Reminiscence Park Interface:
Personal Spaces to Listen to Songs with Memories and Diffusions and Overlaps of Their Spaces

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ABSTRACT

We propose Reminiscence Park Interface. This interface gives the personal spaces for listening to the favorite songs by using the original music boxes. And our interface also visualizes the diffusions and the overlaps of the users' spaces by computer graphics on the original resonance table. The users can enjoy listening to their favorite songs alone or with somebody.

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General terms: Design

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INTRODUCTION

People enjoy music by playing, singing, dancing and listening. When they play or sing or dance, they can get pleasure and achievement of doing these actions well. A person has his or her favorite songs and non-favorite songs. Especially, this fact tends to have a bad influence on enjoyment of listening to the songs. It is often not easy for people to enjoy listening to the songs along with others face-to-face. For example, when people share mobile music player, they would worry about what another person likes. If a system selects their favorite songs, listening would give people new pleasure. There have been many developments of the systems to enjoy for playing instruments along with others under conditions of face-to-face situation. In comparison, at least under conditions of face-to-face situation, there have not been many developments of the systems ([1] etc.) to enjoy listening to each other's favorite songs together.

We propose new interface which lets the users enjoy listening to the songs along with others. Our interface design is based on parks metaphor. In parks, each person can have his or her personal space to spend free time. And, each person can contact with others whenever they feel like doing it. In our work, park metaphor means these good features of parks. Our concept is to let users enjoy listening to the songs along with others as if they spend free time in parks. This is why, first of all, our interface gives the personal space where they can select and listen to their favorite songs easily and singly. Secondly, our interface generates nostalgic feeling so that the users can sympathize with songs each other. Thirdly, our interface visualizes the diffusion and the overlap of their spaces so that they can contact with others lightheartedly. We call our interface Reminiscence Park Interface.

REMINISCENCE PARK INTERFACE

Personal Space for Listening to the Favorite Songs

Our interface provides the users with new music box as the space where they can listen to their favorite songs alone. Our music box is a small box and plays songs automatically when it is opened. This control is intuitive such as music-Bottles [2].

Nostalgic Feeling to Generate Sympathy

Our interface gives nostalgic feeling to generate sympathy for the songs. A kind of songs which can generate nostalgia is popular songs. Popular songs are listened to repeatedly in the short term. Therefore, popular songs can tend to be combined with the person's experiences and become the symbols of time in his or her life. And also, popular songs can remind many people of their past at the same time.

According to [3], when people talk while listening to the songs, they tend to have conversations about the singers and the title of the songs and about the dramas tying up with the songs. Therefore, we made a database of all songs with the properties of the songs; a release year, a singer name, a TV program, etc. Moreover, according to [3], the songs were selected by considering the properties of the songs which give the user's good reaction and non-good reaction. And their songs made the users feel nostalgia. This is why we set the rules for playing the songs as follows. We consider the times in which the music box is being opened as the time in which the users are listening to the song. The longer the

listening time is, the higher the favorability rating (interest or enthusiasm) for the song is. The shorter the listening time is, the lower the favorability rating is. And, basically, our system selects the song which has the same properties (same release year etc.) as the song having the high favorability rating.

Diffusion and Overlap of the Space to Listen to Songs

In order to let his or her space overlap to others' space, we design our system as a table-top system which is surrounded by some people. We design the table based on metaphor of resonance box. Generally speaking, resonance box has the functions for resonating sounds. Our table has these functions of resonance box. We explain our scenario as below.

Each time the box is opened, a song is played. A user can open and close the box as much as he or she likes. When the user meets a favorite song, he or she puts the opening music box on the screen of the table. Then, the wave patterns made by computer graphics are shown on the screen (Figure 1). The wave patterns around the music box spread on the screen. And also, the volume of the song becomes greater so that others can listen to the song. If another user chooses the song and places the box on the screen, new wave patterns spread and the song becomes greater at the same time, too. These functions express scatter of the sound. Our work considers the wave patterns as the diffusion of the personal spaces. After some wave patterns from two music boxes are overlapped, listened both songs by users fade out. Then, our system selects and plays a song by using common properties among played songs.

SYSTEM ARCHITECTURE

The hardware architecture is shown in Figure 2. The music box is $20 \times 15 \times 15$ cm. The table is approximately $1.4 \times 1.1 \times 0.9$ m. In the central area of the table, the frosted glass is embedded. This glass is used at once as a screen and as a special area to put the box on (apparently like a pond). On the rim of the table there are five music boxes.

Figure 1: The wave patterns.

Music Box:

Information that the lid is opened or closed is sent to PC. This is the sign to start / stop playing a song. At the same time, information of box position is recognized by identification marker [4] attached to the bottom. When the box is not put on the central space of the table, the song is coming from the radio in the box. The users cannot see equipments in a box. They are concealed. Inside of the box looks like a jewel box. When the box is put on the central space of the table, the song is played from the speaker of the table.

Resonance Table:

The same numbers of the transmitters as the boxes are linked to the PC. The camera recognizes the position of the box. PC determines the destination of a song by the position. When the box is not on the frosted glass, a song is sent to the radio via a FM transmitter. When the box is on the frosted glass, a song is sent to the speaker. The projector shows wave patterns around the box from below the table. At the same time, PC calculates the wave patterns. PC changes the song when the wave patterns cross other wave patterns.
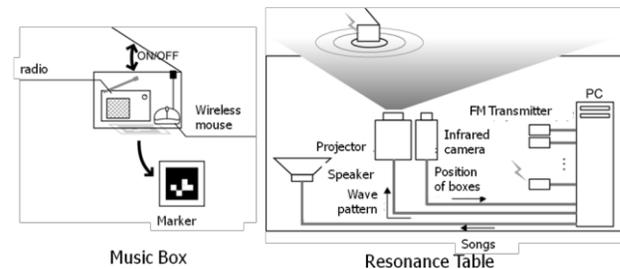

Figure 2: Hardware architecture of our system.

CONCLUSION

We proposed Reminiscence Park Interface. Each person can listen to favorite songs along with others face-to-face by our system. Future work is to verify the effects for building human relationship by using our system for a long time.

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