Cubic Display Device "Z-agon"

-The Movie to Design Z-agon with Scenario-

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ABSTRACT

Z-agon is a device with six-face displays which is constructed in the shape of a cube. We assume that Z-agon will be used as a portable movie player. Designing practical product, we propose a new ubiquitous interface in the media design. We made a movie to show up its form and exam its future needs and uses for the design. In this paper, we show a design process to build up the concept of Z-agon using scenario-based modeling empowered by the video. This movie consists of three sections. The first section shows a Projector Prototype to exam its appearance. The second section shows the design approach. The third section shows a movie scenario to reveal its interaction.

Categories and Subject Descriptors

C.0 [**Computer Systems Organization**]: General

General Terms

Design of ubiquitous device and interface

Keywords

Ubiquitous interface,prototype,tangible,Z-agon

1. INTRODUCING Z-AGON

Z-agon(www.z-agon.com) is a tangible visual device which has a cubic six-face display. All displays are rimless.**figure1*** They are not only showing visual information as displays but also properly act as an interface. Additionally, recognizing

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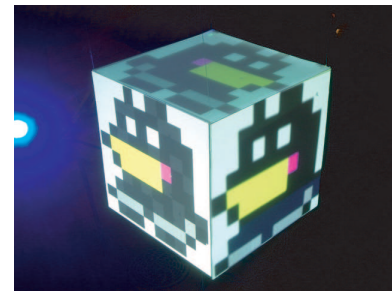[‡]Dr. Okude is a professor of KEIO University, an adviser of the project.

Figure 1: prototype of Z-agon

its up and down for user, Z-agon can caliculate the directions of each displays with an algorithm. The network of Z-agon is envisioned to be peer to peer, therefore Z-agon can privately communicate each other shering its contents. We propose the possibility of new visual communication with Z-agon.

This project is the study of turning out the new interface of ubiquitous environment. There are some related studies. Media^3 [4] is also the cubic display system. It aim to show a virtual objects with the display. However, Z-agon is focusing on its cubic interface and visual contents for everyday uses. Cubicle[3] is studying with natural interaction between user and cubic interface. The novelty of Z-agon concept is that we combine informational displays with tangible cubic interface on each face of its own.

We positioned Z-agon as a portable movie player for everyday use. Z-agon is designed based on scenario-based-modeling[5]. In this paper, we introduce a Z-agon Movie which is created to bring out details of Z-agon Interface.

2. Z-AGON MOVIE

Z-agon Movie is made to become comprehensible to understand all designs of Z-agon we reserched. Therefore, this movie is divided into three sections. First, we turn out a Projector Prototype. Second, We show a vision of our design by an animation. Third part is a scenario movie described Z-agon use and its interaction. It is based on the daily context we research.

Figure 2: Scenery of making Z-agon prototype

2.1 *Tangible Prototyping*

This part is a scenery about turning out a prototype to examine tangibility of Z-agon. It is made a 3-D cube from acrylic boards. We project video image to the cube from five point and we film the vision. We accomplish the 12 inches prototype .We examine the view from various angles.**figure2*** Observers who looked at the prototype were interested in the ambient vision, the movement of the character through one display to another and the relativity between the direction of represented contents and real space.

2.2 *Design Approach*

The second part is an animation describing a bridge-building between the tangible prototype and a scenario movie. We mentioned Z-agon's six-face displays functions as an turning interface. Users use it like a turning puzzle, then an algorism sorts information on it. The prototype is about 12 inches now, it's preferable that Z-agon is about 2.5 inches as an portable device . And we have to examine its tangible designs and embodied interaction on it[2] . However, now we do not achieve to create a small tangible prototype because of technical difficulties. We consider to share the vision by making the movie with scenario based modeling to show what possibilities we have for the Z-agon design[5]. Looking at today's technological direction and market direction, we think this device would fulfill the needs in the near future about 2006. Technologies constructing Z-agon will be, for example, Organic EL displays, e-papers, fuel batteries and 3G cell phone networks.

2.3 *Scenario Movie to Design Interaction*

This story is based on the scenario with personas. Personas are not real people, but they are based on the behaviors and motivations of real people and represent them throughout the design process[1]. They exam an indispensable base for good design, actually uses Z-agon in notional setting of 2006. The main persona is set as an university student, whose name is Yutaka. In addition, three university students act as personas in the movie. This scenario is represented with a focus on practical activities and various actions take place in a day. Yutaka receives a new video mail. The newly coming message is displayed on the bottom face to avoid getting in the way of user's work. He picks up Z-agon to look at the mail, and then his day begins with Z-agon. Another user looks Z-agon on the street. Even if the user puts Z-agon up side down the device would recognize it and automatically corrects itself by algorism. This will enable us to use Z-agon as turning interface. A Yutaka's friend plays

Figure 3: Visual communication

a game contents which makes the most of Z-agon's features, its six-face. The game is displayed as a scrolling game. A character moves through one display to next display, then a user makes tracks of charactor's moving with the turning interface. We can feel more interaction from the game than ever, like changing the game screens with your hands tangibly for instance. Also Z-agon has built-in video cameras. This device augments communication between users. A user can see the face of another user while the user is using Z-agon. It provides us real-time user's visual contents.

3. VISION

We can describe some details of the design of Z-agon from the scenario movie. We can set up the possibility and vision by the movie based "magic scenario". By visualizing the concept using video image, we could feedback user's reactions qualitatively and brush up the details of our design. On the next step, the tangible prototype should be smaller than now and should have some interactive functions. We also need to examine the relationship of network and interaction as an interface.

4. ADDITIONAL AUTHORS

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