ITV AS A COMMUNITY-TO-COMMUNITY COLLABORATIVE SYSTEM

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ABSTRACT

Web-forums and Instant Messengers provide a unique opportunity for the users to create and support spontaneous communities. However, such systems tend to focus on the one-to-one and one-to-many approaches. Community-to-Community interaction, described as two groups of people which communicate by means of a network, is still missing. This work describes early implementation of an interactive television (iTV) chat system, which dynamically creates chat rooms where users can discuss, share their TV experience and access web resources.

KEYWORDS

ITV, Instant Messaging, messaging systems integration.

1. INTRODUCTION

Web-forums and Instant Messengers provide a unique opportunity for users to create and support spontaneous communities. Friends, coworkers and gamers announce their presence and are able to find their friends on the Web by means of open and proprietary systems.

Those systems allow real-time discussions, file sharing and seamless integration with mobile networks. However, these systems tend to focus on the one-to-one or one-to-many interaction. User-to-community is the common scenario and consumer applications encourage this approach.

E-learning applications communication is based on student-to-student, student-to-teacher, student-to-class approaches that imply the one-to-many adopted on the Web. Community-to-community interaction, described as two groups of people which communicate by means of a network, would improve both entertainment and learning applications, but a concrete system is still missing.

2. ITV AS A COMMUNITY-TO-COMMUNITY INTERACTION SYSTEM

Community-to-community refers to the ability of user to cooperate locally with theirs neighbors and remotely with other user groups. Group of people is intended as two or more persons physically on the same place that share the same device to access the network and chat with a remote group. Three main concepts belong to chat systems: user interface, meeting places (also known as rooms) and resource sharing. Neither PC-based nor mobile phone based messaging systems are suitable for community-to-community chat. Small screens and desktop keyboard do not permit easy concurrent access to user interface.

Interactive TV (iTV) systems provide programmable consumer appliance with large screen and remote (infra-red or radio) keyboard, with extra keys for display interaction: concurrent access to user interface is practicable for a small in-house community. Meeting places have to be redefined, since extensive configuration process of PC's software should be avoided on an iTV system, which is perceived as an entertainment system and not as a computing device.

Two main solutions are suitable for defining chat rooms: user profile or current program selection [Carboni, 2002]. User profile contains both manually and automatically gathered data related to user preferences and

the system uses it to automatically classify users and propose them a virtual room (e.g., sport fun room, travelers room…). If user profile is not available (for instance, due to a strict privacy policy) rooms could be dynamically created and associated to a certain program (a football match or a film) and people automatically join the room associated with current program.

The resource sharing, which means sharing files, such as images, audio, video and applications on PC systems is not practicable on iTV: low-end set-top boxes are not suitable for file sharing, although they can load custom applications. Content sharing within an iTV community means to provide something that the others can watch in front of screen instantaneously; remote channel switching (where a user invites another one to join a certain channel) or snapshot forwarding (where a user sends an instant picture of current regional program) are realistic resources that can be shared between communities.

With these assumptions, we can imagine a new shape of playful applications: families, or groups of friends, switching from channel to channel, sharing knowledge and entertainment in a free way, or watching a soccer match communicating in real time and exchanging impressions and emotions. Moreover, we can imagine a new shape of interactive TV programs: interactive TV quizzes where two or more teams can compete each other simply staying at home, or TV documentaries about nature where people can directly chat with experts located in any world's place.

Figure 1. iTV Community-to-community applications shape a new age for collaborative systems.
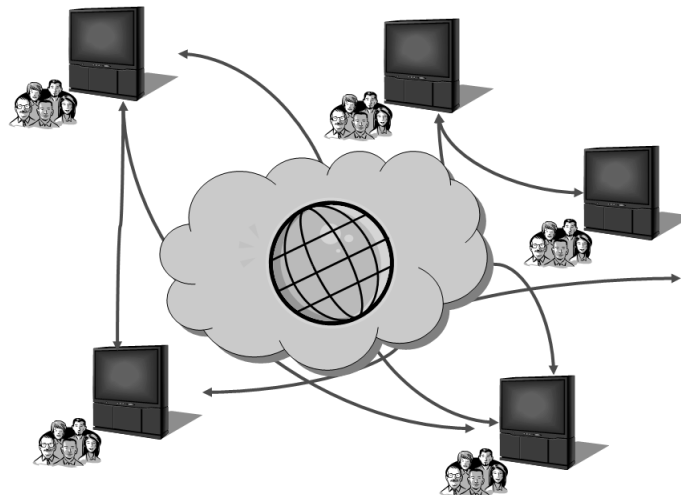
3. CONCLUSION

We have implemented the community-to-community system as a MHP-compliant Xlet [JavaTV] running on a DVD-S set-top box. The application uses AIM and Jabber [Jabber] instant messaging infrastructure, to test both proprietary and open protocols. Although user interface still needs to be refined, early prototype allows automatic chat room creation according to current program: people can chat with others and watch TV at the same time.

We plan to start extended tests with a community of young students watching a documentary on iTV with their teachers and expert guests exchanging knowledge, comments and additional information. Other works expose the benefits of community learning ([Bruckman, 1998], [O'Day, 1998]) and iTV community-to-community system will have the same results, making lessons more interesting and exciting and encourages collaborative work within groups.

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