Participatory Video Prototyping

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INTRODUCTION

At U S WEST Advanced Technologies, we have been using a method we call Video Prototyping to simulate interface ideas for over a dozen software design projects. It is similar to the work described by Curtis and Vertelney [1], because we create a simple stop-motion animation depicting user interface design concepts. However, Video Prototyping requires no post-production editing or any special expertise in video production. In this way it is more like Muller's PICTIVE work [2], where multi-disciplinary design teams use it in informal brainstorming sessions. Unlike PICTIVE, we do not simply record design ideas but create an evocative simulation of the proposed interface.

TECHNIQUE

Armed with magic markers, colored paper, scissors and glue stick, we construct rough representations of the elements of the interface. Then, using a consumer camcorder on a copy stand, we bring the interface to life. For example, if we want to show a pull down menu, we draw a menubar on paper and a mouse arrow on clear acetate. We turn on the camera and move the acetate so that it looks as if the mouse is moving over the menubar. When we are over the menu title, we make a clicking sound and pause the camera. Then we draw the menu on a small piece of paper, put it under the menu title, and restart the camcorder. When viewing the tape, the menu appears to have been pulled down from the menubar. For some of the prototypes, we find it helpful to include short live action sequences which show how the interface will interact with its environment. For example, if the system will produce a printout, we show a real person picking up paper from the printer, then a close up of the printout. We concentrate on informal presentation of design ideas; we do little or no post-production on the tapes.

Video prototyping design teams have included user interface designers, developers, graphic designers and marketers. Though we have so far been unable to include end-users in the actual prototyping, we have used the tapes to get crucial early feedback from users on design ideas.

BENEFITS AND LIMITATIONS

We have found Video Prototyping to be an excellent technique for the initial exploration of user interface ideas. It is easier, cheaper and faster than computer-based prototyping environments. Groups of people can simultaneously contribute to the design; no special prototyping skills are required. We believe that the finished prototype illustrates the design team's vision for the system more effectively than written documents or static sketches. Because videotapes are so portable, and VCRs nearly ubiquitous, the prototypes can be used to elicit ideas and criticisms from people who cannot participate in the design meetings because of time or distance constraints.

We have found that video prototypes are a useful adjunct, not replacement, for written specifications. The majority of our video prototypes have not been comprehensive enough to serve as the user interface specification. The few that have been sufficiently complete are tedious to access because of the sequential nature of videotape. We have also found that video prototypes are a useful precursor, not replacement, for computer-based prototypes. Because the video simulations are based on paper artifacts, there are design issues unique to the hardware and software of the final product that are usually not addressed in the video. In addition, their lack of interactivity makes them unsuitable for user testing.

In summary, we have found Video Prototyping to be very effective for early idea generation, group participatory design, and communication among project members, clients and users.

REFERENCES

[1] Curtis, B., and Vertelney, L., Storyboards and Sketch Prototypes for Rapid Interface Visualization, *Tutorial Notes from CHI '90 Conference on Human Factors in Computing Systems, Seattle, WA.*

[2] Muller, M., PICTIVE - An Exploration in Participatory Design, *In Proceedings of CHI '91 Conference on Human Factors in Computing Systems, New Orleans, LA.*