Living@room: a Support for Direct Sociability through Interactive TV

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Abstract
The goal of this paper is to describe the idea of a TV-based system that makes direct sociability among remote people possible. This system – called Living@room – allows the remote fruition of multimedia content and enables people to have the sensation of being in the same living room, sharing the same remote control.

1. Introduction

New technologies and applications (for example chats, video conferences, video calls and so on) play a significant role in connecting people and allowing new ways of staying in touch. The need of being "always in touch" is confirmed by the success of community services such as Frappr[1], LinkedIn[2], MySpace[3] and Second Life[4]. All these services are clear examples of communities which make the so called sociability possible. In particular they foster two types of sociability, that could be both computer-mediated and face to face, both online and offline. Indirect sociability (Oehlberg, et al., 2006) is a kind of relationship among people who are talking about something not in real time (i.e. when you talk to your colleagues about the program that you saw the day before). Instead, direct sociability is a kind of relationship among people who are talking about something in real time (i.e. when you talk to your mother about the program you are watching at that moment). The importance of social network is also pointed out by the presence of many research projects. For example, **tunA** (Bassoli et al., 2006) is a mobile wireless application that allows users to share their music locally through handheld devices. Users can "tune in" to other nearby tunA music players and listen to what someone else is listening to. **Reflexion** (Cullinan & Agamanolis, 2006) is another example of social application: it is a video communication system that acts like a "magic mirror". A user can see a reflection of herself together with the reflections of other people in remote locations. Even the project **AmigoTV** (Coppens et al., 2004) makes real voice communication over television possible. In particular, a user can speak with her friends thanks to an avatar. Finally, an interesting project is **2BeOn** (Abreu et al., 2001), a system that integrates basic and advanced communication services, enabling TV users 'To Be Online', by communicating through TV mediated communication tools. In this position paper, we present our idea of a TV-based social experience for multimedia content streaming. The system we are working on is able to support direct sociability and communities. In particular, we imagine a virtual living room in which remote people have the sensation of sharing the same place, the same remote control and the sensation of watching the same content.

2. The Living@room idea

Our aim is to describe our vision of a TV-based system which makes direct sociability among remote people possible. In particular, the system we are working on – Living@room – allows the remote fruition of multimedia content (photo, video, documents, etc.) by simulating a face to face interaction. Through this system, users can enjoy the same multimedia content in real time. Moreover, they can watch and listen to one another in order to share impressions about the content they are enjoying. To define the features of Living@room we thought about the needs of a group of friends: they live far from one another and, nonetheless, they would like to meet and watch TV together. We imagined that they have the same advanced set-top-box (STB) connected to a broadband network, a TV and a webcam. We also imagined that one of them (Marco) wants to show the video of his holiday to his friends. Using a mechanism similar to Chuah's (2002) "buddy surfing", Marco establishes a connection with his remote friends. Marco chooses from the local resources of his set-top-box the video's folder and starts the streaming. Every participant can both watch and comment the photos. Moreover, they can also watch and listen to one another. The starting point of our research was the study of the most interesting features of many research projects: *i*) streaming of files among a community of people using the same device (tunA); *ii*) creation of a space with a unique and intimate social dynamic which

[1] http://www.frappr.com/
[2] http://www.linkedin.com/
[3] http://www.myspace.com/
[4] http://secondlife.com/

enables users to play direct sociability (Reflexion); *iii*) real voice communication over television (AmigoTV). Then, our work tried to integrate all these features in a single system and to enrich it with other functionalities for example *i*) the "shared remote control"; *ii*) the streaming of a multimedia content stored in the local hard drive; *iii*) the possibility of seeing and listening to other participants.

Fig. 1. A first prototype of Living@room interface.

A key feature of the system we are working on is the "**shared remote control**": any user can fully control the content streaming (i.e. pausing, rewinding, etc.), even if the content has been delivered by another user. This behaviour is similar to what happens in a real living room: the remote control is shared by all the people that are enjoying the same media. The innovation of our system is the integration of this behaviour and the network in order to extend the control of time shifting to other people. In this way, people have the sensation of being in the same living room, sharing the same remote control. The main technical features of Living@room are: *i*) a chat and videoconferencing system to support remote interactions; *ii*) a peer to peer network to allow the multimedia streaming and the shared remote control. Notice that we are still evaluating the technical constraints and the network specifications. A typical Living@room interaction could be as follows: *i*) the user launches the Living@room application from her STB; *ii*) she selects the participants through a check list that shows just online friends; *iii*) she selects the content to stream, choosing from her local resources; *iv*) the streaming starts, showing the interface presented in Fig. 1 (on the left side, there is the content streamed, while on the right side, there is the video of all the other participants); *v*) during the content stream, any user can fully control the content streaming itself. Because the remote interaction and the shared remote control function are a demanding task we plan to evaluate if the interaction supported by our system works as well as the face to face one.

3. Conclusion

In this position paper, we present our idea of a TV-based social experience for multimedia content streaming. Considering that the enjoyment of television is still a co-viewing activity, our system aims to reproduce this behaviour when users are far from their friends or relatives. In fact, the system we are working on is able to create a virtual living room in which remote people have the sensation of sharing the same place, enjoying the same content and sharing the same remote control. We designed the user interface using the paper prototyping technique. Moreover, we are designing the system's architecture. We are evaluating the technical constraints and we plan to develop the system by the end of the year.

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