
Home Talky: SNS Service for Sustainable Communication for all the Family Members across Every Generation

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Abstract

As the range of SNS users has been widened, from mostly those in the 10s-30s to those in the 50s-60s, SNS has the tendency to be used as the new medium of family communication. This study targeted families, developed a mobile SNS service for enhancement of communication among every family member, and verified the effectiveness in improving the communication from the users in the late 10s, who start to possess one's own smart phone, to the generation of the parents in their 60s, using this service. For this, we designated the mobile SNS users from those in the 10s to 60s, and gave directions to the subjects to use the APP service in person. As a result, the participants could express the feelings to the family they normally could not, with relative ease and freedom, and showed the most active attitude toward the conversation between family members.

Author Keywords

Interaction Design; Emotion / Affective Computing; Behavior Change; Visual Design; Usability Study.

ACM Classification Keywords

H.5.2. User Interfaces: User-centered design;
I.3.6. Methodology and Techniques

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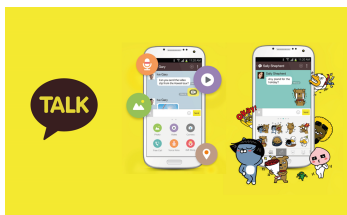


Figure 1: Kakao Talk, possesses the biggest number of users in Korea

Introduction

As people began to recognize smart phones as the appropriate medium for communication, they are comprehensively utilizing the function of personal relationships of the existing media through one smart phone. Smart phones are leading the personal relationship of people with its big step forward towards group-formed communicative functions of one-to-one or one-to-several people, based on double-way, instantaneity, and connectivity. People are experiencing a new change in personal relationships, as communication through smart phones became a daily routine.

SNS (Social Network Service) means an online platform that creates and strengthens social relationships through free communications and sharing information among users. The access to SNS is becoming more convenient even to the generation of our parents in the 50s and 60s. They are communicating with every generation, including friends, colleagues, and family, through the state-of-the-art SNS services. However, Kakao Talk (Figure1), which possesses the biggest number of users in Korea, was designed for the young 20s and 30s, and therefore provides rather complicated interface, icon menus and vocabulary that are difficult to understand, and small letters for the parental generations in the age of 50 to 60, who are going through the period of decline in physical/cognitive ability. This becomes the reason for blocking the smooth and sustainable communication between families, in which all the members from teenagers to the senior generation are gathered in one place and the rate as well as quality must stay high.

Most studies until recent times have the tendency of placing its focus on the power of influence and proliferation that mobile messengers possess. Also, there were many eyes viewing the mobile messengers as “SNS” which does not take a specific target into consideration. As the characteristics of media gets different according to specific targets, the motivation and immersion also differs. As such, the current study intends to research the function and UI design of SNS service in which is possible for every family member across all the generations can communicate smoothly and sustainably.

Related Work

Familybook and Togetherra

‘Familybook’ and ‘Togetherra’ are existent closed network service only for family communications. The main functions of ‘Familybook’ are in the possibility of 1) assigning family groups, through which a user can make up diverse family groups as their will, by dividing the family into those on the father’s, or mother’s side, in-laws, and so on, and 2) sharing schedule between family members when any member of the family registers an event, such as parents’ lunar birthdays, cousin’s birthday, ancestral rites day for grandfather, and so forth.

As for ‘Togetherra’, one could be invited to the family chat room only if he/she has a record of sending and receiving an e-mail with one another, and there is the advantage of easy and convenient sharing of media files between family members, such as video clips or photos. Both services are no more than just closed services only for families, and do not show big differences with other existing open SNSs, such as Facebook or Twitter, and we therefore felt the need of a



Figure 2: Photos from the Interviewing Scenes and Examples of Image Cards

specialized social relationship only among a family, and developing a function that could sustain it.

FAMcom

'FAMCOM' is an app service for enhancing communication between a family member in treatment at a hospital and other members. It has its great meaning in that it provides the environment for communication for the family to actively monitor the status of the patient even if they are away from him/her, by providing accurate information (sleep, meals, and health) of the patient to the family members who would be feeling sorry for their being unable to visit him/her often [1]. We could actually acquire a similar insight in the user interview of the current research. People wanted to get informed of the current state of their family members.

User Investigation Design

An interview targeted toward various members of the family of each age group was proceeded to investigate the needs for the SNS service for family communication and establish the direction of the UI design. All of the participants were communicating with their family members through Kakao Talk, which contains the biggest number of users in South Korea. To acquire the information of the tendencies of users' utilizing the SNS services, the items in the survey included 1) the SNS one is mainly using currently and the reason, 2) whom they are communicating with the most actively, 3) the function one felt to be the most useful among the SNS functions one is using, 4) the existence of family communication room, and 5) if the currently using SNS is actively contributing to the communication between the family members. We prepared Image Cards for the participants to easily

remind themselves of their experience and to talk naturally regarding SNS. Image Card was categorized into the functions most frequently used in the SNS services based on the pre-investigation according to age group, such as sending regards, emoticons, daily talks, celebrating special occasions, sharing information or photos, weather, and health.

User Investigation Results

After the Image Card interview, we went through the process of Card Sorting, to draw and categorize the inconvenience and pain points of the users. We could find the needs that were either different according to each age group or same.

Status Alarm

In the interview result, in the aspect of familial relationship, especially parents in the 50s and 60s said they needed to check the individual situation real-time, in hope for healthy status of their young offspring and worries about their safety, and also in order for every family member to communicate without being alienated. In the SNS services currently used, there is no way of knowing the current status of each family member unless asked individually, and it could arouse worries and misunderstandings if a user does not answer.

Phone Call Suggestions and Rewards

The trend is SNS becoming the major means for communication which could replace phone calls or text messages, but those who participated in the interview had different thoughts. They thought SNS was not of great help in creating emotional bonds among the family as to replace phone calls. It is because the medium based on texts lacks the capacity of transmitting non-linguistic clues, and therefore has

	Sex	Age	Job
P1	F	55	Biz Owner
P2	M	60	Biz Owner
P3	F	29	Designer
P4	M	16/16/16	Student
P5	F	17/17/16	Student

Table 1: General Information of Interviewees

Late-Breaking Work



Figure 3: Setting the Persona: Based on the content of interviews and observations during the research, we expressed the user behavior, Frustration and Pain Point, as well as Goals and needs to represent the diverse behavior patterns occurring while using the app to be realized through the current research.

lower social presence that refers to the subjective quality that people feel about the media, i.e. the degree of the feeling of talking to the other party face to face, in communications using the media and richness. Therefore, the voice calls, in which communication is in place through voices that can transmit tones and ambiances, and which can transmit the surrounding clue information, provides much higher social presence than other text-based media [2].

Emoticons for Family Communication

“Emoticon” is a compound word of emotion and icon, which means quasi-symbol and it refers to the symbols that express emotions through texts. Seen from the interview results of the family members of the current study, people wanted the emoticon designs which could be empathized by each and every member of the family, and could properly express the feeling of individual’s in accordance with one’s age. The actions and emotions of the emoticons of the SNS in current use are not that of an actual family member’s but that of third-party cartoon characters’, and are inappropriate for the seniors in their 50s and 60s for the characters are too young and funny.

Lack of Items for Enhancement of Familial Communication

Several items needed for familial communication were suggested for the SNS services currently used. Also, they wanted to share the weather information such as yellow dust, sweltering heat, or rain, for the health and safety of their family members, and thought it would be better if SNS told the special occasions in advance, such as birthdays or wedding anniversaries, the things we could easily go careless about.

Easy and Convenient Directions

The users in the 50s and 60s mentioned their inconvenience of utilizing the SNS due to lack of manuals for adults and seniors. Studies suggest that people over the age of 60 avoid using more complex functions [3]. The participants especially said that they would prefer if the functions of posting important notices to the family, and sharing as well as saving the photos were easier.

Mobile app design

We intend to design a mobile messenger app for enhancement and inducement in familial communication, by improving the concrete limitations difficulties of the existent SNS based on the comprehensive survey of pain points and needs felt by the members of each age group, to use in the process of designing the SNS for the family members.

Emoticons with Faces of Family Members

The current study goes with the trends by reflecting the designing features of Kakao Talk, and intends to arouse joyfulness in the family by providing a function of composing one’s own face with the emoticons, to express one’s most honest feelings along with proper gestures. If the family members upload the photos of one’s different emotions (e.g. Sad, happy, confused) to the app and choose a gesture, emoticons with one’s own face are made. The emoticons have been designed to realistically express one’s own emotions. Especially users in the 50s and 60s preferred the faces of the family members on the emoticon to certain characters, because they liked to see the faces of their offspring relatively more often (Figure 4, and 2nd Screen of Figure 10).

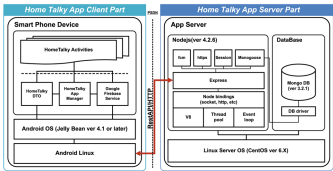


Figure 5: System Overview: This system consists of a server, database, and an android application. Linux Centos 6.X was used as the server, and Nodejs 4.2.6 was used as the app server. And MongoDB 3.2.1 was used as the database.

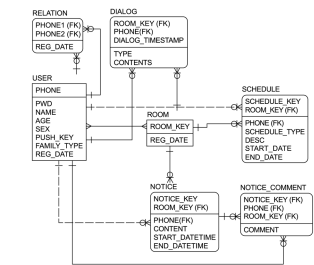


Figure 6: ER-Diagram: The database of MongoDB is an atypical database, and as it uses the system included in the database differently from the existent ones, it could simply the complicated reference relations. As such, the database for this system consists of 5 DBs



Figure 4. Emoticons with Faces of Family Members

Phone Call & a Date of Family Meeting Suggestions and Weather Check

Once a week an alarm message is automatically provided suggesting phone call between family members (1st Screen of Figure 7). If the call is fulfilled, a special reward is given. A special kind of flower grows one by one in the family garden and makes a grand flower garden, with a group of hearts flying around for a short time. The period of phone call alarm messages can be set by the user according to the family circumstances. Most users said they would like to call once a week.

Moreover, when each family member registers his/hers free time, the app calculates the free time which comes in common, and automatically notices the "family meeting day" (2nd Screen of Figure 7).

The weather notices are also fixed on the top side of the screen and an automatic notification which enable the family to be more considerate for each other in preparing for the upcoming weather, such as umbrellas and masks. (3rd screen of Figure 7).



Figure 7. From left- Phone Call Suggestion, A Date of Family Meeting Suggestion, Weather Check

Continuous Conversation-Inducing Gamification

To induce the continuous conversation between the family members, we designed the beautiful rewards to be given – the flowers will bloom in the family garden, according to the degree of the family participating in continuous conversation and putting efforts for communication. There is a study of which the result tells that activities involving the whole family such as weekend farms are deeply related with emotional satisfaction of the family, stability and strength of the household, and they heighten the closeness between the family members [4]. On the other hand, this is a phased gamification system in which the background image gets darker, or in which it rains or strikes thunders if there is no conversation among the family for a certain period. The goal of conversation duration can be set by the family members according to the situation (Figure 8).

Functions	URL Body Data	Method	Response
Transmission of dialogue	/user/talk/room Dialog JSON data	Post	Success/Fail JSON data
User information reference	/user/:key/:value	Get	User JSON data
Room information reference	/room/find/:key/:value	Get	Room JSON data
Invitation to a chatting room	/room/roomID/add/ user/userid	Put	Success/Fail JSON data
Posting Notices	/room/roomID/add/ noticeNotice JSON data	Post	Success/Fail JSON data

Figure 9: The server performs the functions of log-in into the app, addition of users, reference of chatting rooms, and conversation. The access URI according to the function requests is composed logically in accordance with the RestAPI design guidelines.



Figure 11: User Test: Role of the descendants (above) and the parents (below).



Figure 8. The Garden Background Changing in Accordance with the Frequent of Family Conversation

Status Alarm Informing Real-Time Status of Family Members
An area of informing the status/situation of the family members is provided at the bottom of the screen. One can choose the appropriate item in the list, if one is not in the right circumstances for communication (1st Screen of Figure 10).



Figure 10. From Left- Status Alarm, Family Emoticons, Anniversary Alarms

User Test

The user test took 8 participants and they all were the participants for the interview, one from each age group

or gender. The design of the questions was proceeded in 5 categories in total, which contained Interaction, Self-disclosure, Enjoyment, Convenience and Graphic design. Through the test, participants were very satisfied with the service and thought it was very appropriate for forming the affectionate relationship with family.

Discussion and Future Work

This study targeted families, developed a mobile SNS service for enhancement of communication among every family member, and verified the effectiveness in improving the communication from the users in the late 10s, who start to possess one’s own smart phone, to the generation of the parents in their 60s, using this service.

For this, we designated the mobile SNS users from those in the 10s to 60s, and gave directions to the subjects to use the APP service in person, which was developed for improvement in family communication. As a result, the participants could express the feelings to the family they normally could not, with relative ease and freedom, and showed the most active attitude toward the conversation between family members.

In the follow-up study, we would strive for an improvement in easy process of uploading emoticons, anniversary information and providing rigorous garden background changing systems which could provide motivation for long-term family communication by giving the feeling of staying together. Above all, we hope that this tool could be a reference for a study of family communication and could be a service for every member of the family could participate without the feeling of gaps in generation.

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