Mediators: Guides through online TV services

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ABSTRACT

The Mediator prototype which is demonstrated is the result of exploratory research into domestic online entertainment services. Mediators are anthropomorphic guides who aid users in selection and navigation to content in interactive television services. The project goals include developing prototype services and navigation tools and carrying out extensive user tests. The main focus of the work is to develop models of interaction, functionality and system behaviour.

KEYWORDS

Interactive television, service creation, consumer systems, anthropomorphism, social interaction, navigation, interface agents, adaptivity.

INTRODUCTION

The vastly extended offering of broad- and narrowcast media generally estimated to be available via television in the near future is expected to bring severe problems of navigation and selection for the general public.

We are exploring future Interactive Television (ITV) service concepts with a multidisciplinary team, integrating knowledge of TV design and production, Computer Human Interaction issues, service provision models, platform architecture and digital media authoring, producing realistic server/set-top box applications.
Questions central to our research include:
• What kind of interactivity will be used by watchers in a broadcast environment?
• Which services will be interactive and transactional?
• How will these services be presented?
• How will people navigate to and through these services?
We have built a services environment on a realistic ITV platform to step on a learning curve and get feedback from end users. In this demo we will focus on the packaging aspects of the services.

PROBLEM DEFINITION

Current interfaces for ITV trials and prototypes provide little support for models of use based on present television, but instead opt for solutions including linear video sequences with predetermined branching points (3-D fly throughs, carousels) or very computer-like (menu based), direct manipulation interfaces. In other solutions functions are mapped directly onto buttons on the remote control. None of these approaches show the mix of engagement and interactivity that we regard as essential for online entertainment services. We have formulated three problems with respect to interfaces for ITV services:
a. general solutions focusing on ease of maintenance result in computer-like utility interfaces and navigators which have been found to be unacceptable to domestic television users.
b. quantity of offering makes searching for, finding and navigating to content both complex and time consuming
c. repeated use of the interface demands original solutions to maintain user interest and to offer ways of accommodating usage patterns and user preferences.

PROPOSED SOLUTIONS

We propose a set of solutions for the problems formulated above:
a. leverage users' mental models of how current linear television "works" and create an interface with a continuity and flow similar to current television, narrowing the gap between the TV dynamic and computer presentation.
b. instead of striving for efficiency of the interface, incorporate the activity of choosing and navigating to content into part of the entertainment, making the process of decision making both enjoyable and satisfying. We propose the use of a believable world metaphor for enhancing the navigational context.
c. introduce a user interface paradigm which supports development of system and interface adaptivity.
d. prefilter the content and use a social interface metaphor with human characters as representatives of the service, acting on behalf of the user.

DESIGN DIRECTIONS FOR THE INTERFACE

The first two proposed solutions will be directly obvious in the design of the interface. Some brief discussion is required on the last two solutions regarding filtering and anthropomorphism. These issues are also addressed by Kiesler, Nass, and Schneiderman in a panel of CHI '95 [1].

Our prototype models a future system in which prefiltering

is used to reduce the overall offering resulting in a choice more relevant to the user. Issues included in this model include a redefining of system success from one in which ease of use is measured by efficiency and productivity, to one which includes notions of optimal choice and user satisfaction. Issues such as emotion displayed in the interface become central.

Laurel [2] discusses related issues such as the need to match physical traits with expressions, thoughts and actions, as well as [3] the way in which dramatised characters make better interface agents than do fully developed human personalities. We referred extensively to these ideas while developing scripts, characters, and environments. Both literature from a social psychology and a filmic background suggest that there is a critical match between the user/viewer and the personality of the character [4]. We see human-like characters as a means of tuning in to specific audiences, and as a strong branding tool for services.

We chose for live-action (video) to create the Mediators. In this way we leverage the expectation that test subjects have of anthropomorphic interfaces and remove the problem that those (non-expert) subjects have been found to have in responding to very early results of research into synthetic characters. An additional benefit to this approach was that live actors could match the syntax and grammar of current television styling, accurately adding the prompts indicating interactive possibilities.
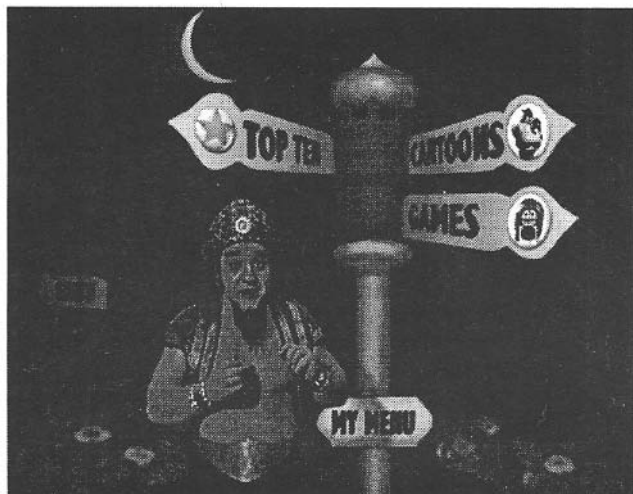

Figure 1. Mediators guide users through services

DESCRIPTION OF THE MEDIATORS SERVICES

The user has continuous cursor control through a remote control. When entering the top level of the Mediators world, a few services are each represented by Mediators with different characters. These Mediators direct their communication to the user in order to gain his/her attention and trust - each Mediator shares the goal of becoming the user's guide while navigating to content. When exploring

the screen, all active zones in the video show a subtly animated highlight in order not to distract the user from the video.

Currently three services are available: a Kids' service, a Games service and a Movies service. In the demo we focus on the Kids' Service which contains interactive games as well as animations and other episodic series. The presenter of this service is named Jinn, a character borrowed from Arab fairy tales. Jinn guides you through several signposts in a fantasy landscape to ancient buildings with previews of games and films shining through the windows (see figure 1). The interaction with Jinn is not focused on direct dialogue, his role is rather to stimulate the user and give contextual information. We experimented with methods to acquire data on users' preferences and intentions using social interaction principles, attaching emotional values to interface elements.

EVALUATIONS OF THE WORK AND CONCLUSIONS

At the moment of writing we are conducting user evaluations with children and their parents. At the CHI '97 demos we would be able to show recordings of end users in action and present some data.

Initial Conclusions
1/ We did an early informal test to measure acceptance of characterisation as well as understanding of choices and of the environment. Subjects related well to the style of presentation, had little difficulty in working out how to use the system, and felt that the system behaved in a way which they expected.

2/ When introducing the concepts as described into interactive TV services user engagement rises, navigation can be simplified and spending time in the service browser can be a pleasant activity itself. The use of real humans, however, proved to be critical. End users expect high acting abilities and highly responsive characters in the prototype.

3/ We are now confident in claiming that the grammar of current television (and so the users' mental models of how television programming "works") can be leveraged to construct comprehensive and consistent metaphors as aids to navigation and selection. Further we claim that it will prove necessary to provide "rich" programme environments to enhance the believability of the interface.

REFERENCES

[1] CHI 95 panel Wednesday, May 10 9:00 am to 10:30 am Interface Styles: Direct Manipulation Versus Social Interactions
[2] Computers as Theatre, Brenda Laurel, Addison Wesley 1991/93. p. 149
[3] Computers as Theatre, Brenda Laurel, Addison Wesley 1991/93. p. 145
[4] "When the interface is a face", Lee Sproul, Sara Kiesler, Janet Walker et al, Human Computer Interaction, 1996 (In Press)