Smart Makeup System: Supporting Makeup using Lifelog Sharing

Maki Nakagawa[1] **Koji Tsukada**[1,2] **Itiro Siio**[1]

[1] Ochanomizu University
2-1-1 Otsuka Bunkyo Tokyo 112-8610, Japan
nakagawa.maki@is.ocha.ac.jp, siio@acm.com

[2] PRESTO Japan Science and Technology Agency
4-1-8 Honcho Kawaguchi Saitama 332-0012, Japan
tsuka@mobiquitous.com

ABSTRACT
Although many women wear makeup every day, they often have difficulty in varying their makeup. In this paper, we propose "Smart Makeup System" that helps users find new makeup methods for use with their daily cosmetics by sharing makeup logs (makeup pictures and cosmetics usages) on the web.

Author Keywords
Makeup support, Dresser, Life log, SNS

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms
Design and Human Factors

INTRODUCTION

Although many women wear makeup every day, they are not always satisfied with their makeup. Recently, many web services have appeared to help women overcome makeup problems. For example, cosmetic companies now publish makeup techniques on their web sites, enabling users to easily understand basic makeup methods using face pictures and cosmetics information. Moreover, SNS (Social Network Service) for beauty-conscious people supports the sharing of subjective comments regarding cosmetics and provides easily accessible cosmetics information. These services may improve makeup experiences; however, people still have difficulty in varying their daily cosmetics.

To solve this problem, we propose a "Smart Makeup System" that helps users easily share their makeup logs (makeup pictures and cosmetic usage) with friends, browse the friends' logs quickly, and find new makeup methods related to their daily cosmetics.

SMART MAKEUP SYSTEM

As mentioned above, the goal of Smart Makeup System (SMS) is to help users easily try new makeup variations by sharing their makeup logs. The main features of SMS are as follows: (1) registering cosmetics by user, (2) recording makeup logs with little effort, and (3) uploading and sharing makeup logs via the web.

UbiComp'11, September 17–21, 2011, Beijing, China.
ACM 978-1-4503-0630-0/11/09.

SMS basically consist of three following components (Fig. 1);

- Smart Makeup Mapper
- Smart Makeup Dresser
- Smart Makeup Communicator

The Smart Makeup Mapper (SMM) helps users register cosmetics quickly by themselves, the Smart Makeup Dresser (SMD) enables users to take makeup logs (makeup pictures and cosmetic usage) and upload them to an online database, and the Smart Makeup Communicator (SMC) helps users browse the makeup logs of friends who use similar cosmetics.

Next, we explain each component in detail.

Fig. 1. The components of the Smart Makeup System

SMART MAKEUP MAPPER AND DRESSER

Figure 2 shows the general appearance of the Smart Makeup Mapper (SMM) and Smart Makeup Dresser (SMD). The SMD basically consists of a USB camera, an LCD, an RFID reader and a PC. To keep the appearance of the dresser, we built the LCD and the camera into the right mirror, fitted the RFID reader inside a basket, and the PC in the right drawer. We attached devices for the SMM (an RFID extended antenna and a barcode reader) inside the left drawer.

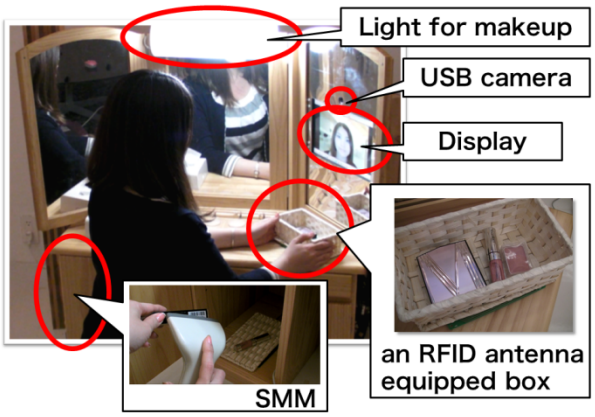

Fig. 2. The Smart Makeup Dresser

The SMM helps users register their cosmetics to the system as follows: (1) attaching a RFID tag on a cosmetic, (2) putting the tagged cosmetic on the RFID reader, and (3) reading the barcode on the cosmetic. Moreover, the SMM can automatically collect basic information for each cosmetic (e.g., picture, name, abstract, and URL) from the barcode using Rakuten API (a Japanese shopping web service). Thus, users can easily register their cosmetics including tag ID, barcode, and basic information.

The SMD helps users capture pictures of the user's face (makeup pictures) when they finish applying makeup and put their cosmetics on the RFID reader. The system then automatically uploads the makeup logs (cosmetic use and makeup pictures) to the database.

SMART MAKEUP COMMUNICATOR (SMC)

The Smart Makeup Communicator (SMC) has three main features; (1) supporting ease of operation, (2) searching makeup pictures by cosmetics and (3) dividing face parts automatically. First, the SMC is suited for use while wearing makeup since users can browse the SMC using very simple operations. Second, users can search makeup pictures of friends who use the same cosmetics. This function helps users to try new makeup variations with their daily cosmetics. Third, the SMC can automatically divide makeup pictures into face parts (eyes, lips and cheeks) using Open CV (http://opencv.willowgarage.com/wiki/). The face parts are useful not only for checking makeup techniques in detail, but also protecting the privacy of the users. Each user can choose which parts are shown to her friends. Figure 3 shows a user page and search results based on cosmetics. In the user page, makeup pictures and cosmetics information are ordered by time. Users can search for the makeup logs of their friends by clicking a cosmetic picture. Moreover, users can check detailed information (large pictures and cosmetics use) as shown in Figure 4 by clicking a makeup picture.

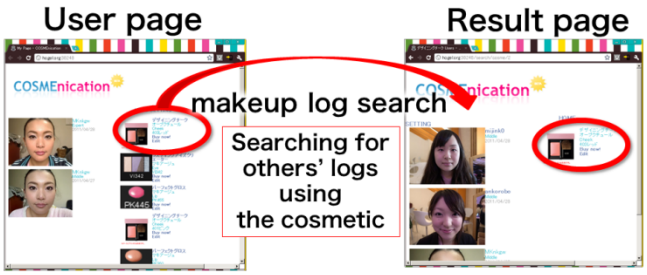

Fig. 3. The user page (left) and the result page (right)

Fig. 4. The detailed information page

RELATED WORKS

We have proposed a Smart Skincare System [1] that helps users record skincare logs and to share their logs with skincare experts easily. Smart Makeup Mirror [2] is a digital mirror that offers several functions (e.g., zooming and lighting simulations) to helps users apply makeup more easily. Meanwhile, the SMS focused on recording makeup logs easily and sharing them with their friends to encourage new variations in daily makeup.

CONCLUSION AND FUTURE WORK

In this paper, we propose a "Smart Makeup System" that helps users find new makeup methods for use with their cosmetics by sharing their makeup logs (makeup pictures and usage of cosmetics) on the web. We have already installed this system in actual home environments and have started long-term evaluations.

ACKNOWLEDGMENTS

This work was partly supported by JST PRESTO program.

REFERENCES

1. Nakagawa, M., Tsukada, K., Siio, I..: Smart Skincare System: Remote Skincare Advice System Using Life Logs, Proceedings of the 2nd Augmented Human International Conference(AH2011), pp. 21:1--21:8, ACM Press, (Mar, 2011)
2. Iwabuchi E, Nakagawa, M., Siio, I.: Smart Makeup Mirror: Computer-Augmented Mirror to Aid Makeup Application, Lecture Notes in Computer Science, Vol. 5613, pp. 495—503 Springer (2009)