TunA: A Mobile Music Experience to Foster Local Interactions

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ABSTRACT

Can the Walkman become a social experience? Can anyone become a mobile radio station? With the TunA project we are investigating a way to use music in order to connect people at a local scale, through the use of handheld devices and the creation of dynamic and ad hoc wireless networks. TunA gives the opportunity to listen to what other people around are listening to, synchronized to enable the feeling of a shared experience. Finally, TunA allows users to share their songs in many situations, while moving around, fostering a sense of awareness of the surrounding physical environment.

Keywords

802.11, music, synchronisation, local networks, shared experience, ad hoc networks

INTRODUCTION

R. D. Putnam claimed a few years ago: "Social networks based on computer-mediated communication can be organised by shared interests rather than by shared space"[1]. As the market of PDAs spreads and new wireless technologies are being improved, we research instead a way to create and support social networks of people who share the same physical space. In the application we are currently developing music constitutes the main interest around which communities, virtual and real, can be formed.

We wish, in general, to contribute to the understanding of how wireless networks, so far mainly considered for their "globalising" potential, could also make people more aware of their local reality. By connecting PDAs in an ad hoc way with 802.11b, we focus on the creation of dynamic local networks in which users are able to share information and resources with others who are in range.

In order to find a subtle and non-intrusive way to connect people who are nearby through mobile devices, we decided to explore the concept of a "shared music experience." Music is commonly used as a form of mobile entertainment, through personal devices such as Walkman or digital players. While so far listening to music when moving around has been mostly an individual and quite isolating process, we are here suggesting making it a fun and socialising experience.

MOTIVATION

The TunA project is about being able to access the playlists of other users who are near, and to listen synchronously to what someone else is listening to. This application has been developed following a recent social study that we conducted for a project called WAND (Wireless Ad hoc Network for Dublin)[2]. WAND is an infrastructure, based on 802.11b and in the process of being installed in the city centre of Dublin. It is designed to support and run applications that exploit an ad hoc, decentralised, and peer-to-peer type of communication. An ethnographic study was organised in order to understand the socio-cultural dynamics of the area covered by the network, to involve users in the project development, and to inform and inspire content and service providers for the design of new applications. In this framework, we see TunA as targeted to some of the communities identified during this study, in particular students, skaters, and commuters. The goal of the project is not only to create new social links but also to strengthen existing ones; established communities like the skaters could in fact use TunA to reinforce their identity, and to express themselves in new creative ways.

Fig. 1: Example scenario of TunA usage—people on a bus

TECHNOLOGY

Tuna is ideally meant to work on any handheld device that supports 802.11 technologies. We are now working on a prototype for iPaqs, running the GPE 0.7 version of Linux Familiar, connected in ad hoc mode through 802.11b. TunA can be used as a standard mp3 player for personal music; at the same time it visualises, in one single screen, all the other TunA users who are in range, and gives options to access their playlists, their profiles, and the songs they are listening to. The user has an option to "tune

in" and start listening to what another person is listening to. An important aspect of this work is the synchronisation of the listening experience. The "tune in" option gives in fact only access to the song another user is currently listening to, and this is what we refer to as a "shared music experience". Finally, in order to keep track of the songs and the users encountered TunA gives the possibility to have a record of "favourites".

Fig 2: TunA interface in development

SCENARIOS

TunA can accommodate a number of occasions in which people gather during the course of the day. While conducting the ethnographic study for WAND, previously mentioned, we ran across some recurring situations happening in the city centre of Dublin, where TunA could play an active role in connecting people who are nearby.

- *Queuing for the Bank.* On Thursdays most of the employees receive their salary. A wide number of people gather in the main branch of AIB (Allied Irish Banks) to collect the money to spend over the weekend. To make the action of queuing more interesting and engaging, music enthusiasts could use TunA to feed their curiosity about what other people in the queue are listening to.

- *Commuters.* The 123 bus is one of the main links between opposite sides of the city. Many commuters spend part of their daily routine on this bus, sometimes getting curious about each other's presence. TunA could provide a platform for light-weight interactions, in which people can discover who else commutes during the same hours, find out if they have music tastes in common, and finally listen to what others are listening to.

- *Skaters of the Central Bank Square.* A well-established community of teenagers gathers everyday in front of one of the main buildings of the city centre. They have

in common their passion for skating along with a specific set of rules and behaviours. TunA could help this community to reinforce their identity through music. Instead of bringing their stereo and listening to their songs loudly, which would cause problems for the surrounding environment, they could use TunA to have a shared music experience, while still keeping their privacy and an individual listening process. At the same time they could provide a source of music, a sort of "skaters' radio station", for other people around.

RELATED WORK

The recent success of the new version of Apple iTunes, which uses the Rendezvous technology to share music playlists over the same local network, has proven the potential of wireless peer-to-peer applications that count on the physical proximity of the users. iTunes is mostly suitable for office spaces or in general "static" settings, while TunA focuses on a mobile fruition of music, and on the social dynamics fostered by an ad hoc shared music experience. It is moreover based on handheld devices instead of desktop computers, and this makes it a very flexible application.

Along the same lines as TunA, the SoundPryer project [3] is about a peer-to-peer wireless exchange of music files through devices, especially designed for car travellers. TunA, targeted mainly to people moving around in an urban environment, translates the profiling process that SoundPryer uses to identify vehicles into a more personal one. With TunA the identity of each source of music is linked to the information users want to give about themselves. Moreover, the shared experience TunA wishes to provide is connected to the concept of synchronisation, which is for us at this stage one of the main technical issues to face.

FUTURE WORK

In order to make TunA progressively more flexible and engaging, we plan to implement, in future versions, ad hoc networking protocols, to allow search options. We also see TunA as ideally integrated with an Instant Messaging application; messages exchanged among users could in fact become the result of the shared music experience.

ACKNOWLEDGMENTS

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