Understanding the user's situation is very important in the design process. There are many ways to understand a user's situation—a designer might observe a user's situation or a user might record their own situation in Human Centered Design (HCD) file. However, the latter of these methods has not been very popular mainly because of the burden it places on the users. This research proposes a new smartphone-based design support application for creating value in design, named “HN Camera”, which can be used to record the users’ situation, without any additional burden on them. This application is based on the Extended Alethic/ Deontic/ Temporal (ADT) model concept. A user or a designer can understand and record the user's situation based on the Physical factor, the Kansel factor, and the Cultural factor using NH Camera. The application was used in visualizing and analyzing tourists' travel as a service design. Through this, the effectiveness of the proposed application was clarified.

Proposal for Design Support Application Based on Extended ADT Model

What is Extended ADT model?

The user's behavior is affected by physical laws, and is restricted by designer's intention also. Designers need to observe the relationship between cause and effect in design. In other words, designers must observe the user's experience, based on the relationship with physical laws and the user's behavior.

The Extented ADT Model Concept

In the base layer, restriction from environment is described. These restrictions are based on three factors: physical, emotional, and cultural factors. The top layer represents designers' intentions. The outcomes of their work are shown on the main layer. The circles on the main layer indicate the set of possible solutions of each designer. Design works should convey designers' intention under restriction from environment.

Proposal for Design Support Application Based on Extended ADT Model

A user is easy to use without any special experiences, can record repeatedly, and offer the convenience of connection to SNS using the internet. By using a mobile photo printer, the recorded information is printed out immediately, the printed photos are easy to use for the KJ method for design works as well.

Summary

Understanding the user's situation is very important in the design process. Actually, user's needs in the service design field such as travel was said to be harder to visualize and clarify than product design, using only questionnaire method. However, it is easier to understand and grasp the user's situation or various needs by using HN Camera application based on the extended ADT model. Especially, taking a photo during travel is a very natural behavior for users, so participants did not feel any additional burden in recording some information using HN Camera in evaluation experiment. As a result, the effectiveness of the proposed application was clarified. In the future, our proposed application will be developed through further experiments.