH SPATIAL INTENTION

How to achieve spatial intention of tagging? On this study, the visual form could be used to express the concept of designers. For a designer, the visual form has to time for meaningful results. It is not just a form of memory fragments and organizations. Through visualization, designers can enhance visual representation as a form of visual communication. For example,

sketches, diagrams, 2D design drawings, 3D model. As design media, visual communication is a very important component factor. It means that the idea of how to process to design for the graphic and textual. Therefore, designers in the process of designing the visual effect can be seen as a place description.

In the visual form of association relationship, figure-ground diagram has to be the place regard as the association relation. In the visual graphics, it also as was the theme all the performance indicators is commonly known as the figure; Instead, The theme for the city that called the ground. When people are watching the figure, the ground is used to distinguish between objects and the space around the state. Figure-ground diagram can be used to assist in the design and analysis could be developed the changes of spatial context.

Therefore, figure-ground space is the city of relation between filled and vacant. Figure is filled space; ground refers to the vacant space. And association relation refers to the building orientation and its identities. Through a combination of the two, this place can have different forms.

3.3. A PROCESS IN REPRESENTING THE SPATIAL INTENTION

Mentioned earlier, the spatial intention relates to the body experience. Therefore, to combine with microscopic representation and visual description these two viewpoints, the place making represents in the spatial intention could take account of the depiction to the process.

For applied spatial intention with digital platform, we must first consider how to record information. And then explore how to express recorded information.

Therefore, ideal processing steps are: (1) to establish the intent of the space classification catalog; (2) to consider the sequence space of three space reappearance contents, including the physical movement information, the fragmental of visual information, and indicated significance of buildings; (3) to decide these relationships contained in the topological sense of space constraints.

4. Social Network Platform

4.1. WHAT IS SOCIAL NETWORK

In recent years, social network is being able to a new form of virtual community. In simple terms, social network is a public service through the Internet to encourage users to directly provide website content (Davis, 2005; Downes, 2005). Furthermore, social network is involved to supply and

demand of information structure by change, and is affected to the essence of virtual communities (O'Reilly, 2005). The information on which communication and interaction the most influence is the tag using.

Social network is discussed from O'Reilly (2005) the Web2.0 Perspectives. In short, Web2.0 is an attitude, not a technique. It is a kind of user participation through an opening application and public service on internet environment (Davis, 2005; Downes, 2005). For instance, Flickr, Google Maps, Del.icio.us, Bloglines, Socialtext and so on. Many online services of websites follow this concept.

A good deal of programming applications interface of internet technologies are used to as the core of the socialized software such as Blog，RSS，Wiki etc.. Participatory web, active information providing, opening, public sharing, decentralization of socialization, these are mostly debated socialization as the main spirit of. Through the working cooperation of knowledge exchange everyone who would create their own articles and productions, and obtain others to share the social identification.

Social network is a novel concept which based on user participation. Here we generalized the five features of digitalization with viewpoint in the place making process:

1. **Individual-as-public**: the designer as the one is an originator for all of public issues on designing a place. The place could be an information transmitter between individual and public.
2. **Ubiquitous access**: the place could be access everywhere no matter how the distance so far away.
3. **Active entries**: the information provider on places would share their knowledge and become more interchangeable. The shared knowledge is active. The provider could be a professional or creator who would make a vivid place.
4. **Hierarchical matters**: similar with the peer-to-peer network, each node of social context could be connected within a hierarchical level of digitalization. The matters would be occurred on the parallel framework.
5. **Perceptive individuality**: based on the first term of our viewpoints, the individual of particularity could be manifested by the internet technique with the concept of socialization.

4.2. TAG CONTENT WITH SPATIAL INTENTION

Next, to consider is how spatial intention to applied into the social network. On this point, tag content as a key project. However, due to space limitations, the paper only made a conceptual framework to explain the contents of tag, and will not discuss too many details.

Tag is a conceptual form of marking, usually expressed in the matter of keywords. the tag is usually used to identify what (or who) it is about; what it is; who owns It; refining categories; qualities or characteristics; self reference; and finally, task organizing(Golder and Huberman, 2006).

The tag involves using to the "folksonomy". The word comes from "folk" and "Taxonomy" (Smith, 2004; David, 2004; Guy and Tonkin, 2006). The folksonomy is one type of distributed classification system with categories. Users can freely labeled a tag to the network resources and create their own classification structure.

Tagging information on the type contains non-visual keyword and visual image content, shown as Table 1. On the designers, spatial intention of the "conceptual level" is defined on the relevant content in non-visual keywords to link the basic concept, ideas, conditions, or strategies.

Spatial intention of the "connecting layer" discussion is described as interactive association. In the visual process, the "connecting level" is rough information. These tags will be sketches, drafts, the outline, diagram and graph.

Finally, the spatial intention are talking about "conveyable level" could be received accurate visual description. Design drawings, designed photos, design models, Design animation are such tags.

TABLE 1. Tag content with spatial intention.

	Conceptual Level	Connecting Level	Conveyable Level
DESIGNER	Thinking of the content	Interactive content of the association	Expression of visual representation
DATA	Non-visual keyword	The rough visual information	Visual accurate information
TAGS	concepts ideas conditions strategies	sketches drafts the outline diagrams and graphs	design drawings designed photos design model simulated animation

4.3. SYSTEM IMPLEMENTATION

4.3.1. The Goal
This system is a virtual community of sharing co-existed platform. Therefore, the systems mainly for the Internet environment, architecture designers are the main target users. This platform with the service includes maps, pictures and tagging, architecture designers could share their of body experience. Through different designers to place the description, it could reach that place of the collective views, and obtain microscopic description of objectivity.

To resolve the personal information of the design flaws and too subjective shortcomings, this system is based on architecture designers of visual capability to establish a place memory and experience sharing co-

existed platform. The system has records and sharing model the idea is to try to collage different users of places impression. The system has three parts:

1.   **One-on-one**: one user to one place. Users can input their place of a personal memory and experience.
2.   **Many-for-one**: multiuser to one place. Different subjective views would be concentrated in an objective viewpoint in which represented the place content.
3.   **One-for-many**: one user to different places. Users can import a certain viewpoint in order to find out the similar views of the other places.

4.3.2. Function Design

This platform is based on the "Mashup" approach. It uses Application Programming Interface (API) to different functions assembled together. To develop an internet application the "Mashup" method could be easily completed program and also could quickly correct mistakes. Designers can reduce the burden. Therefore, the main program development environment is dynamic PHP website with AJAX technology. MySQL technique is responsible for the back-end database system.

On the mashup design of system platform the first step is applied Google Maps API as the map engine. It is used the aerial image to tag the position and orientation. Secondly, Flickr API is applied as visual data of collection and search. Flickr itself has a very good tagging system hence the initial of our design considerations mashuped part of this tagging system to reduce the design complexities.

Visual information refers to the places needed to describe the events and objects. Event description could be known as context processing. It refers to a time in history under the premises of non-visual description of the factors. Object description called content processing. It could used to convey the visual factor to the implementation of image processing. Figure 2 shows as these two processes.

Visual data of the application of information is to deal with figure-ground diagram. We used the algorithm of image processing Kohonen Self-organizing Map (KSM) (Kohonen, 2001) to extract the features of the figure - ground maps. The definition on the Kohonen Network is an ordered mapping. It is a kind of projection from a given set of data items onto a regular. It also is usually used on a two-dimensional grid.

Our approach is to first obtain the location of the tagging satellite maps, threshold value used to filter images. Then, give the transformed image as the neural network input layer, the use of KSM algorithm output image coding.
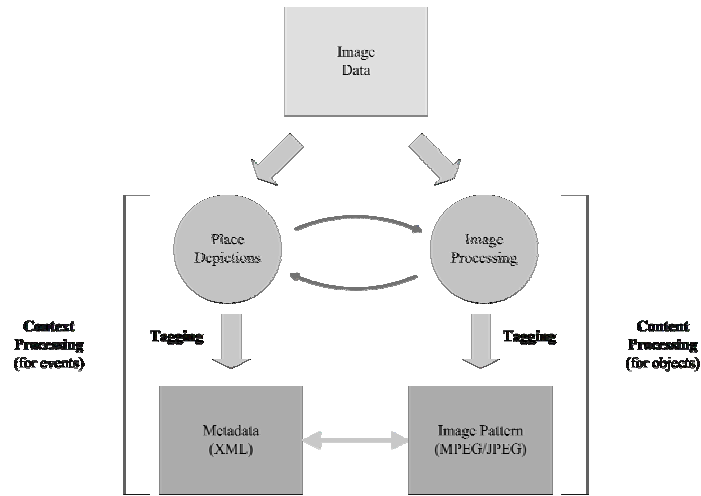
Figure 2. The three conditions.

Functionally, the system has two modes as main: a mode for tagging and the other to query mode. Tagging mode is to allow the user to select on the map of a certain place, and then upload visual data for tagging. Users could designate the direction and location with visual data, and then enter the keyword as tags to finalize tagging. We can represent Figure 3 in a diagram as follows.

Figure 3. The tagging mode.

Query mode is divided into two kinds: one is based on input-based tag, another is input image. Users using query mode to find two identical or similar places. These sites are related to each other. We also can represent Figure 4 in a diagram as follows.
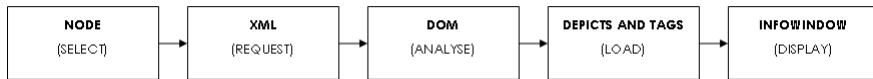

Figure 4. The query mode.

4.3.3. Metadata

Spatial intention of the data structure is based on visual types. These visual descriptions of the tag labeled and stored in the multimedia database. When implement systems design, spatial intention of the various levels is hidden variables as estimation value of query task. Estimation of this value in the

system is independent of the input-output data. The advantage of this is the spatial intention as a feature rather than results.

The tagging of information structure is as shown in Table 2. This data structure contains the geographical coordinates value; the name of the place; Image files belonging to the visual information; the keyword is used for the tag; the tagger. It used as visual access to the information provided on the label specifications.

TABLE 2. The metadata.

NODE	ATTRIBUTES	DESCRIPTION	TYPE	SAMPLE
<Marker>				
	Lat	Latitude	Float	24.8042806989
	Lng	Longitude	Float	120.97073257
	Place	Place name	Text	JhaShiue House
	Depicts	Visual data	Image	Ex.jpg
	Direction	Direction	Icon	West
	Tags	Visual description	Text	Gate
	User	Tagger name	Text	mivo
</Marker>				

Tag is based on the XML file as metadata. The metadata tag to be treated as a record format. Its geographic information from Google maps could be provided by the geographic coordinates. This position coordinates of places. Access information on the mode of Ajax technology is for non-synchronous link. Its advantages can be stored immediately with the revision. Figure 5 shows that a tagging standard XML document model.

```xml
<?xml version="1.0" encoding="UTF-8" ?>
- <markers>
    <marker date="Sat Jun 2 21:24:36 UTC 0800 2007" depicts="ex.jpg" direction="East" encode="" lat="25.0107369098"
      lng="121.454812288" place="JhaShiue House" recordno="1" tags="garden" user="mivo" />
    <marker date="Sat Jun 2 21:24:36 UTC 0800 2007" depicts="HH.jpg" direction="West" encode="" lat="24.8042806989"
      lng="120.97073257" place="The Heart Of Hsinchu" recordno="2" tags="gate" user="mivo" />
  </markers>
```

Figure 5. The XML documentation.

As for the judgment of semantic tag, and is also a serious problem. To enable the system automatically judgment similar to the word meaning tag, we adopt the definite logic programs, i.e. Horn Logics. In this part of the details, please see in Antoniou and Harmelen (2004) of the fifth chapter.

The semantic network used to judgment the tag is different from the simple use of the weights mechanism. For example, to serve as the definition of base predicates facts:

$$Place(X) \qquad X \text{ is a place} \qquad (1)$$

$$Tag(X, Y) \qquad Y \text{ is a tag of } X \qquad (2)$$

$$Conceptual(X, Y) \qquad Y \text{ is the Place } X \text{ of Conceptual Level} \qquad (3)$$

Then set the basic rule. For example:

$$\text{Tag}(a, b), \text{Conceptual}(a, b) \rightarrow \text{Place}(a) \tag{4}$$

Semantic judgment is a very complicated issue. Here we only completed part of the word similar judgment, and also failed to complete knowledge integration.

4.3.4. Evaluation and Testing

The prototype demonstration is rapid prototyping of kernel steps. It has three major objectives: simple processes for user operation; simplified the steps to establish the tag; clearly demonstrates description information. The guided by the following processes operating the prototype demonstration:

1. At the beginning of verification operations, system designers explain the entire certification process to the tester, and report on the current progress of the system design.
2. System designers explain the current system has been completed and has not yet completed all the functions. And then they report also designed to function with input and output results.
3. System designers demonstrate the mode of operation.
4. System designers invite the tester to use the system.
5. The tester feedbacks shortcomings to the system designers, and put forward feasible opinions.

As for the demonstration of choice, the visual data is to observe and to percept within a place. Users of this platform make the visual description, and the description could be concentrated upon a tag. Users will be given a place of visual data to integrate, upload them and set keywords as a tag.

In-depth interviews were made feedback data sources. System tester listened to the simple operation of the system explained and to operate the system for a period of time. Its assessment feedback will be effective.

In this study a total of four of the self-assessment cycle and one open-cycle assessment. Prototype system through system testing after assessment stopped development phase process, and an end to the development cycle. Online demo of the platform may refer to http://loci.mivochen.com/?page_id=17.

4.3.5. Implementation: The Chinese Garden

In prototype system after the completion, one case is completed a Chinese garden of place experiment. A vernacular professional background designer as a subject was conducted this experiment.

We made a request to her walked in the Chinese garden by each place, and encouraged her use of familiar with methods to record the observation. Nevertheless, the subject was still using a digital camera to record those including indoor and outdoor things. Other forms relatively less, the reasons may be taking pictures than other to the media more easily. When the record

finished, we asked her upload a number of visual data via the tagging system and then labeled tags.

A total of the entire record of the process spends about 190 minutes. The subject was a total of the Chinese garden stayed within 24 places, and took 97 place images. After that, she selected the 18 photographs uploads and implemented markings on the digital platform. In the final stages of experiment, we interviewed the subject was some related issues. The result is shown in the figure 6.

After the experiment, we open to the five subjects for online social network experiment. These subjects were some had visited the garden, some no. We invited them to the previous experiment have been tagging to endorsement, i.e. to label more tags. Similarly, in the week after we interviewed five online subjects respectively.

The experimental results are satisfactory. However, there are still some problems have occurred. For example, to compare the shooting location with tags of marking location, the results showed that when the subject was conducting tagging, she did not be easy to correct positioning of the observation position because of using map of weak capacity. Tagging the position and direction could cause the errors. Online subjects also affected.

Figure 6. The results of implementation.

5. Discussion

Tag in microscopic description on behalf of what is the significance? A microscopic description is used to interpret people's place experience. The study emphasizes the use of tag to practice the microscopic description. The tag is not just the details of structures, but also representatives of the people's feelings. The implemental case could be confirmed that microscopic description can clearly record a visual focus can also record personal feeling and experience. Therefore, the tagging of significance is the two sides of the same coin.

5.1. ON THE SPATIAL INTENTION

We regard tags as a spatial intention. Physical experience of the people expressed in the center's activities. For us, the "moving" and "standing" could be connected to the action of "focus" and of the "choice." Early theories with the difference is that we emphasize is the experience in place inside, rather than place outside.

The place experience will be affected spatial intention. It is necessary that to consider the transformation principle while the spatial intention could be converted to the tag. In summary, when converted, it could be guided by the following three conditions:

1. **Event**: Event refers to the place function of the operation under imminent or has occurred in the activities. Spatial intention of the description usually only one event exists. Within a described process it is unable meanwhile to describe numerous events.

2. **Object:** Object is all place entities of constitute elements. A description of spatial intention contains many different items. These objects belong to the architectural elements of one of them.

3. **Boundary**: The innate ability to think limited, the individual experiences described are mostly fragments and limited. The "threshold" refers to the end with the initial description of a process. By the time this impact of process arising from different priorities; Also because of changes in the description of contents, this process will amend its influence itself.

Within this total, the event can sign with the object of specific tagging, and the establishment of boundary depends on the tagging process to determine priorities relations.

5.2. TAGGING WITH YOUR BODY

People how to use the social network to build their places of microscopic description? From the Chinese garden cases confirm that, social network can be used to explore the establishment of a collective perspective. Microscopic description of positive significance is to ensure that the overall consistence of macroscopic description. Therefore, the establishment of collective view regarded as a very important affecting factor.

This is an interesting topic. Early no network, the designers must sit together to share each other's views on the place. Now with the Internet, a designer can not only share the views of places, but also to conduct real design. Although the study did not discuss the substance of the design model, but through sharing of views and the collective view, they can place more

complete description. This has made the new styles of place making has been established.

Finally, we talked about body experience, Tag, and the "place making" within the relationship between the three. The physical experience is an abstract concept, usually using verbal language to explain. As mentioned earlier, the tag is a marker of things with the contents of the view.

In this study, the tag is an expression of the media, to convey body experience of abstract concept. The other hand, the "place making" is the essence of both the material and abstract sense, and can be extended to two levels of experience. Therefore, the tag used to transfer body experience, can be linked to the place making extends beyond the scope.

We provide an idea within the place making on the virtual environment: the establishment of a place not only come from designers, planners, or inhabitants, but also come from the others. Through the participation in social networks these people could share their feeling and could reinforce their own memories. This entire sequence could gather in a tagging process.

6. Conclusion

This paper provides a place of the experience of two perspectives, macroscopic and microscopic representation. Of this paper, the place making represented a collective view. Such collective view is built on a microscopic description and corresponding to the macro description.

The study of the initial thinking was spatial intention. spatial intention is used to convey the human body experience. Positive significance lies in the fact that physical experience could be transformed into concrete by the people understand information and formed the knowledge structure. In the design, spatial intention will help designers understand and feel the place especially of specific things.

Therefore, the collective view wants to impose through a number of different techniques to help find. In this paper provided by the virtual community called the social network. The significance with this paper is to consider that the place making of virtual environment could be represented as the tagging process. After to navigate a place people could share their experience as the tags on social network platform, while the designer who wants to know an integral impression of somewhere can be triggered through these tags and grasp the useful information.

Establishment of the system is based on records and sharing models in the community labels. The system can be used to back up an impression of the specific places and places memory. This is because the place memory is the impression and the fragment. These fragments are not complete and are only one part of the whole. Through integration with the organization, a

place of the different fragments of the impression it cobbled together. This action could make a place to the establishment of credible appearance.

Nevertheless, the present study only the visual considerations described to places. Meanwhile, in the form of tags only confined to the concept stage, it is not extended to the entire design process. Next, although the space initial intent of possibility, but has not yet extended to the study of memory-related issues. These restrictions are awaiting future research.

Acknowledgements

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