

TECHNIQUES FOR A PLANNING WORKSHOP USING A PLACE INFORMATION SYSTEM

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Abstract. Planning workshops are known to provide important opportunities for citizen's participation in environmental planning. The digital camera is a convenient tool for such a workshops although participants still face difficulties in smooth sharing of information amongst themselves. The authors developed a prototype system for a planning workshop that applies the web-GIS technique, and devised techniques for the system-applied planning workshop through a case study. This paper discusses, first, an assumed procedure for place studies at a planning workshop; second, the functional features of the developed system; third, arrangements for the environment of the workshop; fourth, an experiment of the system use with an urban design workshop in which 91 students participated, forming 16 teams; and finally, assessment of the operational ability of the prototype and necessary refinements for in the next version.

1. Background and Objective

The workshop has been accepted as an important opportunity for citizens' participation in planning in some areas, starting with Europe and the United States in the 1960s. Many specialists, emphasizing the importance of citizens' active roles in those processes, have tested various techniques through case studies (Davidoff, 1965; Halprin, 1975; Sanoff, 1979).

A planning workshop generally requires participants to observe and record the

features of a study area using various tools, such as a pen and sketchbook. Above all, digital cameras and videos have become quite useful tools for recording place features because of their capability to visually record data observed at places, and because they are easy to use and do not require special training or special presentation abilities such as those required in manual sketching.

However, participants are still facing difficulties in smooth sharing of information. Cheng (2001) discussed how, with the increase in volume of collected data, one of the most difficult tasks to be tackled is how to handle a large amount of visual data about places. Participants not only require time to summarize collected bulky data for presentation to others, but are also unable to share that data with others at a later stage of work, even though the data contain quite valuable sources of ideas.

Studies on successful techniques of design collaboration that introduce a web as a centre for design communication and information sharing (Wojtowicz, 1995; Kolarevic, 1998; Chiu, 1998; Hirschberg, 1999; Maher et al., 1999; Morozumi, 2001) suggest that introduction of a web-based system could solve the problem described. These studies introduced the idea of a digital pin-up board, in which designers would up-load various types of design information to different pages of a specially designed web. They also suggested that displaying an image of the web pages on a large screen with a PC projector helps participants' understanding.

Assuming the use of the digital camera as a study tool, the authors developed a prototype system for a planning workshop that applied the web-GIS technique, and devised various techniques for conducting a system- applied planning workshop through a case study.

This paper discusses, first, an assumed procedure for place studies at a planning workshop; second, the functional features of the developed system; third, arrangements for the environment of the workshop; fourth, an experiment in system use with an urban design workshop in which 91 students participated, forming 16 teams; and finally assessment of the operational ability of the prototype and necessary refinements for the next version.

2. Procedural Model of Studying Places in a Planning Workshop

2.1. ON SITE PICTURE TAKING

When visiting a site participants take pictures of observed objects and incidents, or even manual sketches drawn at a site, with a digital camera.

2.2. PICTURE-DATA TRANSFER TO PC AT THE WORKSHOP SITE

After returning to the workshop site, participants transfer picture data from the digital camera to a PC at the workshop site.

2.3. PRODUCTION OF DIGITAL REPORT

After browsing the pictures on a PC, the participants produce a jpeg formatted digital report, compiling the selected pictures with graphic tools.

2.4. REPORT UPLOAD

The participants upload the digital report to the system through the Internet and write comments or explanations. They also attach a link for each report to the map image on a web so that the report can be retrieved on the map.

2.5. INDIVIDUAL REVIEW

Using an Internet browser on a PC, the participants review the location and distribution of the up-loaded reports, retrieve useful reports referring to the map or comments as a key, or add comments to those reports.

2.6. WORKSHOP PRESENTATION, DISCUSSION AND EVALUATION

The participants review and discuss reports on the web, viewing projected images on a screen. In some cases, the participants vote to select the best report and present a prize for it in order to provide motivation.

2.7. DATA DOWNLOAD

The participants can download some of the digital reports for design studies at a later stage.

3. Functional Future of the Prototype System

The authors developed a prototype system for a planning workshop that introduced place studies. It is written with VB-Script and is a special web that works in an ASP environment. Microsoft Access is used to administer a database. It consists of two major units that are linked to each other: (a) *Mapping Unit* and (b) *Image Data Sharing Unit*. They can be observed with any popular Internet browser as shown in Figure 1.

Figure 2 illustrates the tools and infrastructures necessary for the system-applied workshop. Normally participants are asked to bring their own digital camera and a notebook PC to the workshop site.



Figure 1. Screen Shot of Mapping Unit (Left), Image Sharing Unit (Right).

4. Case Study: Urban Design Workshop: Kumamoto 2004

4.1. THE THEME AND PARTICIPANTS

The authors organized a one-day urban design workshop held at the conference hall of the City Hall in the summer of 2004 and tested the prototype (Table 3). The theme of the workshop was to explore useful urban design resources of both objects and incidents observed in the downtown area of Kumamoto city, which is a 400-year-old castle town. A total of Ninety-one students from 16 universities, forming 25 teams, worked to present two or three sheets of reports after site studies. In addition, 27 university professors and 2 local planners participated as jurors and facilitators respectively. The teams were split into four groups, each of which was assigned to one of the four study areas shown in Figure 3.

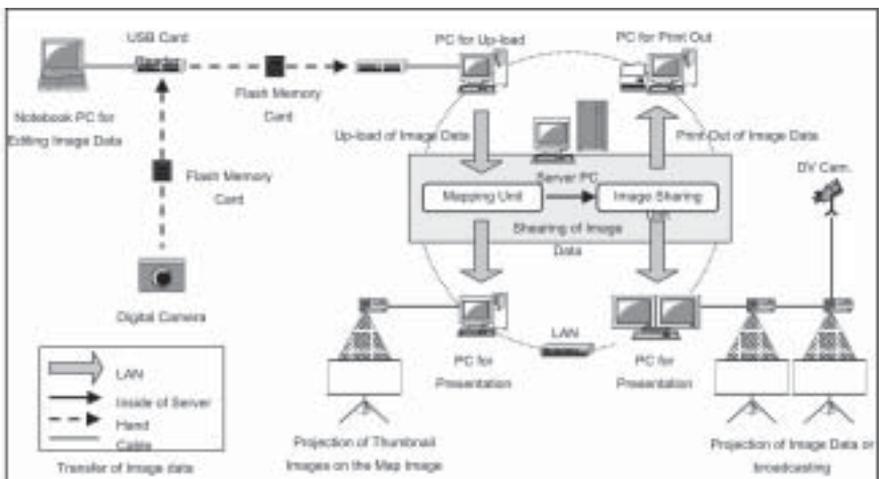


Figure 2. Framework of the Prototype System.

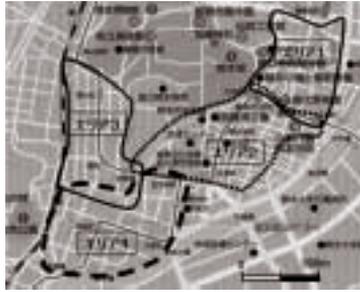


Figure 3. Map of Four Study Areas in the Downtown area of Kumamoto city.

4.2. ORGANIZATION OF THE SUPPORT TEAM

The participants, the facilitator, and the juror are common roles in a planning workshop. To facilitate operation of a workshop with a large number of participants, the authors organized special support staff (Table 1). As it was difficult to provide a network environment for each student team in a short time, the organizer took the role of the Operator to handle the web system for each team. In exchanging digital data between the team notebook PCs and the network PCs of the operator, flash memory devices were used. One member of the supporting staff was allocated for every five or six participants.

TABLE 1. Roles of Support Staff

Support Staff	Task	Number
(a) Operator	To up-load digital reports of a team to the web Operate the web system at the team presentation stage Print out thumbnail image list of the reports on the web	6
(b) Administrator	To set up and maintain the system environment	2
(c) Floor assistant	To assist participants in the report production stage	10
(d) Floor Director	To direct the workshop according to the time schedule	1

4.3. SPATIAL ARRANGEMENT OF THE WORKSHOP HALL

Figure 4 shows the spatial arrangement of the 400 square metre workshop hall in the report production stages, and Table 2 indicates various considerations for each subspace.

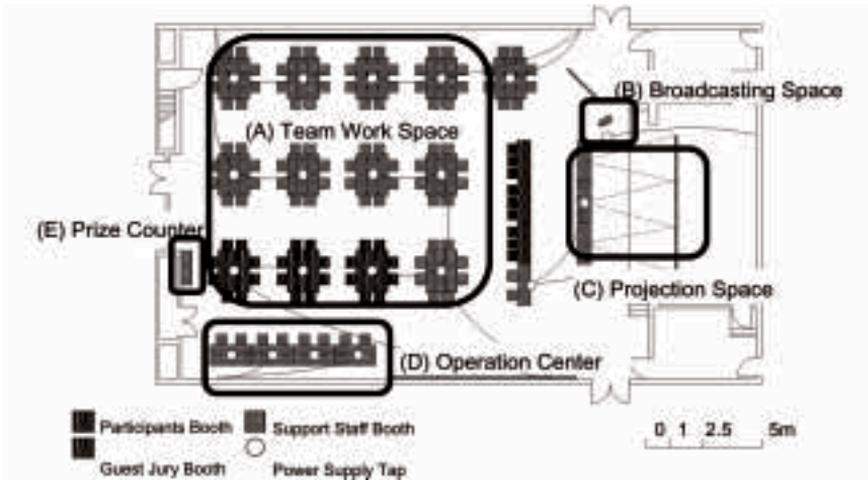


Figure 4. Plan of the Workshop Hall at the Report Production Stage.

Figure 5 shows the workshop hall setting at the presentation and voting stages, which were rearranged during the half hour intermission before the presentation.

TABLE 2. Considerations for Each Subspace.

Team Work Space (A)
<ul style="list-style-type: none"> • Two teams shared each island table. • Six power supply outlets were located for each island of desks.
Broadcasting Space (B), Projection Space (C)
<ul style="list-style-type: none"> • To enable participants to recognize the situation of the workshop space, a video image taken by the floor assistant was projected on the screen.
Operation Centre (D)
<ul style="list-style-type: none"> • Location of network PCs operated by workshop teams in the stage of report production. • Thumbnail image lists of the reports from teams were printed out here.
Prize Display Table (E)
<ul style="list-style-type: none"> • To enhance participants' motivation, prize certificates and gifts were displayed.

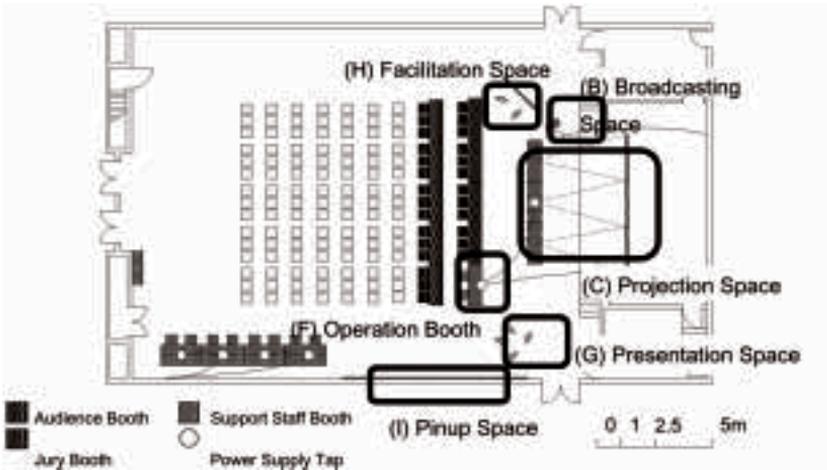


Figure 5. Plan of the Workshop Hall at Presentation and Evaluation Stage.

TABLE 3. Considerations for Each Subspace.

Operation Booth (F), Broadcasting Space (B), Projection Space (C)

- 3 sets of screen and PC projectors were set up. At presentation, 2 were used to display a report uploaded to the image data sharing unit of the system. These two screens were mainly used for comparison of two different reports or juxtaposition of the close-up and total image. The last was used to display the image on the mapping unit. To enable the audience share the live atmosphere of discussion among presenters and juror, one of these screens was arranged to display a live video image.
- In order to support team presentation, the operators operated the system at the request of speakers.

Presentation Space (G), Facilitation Space (H)

- Space for presentation team: two large screens, and space for facilitators facilitating presentation and discussion.

Pinup Space (I)

- Here, all sheets of each team report were pinned up by study area, so that participants could easily view them at the voting stage, and could vote by just attaching voting seals on a collection sheet pasted just below each presentation, which facilitated the process of smooth vote counting.
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Figure 6. Practice of the workshop.

4.4. RESULT OF THE WORKSHOP

After 2 hours of area studies, and a 2-hour team discussion and presentation sheet production, 25 teams had submitted 56 reports to the system. After a 3-hour of presentation, discussion and voting process, the best report for each study area and the two most impressive reports were selected (Figure 6, Figure 7).



Figure 7. Some of the prize winning reports.

5. Result of the case study

Even though the number of participants was quite large, with the use of the prototype system and with the help of the support team that divided up tasks carefully, the presentation and discussion at the workshop were conducted quite smoothly and enthusiastically.

In order to assess the effectiveness of the introduced techniques, the authors conducted two different sets of questionnaire for the students and university professors participating in the workshop (the rate of respondent: students 63.7%, professors 72.2%).

TABLE 4. Positive Evaluation

Aspect	Result of the questionnaire	Examples of the free answers
General Impression	Many students had the impression that the workshop was successful (83%).	<ul style="list-style-type: none"> - I found a lot of design resources at the site. The experience was useful. - The workshop schedule was very tight but because of that, I was able to keep myself moderately alert in the workshop.
Procedure	<p>Site studies by team were well accepted by students (88%).</p> <p>The voting process and the prize enhanced participants' motivation (84% of students).</p>	<ul style="list-style-type: none"> - Team members often raised fresh views or ideas that one could not notice oneself. - Because of the prize, I was encouraged to work at the production and presentation from beginning to end.
Framework of Support	Most students were not familiar with PCs (28%), but could successfully submit the required work by requesting help from floor assistants (81% of students).	<ul style="list-style-type: none"> - With the help of floor assistants, I was able to edit image data smoothly. - The arrangement of the support for us was quite systematic and effective.
Prototype System and Workshop Environment	Some professors pointed out the advantages of the use of PCs in producing a report.	<ul style="list-style-type: none"> - Most students were able to submit a well-arranged reports by using a PC, irrespective of their ability of hand sketching.

Prototype System and Workshop Environment (continued)	Easy to observe team reports, even from the back row, because of enlarged or zoomed-up images on the screen (77% of professors).	
	Professors pointed out that comparison or juxtaposition of two different images on the two screens contributed to understanding the report.	- The presentation was very dynamic and entertaining.
	The mapped list of reports on the mapping system was convenient for audiences at the presentation (85% of professors).	- Audiences could easily grasp the location of specific design resources discussed. Observing their distribution on a map was stimulating
	The printed list of thumbnail images was useful in the voting process (86% of students and professor).	- Many voters selected the best reports consulting both the pinup board and a handout.
	The live image of the workshop projected onto the screen helped to enhance the sense of involvement (69% of professors).	- It was possible to feel the presence of the speakers and the jury - It was possible to read facial expressions
	The pin-up board helped in viewing team reports, and helped voting (77% of professors).	

TABLE 5. Negative Evaluation

Aspect	Result of the questionnaire	Examples of the free answers
Prototype System and Workshop Environment	Because of the lack of knowledge of PC operation, some took time to produce sheets (28% of students).	- Members' roles were limited by their ability in PC operation. - As there was a lack of notebook PCs, interaction within teams was disturbed.
	They had to wait when asking operators to up-load reports (some students).	- At the last moment of the report production stage, the Operation Centre was crowded with those requesting operators to up-load.
	The school type layout of seats gave the audience a slightly static impression (some Professors).	- If the jury and audience sat around the speakers at the presentation stage, discussion could become more active.

6. Conclusion

This paper discussed the techniques of a planning workshop that introduced place studies, in terms of two interrelated aspects: the use of a special web system developed by the authors to support participants sharing image data of place studies, and techniques for administering a planning workshop with a large number of participants applying the developed system.

Reviewing the process and the result of the case study, as well as the participants' answers to the questionnaire, it is possible to consider that the proposed techniques for the planning workshop are successful, even though the authors need further studies in the following aspects.

- To develop a system and technique with which workshop participants could use various other representation media apart from still images and video movies, such as physical models or manual sketches, etc.
- To refine the usability of the prototype system so that participants could manipulate the systems in a workshop much more easily, and would simply require the ability to browse web pages, without the need for experience and higher knowledge of computers.

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