Introduction to editable visual object and its description schema for mobile applications

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A B S T R A C T

With the spread of portable smart devices, social networking services are gaining popularity. At the same time, emoticons which can be used a primary tool to deliver the enriched personal feelings are also gaining popularity in the social networking services. Now, emoticon markets are much bigger than before since the territory of emoticons broadens the culture and social issues. However, provided emoticons from the service providers are difficult to express the exact personalized feeling. Thus, users cannot edit what they want to express. In this study, we propose a new concept of emoticons, an editable visual object, to resolve above problems. User can edit the components inside the proposed editable visual object and send it to express exact intention. Further, we propose an efficient editable visual object description schema to represent and transmit the editable visual object. To prove the performance and efficiency of proposed technique, we implement and test the prototype system for the mobile device. As shown in the test results, the proposed description method is at most 100 times superior to the compared screen capturing method in the view of transmission bandwidth. The proposed editable visual object can be exploited not only mobile applications, but also various fields such as education and medical field.

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1. Introduction

Through the dialogue, people want to not only exchange information, but also sympathize with their thoughts and feelings. Since we could chat with someone via the computer, people was attempting to deliver their exact intention or enriched feeling by using simple drawing which is composed of alphabets or symbols such as :) and ;P. These are called texticons, and these are widely used in computer chatting and short message service (SMS) in the mobile phone. The position of texticons is changed to emoticons after smartphone generalization around 2010 [1–3]. Emoticons are now an essential component of mobile applications such as social networking service (SNS) and mobile messengers. Now, many people choose the mobile applications based on the diversity and design of included emoticons.

As you can see from the survey results about mobile messenger application usage in Fig. 1, the proportion using emoticons in the mobile messenger chatting is gradually increasing. In the case of Kakaotalk which is the most commonly used mobile messenger in South Korea, the proportion of emotion usage is over 95%. The survey results also tell us the prospect that emoticon usage is not easily drop down. The size of emoticon market is also very huge. As shown in Fig. 2, the sales of global mobile messenger market in 2014 will be around 193 billion dollars, and the sales will be reached at 229 billion dollars in 2015. More than 1 billion persons are using mobile messenger, thus a great many emoticons are used in a day.

The amount of emoticon usage is tremendously increased nowadays. The reasons can be found in the abstraction of feelings and intimacy which is the innate characteristics of emoticons. Users can express their complex feelings in easy way by using emoticons. Further, the receiver may feel intimacy when the sender uses emoticons in the case of simple reply.

Emoticons have a lot of strong points mentioned above, however, they also have a few inevitable drawbacks:

- It is difficult to find the well-suited one among lots of emoticons in the given situation.
- Sometimes, there is no suitable emoticon in the given situation.
- Most of emoticons are difficult to deliver the accurate information.
- Emoticons are difficult to express the specific actions that user want.
- Provided emoticons could not reflect the every user's personalized preference.

(a) Global mobile messenger users

(b) Sticker and emoticon usage in mobile messengers

(c) Emoticon usage in Kakaotalk

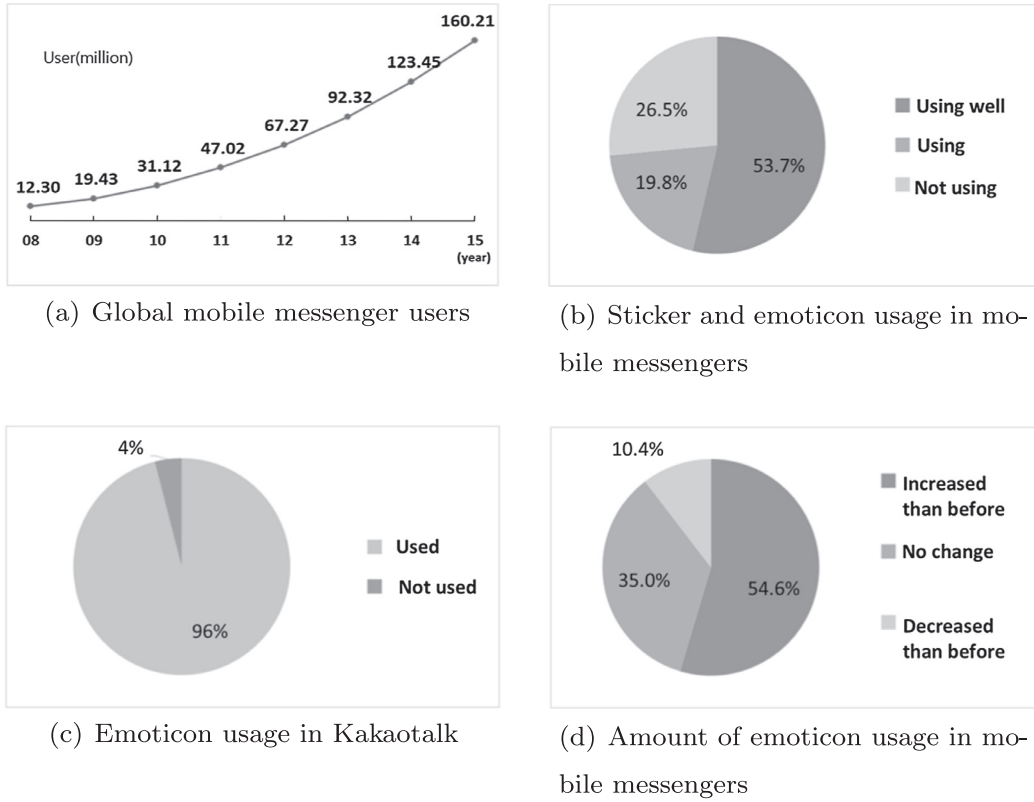(d) Amount of emoticon usage in mobile messengers

Fig. 1. Emoticon usage status in mobile messengers [4–6].

In this study, we propose a new concept of emoticons, the editable visual object. (From now, we refer an editable visual object as EVO.) Also, we propose an efficient way to describe EVO. EVO description method can be used for transmitting and storing EVO.

The remainder of this paper is organized as follow. In Section 2, we propose EVO definition, description method, and transmission. More specifically, the definition and structure of EVO is presented in subSection 2.1. In subSection 2.2, the way how to describe EVO is proposed. In subSection 2.3, the efficient EVO transmission method is presented. In Section 3, we check the operation of EVO and its desciption schema by using the implemented mobile application prototype. Finally, Section 4 provides conclusion and future works.

2. Proposed editable visual object

In this section, we first define the concept and structure of EVO and propose the efficient EVO description method. Also, we think about the efficient way of EVO transmission.

2.1. Structure of EVO

One emoticon uses just one image to express one object, whereas EVO composes a set of component images to express one perfect object as shown in Fig. 3. Further, every component image in the EVO can be rotated, translated, and scaled (i.e. can be affine transformed). For example, in the case of "face" emoticon, every single emoticon is needed to express every facial expression such as smile, irritancy, sad, etc. In the case of "face" EVO, however, we need just one "face" EVO to express the whole facial expressions, since we can edit the angle, size, and position of face components such as eye, nose, and mouth. Also, we can express something by adding or removing the component images. For
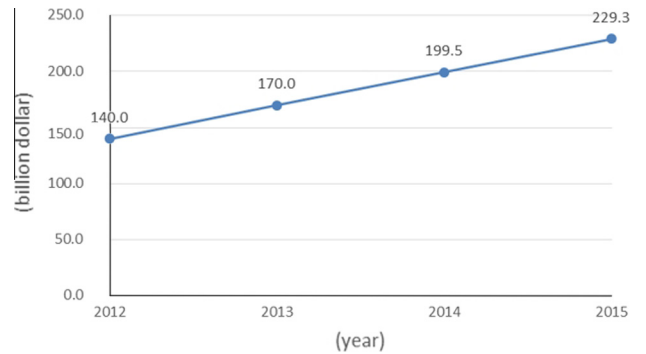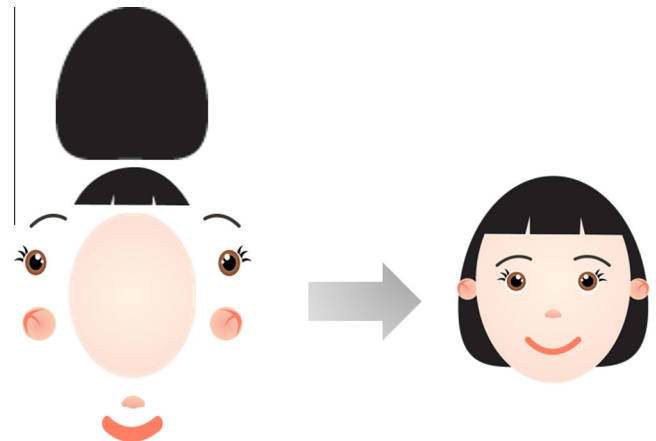

Fig. 2. Global mobile messenger market size [4].

Fig. 3. Component images of "face" EVO.