

## THE STUDY OF DESIGN INTERFACE FOR NETWORK COLLABORATION

NORIHIRO KAWASUMI  
*Wakayama University*  
*Japan*

AND

MITSUO MOROZUMI, YASUHIRO SHOUNAI AND RIKEN HOMMA  
*Kumamoto University*  
*Japan*

**Abstract.** In this paper, we discuss about the design interface for the Virtual Design Studio projects and intend to develop the experimental prototype to evaluate our idea. Web pages and simple script, such as the digital bulletin board, are generally used for the network collaboration. But these systems require the extra work for designer to present his proposal on the web. So we propose the Visual Pinup Board that is possible to handle the registered design proposal like the actual pinup board and it can be used with common web browser.

### 1. Background and Problems

The concept of Virtual Design Studio is the future oriented working style of the Information age. It aims to do collaborative design during the geographically divided people supported with the asynchronous or synchronous communication technology via the network. Various experiments of the Virtual Design Studio have suggested the efficient system environment for the collaborative design (Morozumi, 1999; Schmitt, 1999; Kawasumi, 1999). Early Virtual Design Studio Projects that we have ever experienced, we have used the web-based bulletin board and homepage for the design collaboration. It makes it possible to update and exchange the design proposals quickly without editing HTML document.

However, it became clear that the interface and operation of digital bulletin board are so complicated and not suitable for concurrent design activities via the Internet.

1. It's so difficult to understand the whole asynchronous activity increasing the number of updated proposal

2. The registered proposals are displayed only in the formatted page, such as the list table sorted by updated order or tree-shaped diagram, not edit it interactively by user.
3. It's not well supported to indicate visually the current topics and important proposals through the ad doc design activity.
4. It's corresponded only the asynchronous communication, not working dynamically.

The digital bulletin board system is not well optimized for the flexible design activities because; they are not equipped with the user-customizable visual interface and established group work style for network collaboration.

## 2. Basic Concept and Objectives

To solve these problems listed above, we propose the group working style based on the features of the pinup board and the dynamic web-based interface that realizes the convenience of the actual pinup board that we have ever used.

### 2.1. GROUP WORK WITH PINUP BOARD

The group work with pinup board is common used in the practical design activities. The member can make his proposals arranged freely on the pinup board in any time and these proposals are shared in the both of synchronous and asynchronous collaboration by the design team. The major features of the pinup board style's collaboration are below.

1. Easy to understand the outline and overview of the concurrent activities as the visual arrangement of proposals.
2. Each proposal is appropriately arranged according to the importance and the mutual relation on the shared board.
3. Arranged naturally for the old proposal to become the bottom as the recent proposal becomes the top, so the important idea and proposal are not hidden with others.
4. Easy to indicate and re-arrange them dynamically by participants in the creative design discussion and presentation.

### 2.2. FEATURES OF VISUAL PINUP BOARD INTERFACE

In addition to the features listed above, we aimed to develop the system that was equipped with the following functions.

5. The registered proposals are arranged and stacked dynamically as the small thumbnail icon, such as the use of Post-It memo.
6. Supporting the multi-view display that it is easy to customize by each user and team.

7. Recording the arranged image icons on the browser as the time-stamp view that is possible to follow the process of design activity.
8. Providing the easy and dynamic decision-making style using with the synchronous communication system, such as the Microsoft NetMeeting.

### **3. Implemented System**

The Visual Pinup Board system is consisted with the several components written by the Visual BASIC, JavaScript, Dynamic HTML and ASP scripts based on the Windows DNA technology. Then it requires the web server working the relational database utility on the server side and the popular web browser that is compatible for JavaScript can be used such as the Internet Explorer 5.0 over on the client side.

The structure and appearance of the Visual Pinup Board interface are illustrated in Figure 1. The set of the image icons are arranged and display the more information with simple mouse operation, such as clicking, dragging and double-clicking. So we assume that it will be used as the implement for the visual data management in the asynchronous activities and the web-based support system for the design discussion and presentation to mediate the creative design opinions visually in the synchronous activities.

### **5. Conclusion**

In this paper, we have discussed about the feature of web-based interface for network collaboration and reported the result that we had tried to develop the prototype of the Visual Pinup Board. We have not enough opportunity to verify it. However, we are convinced that our interface is so useful for the both of synchronous and asynchronous design collaboration on the web. As the following steps, we are planning to integrate the Visual Pinup Board interface and GW-Notebook that was developed by Professor Morozumi. The GW-Notebook has good feature for the asynchronous design collaboration and data management but synchronous is not well. Then we intend to report and evaluate the integrated collaboration environment in the practical design projects in the next.

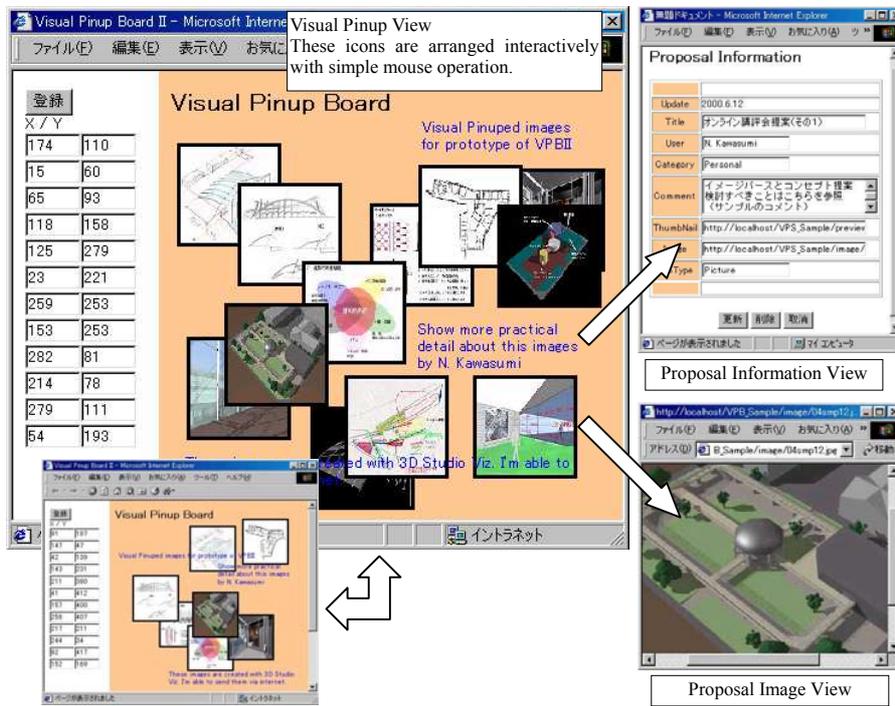


Figure 1. The page layout and structure of the Visual Pinup Board Interface

## Acknowledgements

This study was supported by the grant-in-aid for Scientific Research (A) from the Japanese Ministry of Education, Culture and Science: Project number 10355023.

## References

- Morozumi, M., Shounai, Y., Homma, R., Iki, K. and Murakami, Y.: 1999, A group ware for asynchronous design communication and project management, *CAADRIA99*, pp.171-180
- Kawasumi, N. and Yamaguchi, S.: 1999, A study of design information system for network collaboration, *CAADRIA99*, pp.191-199
- Hirschberg, U., Schmitt, G., Kurmann, D., Kolarevic, B., Johnson, B. and Donath, D.: 1999, The 24 hour design cycle, *CAADRIA99*, pp.181-190